pennsylvania
DEPARTMENT OF EDUCATION

2024 PENNSYLVANIA SYSTEM OF SCHOOL ASSESSMENT TECHNICAL REPORT

MATHEMATICS, ENGLISH LANGUAGE ARTS, AND SCIENCE

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GLOSSARY OF COMMON TERMS

The following table contains some terms used in this technical report and their meanings. Some of these terms are used universally in the assessment community, and some of these terms are used commonly by psychometric professionals. A glossary of accommodation terms as applied to the PSSA is provided in Chapter Ten.

Table G–1. Glossary of Terms

Term	Common Definition
Ability	In Rasch scaling, ability is a generic term indicating the level of an individual on the construct measured by an exam. As an example for the PSSA, a student's reading ability is measured by how the student performed on the PSSA Reading test. A student who answered more items correctly has a higher ability than a student who answered fewer items correctly.
Adjacent Agreement	A score/rating difference of one (1) point in value usually assigned by two different raters under the same conditions (e.g., two independent raters give the same scores that differ by one point).
Alternate Forms	Two or more versions of a test that are considered exchangeable, i.e., they are developed using the same test specifications, they measure the same constructs in the same ways, are intended for the same purposes, and they are administered using the same directions. More specific terminology may apply depending on the degree of statistical similarity between the test forms (e.g., parallel forms, equivalent forms, and comparable forms) where parallel forms refers to the situation in which the test forms have the highest degree of similarity to each other.
Average	A measure of central tendency in a score distribution that usually refers to the arithmetic mean of a set of scores. In this case, it is determined by adding all the scores in a distribution and then dividing the obtained value by the total number of scores. Sometimes people use the word average to refer to other measures of central tendency such as the median (the score in the middle of a distribution) or mode (the score value with the greatest frequency).
Bias	In a statistical context, bias refers to any source of systematic error in the measurement of a test score. In discussing test fairness, bias may refer to construct-irrelevant components of test scores that differentially affect the performance of different groups of test takers (e.g., gender, ethnicity, etc.). Attempts are made to reduce bias by conducting item fairness reviews and various differential item functioning (DIF) analyses, detecting potential areas of concern, and either removing or revising the flagged test items prior to the development of the final operational form of the test (see also Differential Item Functioning).
Constructed-Response Item	A constructed-response (CR) item is an item that requires examinees to create their own responses, which can be expressed in various forms (e.g., written essay, created table/graph, formulated calculation, etc.). Such items are frequently scored using more than two score categories, that is, items are polytomously scored (e.g., 0, 1, 2, and 3). This item format is in contrast to when students make a choice from a supplied set of answer options (e.g., multiple-choice (MC) items which are typically dichotomously scored as right = 1 or wrong = 0). It is important to consider whether an item is scored polytomously or dichotomously when interpreting item difficulty and discrimination indices.
Content Validity Evidence	Evidence regarding the extent to which a test provides an appropriate sampling of a content domain of interest (e.g., assessable portions of a state's Grade 6 mathematics curriculum in terms of the knowledge, skills, objectives, and processes sampled).
Core-Linking Item	Items that are utilized during the linking and equating process (see also Linking and Equating). They are a subset of the PSSA operational items and so they 1) are the same on all test forms for any grade/subject-area test and 2) contribute to students' total raw scores and scaled scores.
Criterion- Referenced Interpretation	When a score is interpreted as a measure of a student's performance with respect to an expected level of mastery, educational objective, or standard. The types of resulting score interpretations provide information about what a student knows or can do with respect to a given content area.
Cut Score	A specified point on a score scale such that scores at or above that point are interpreted or acted upon differently from scores below that point (e.g., a score designated as the minimum level of performance needed to pass a competency test). One or more cut scores can be set for a test, which results in differentiating among various proficiency levels. Methods for establishing cut scores vary. For the PSSA, three cut scores are used to place students into one of four performance levels (see also Performance Level Setting).

Term	Common Definition
Decision Consistency	The extent to which classifications based on test scores would match the decisions based on scores from a second, parallel form of the same test. It is often expressed as the proportion of examinees who are classified consistently across the two test administrations.
Differential Item Functioning (DIF)	A statistical property of a test item in which different groups of test takers (who have the same total test score) have different average item scores. In other words, students with the same ability level but different group memberships do not have the same probability of answering the item correctly (see also Bias).
Distractor	An incorrect option in a multiple-choice item.
Equating	The process that results in scores that can be used interchangeably across different test forms and/or test administrations. Equated test scores are considered exchangeable. Consequently, the requirements for equating are strong and somewhat complex (equal construct and precision, equity, and invariance). In practical terms, it is often stated that students should perceive no differences regardless of the test form administered (see also Scale Linking, Pre-equating, and Post-equating).
Equating Block (EB) Items	The PSSA uses multiple test forms for each grade/subject-area test. Each form is composed of operational (OP) items, equating block (EB) items, and field-test (FT) items. EB items are utilized during the linking process (see also Linking). Each test form includes a set of EB items. EB items are not part of any student scores.
Error of Measurement	The amount by which the score actually received (an observed score) differs from a hypothetical true score (see also Standard Error of Measurement).
Evidence-Based Selected-Response (EBSR) Item	A type of item that has two parts and requires the test taker to select a response from a group of possible answer choices in Part One, one of which is the correct answer (or key) to the question posed, and to then select one or two responses from a group of possible answer choices in Part Two, which provide evidence to support the correct answer in Part One.
Exact Agreement	When identical scores/ratings are assigned by two different raters under the same conditions (e.g., two independent raters give a paper the same score).
Field-Test (FT) Items	The PSSA uses multiple test forms for each grade/subject-area test. Each form is comprised of operational (OP) items, equating block (EB) items, and field-test (FT) items. An FT item is a newly developed item that is ready to be tried out to determine its statistical properties (see also *P*-value and Point-Biserial Correlation). Each test form includes a set of FT items. FT items are not part of any student scores.
Frequency	The number of times that a certain value or range of values (score interval) occurs in a distribution of scores.
Frequency Distribution	A tabulation of scores from low to high or high to low showing the number and/or percent of individuals who obtain each score or who fall within each score interval or category.
Infit/Outfit	Statistical indicators of the agreement of the data and the measurement model (see also Outfit/Infit).
Item Difficulty	For the Rasch model, the dichotomous item difficulty represents the point along the latent trait continuum where an examinee has a 0.50 probability of correctly responding. For a polytomous item, the difficulty is the average of the item's step difficulties (see also Step Difficulty).
Key	The correct response option or answer to a test item.
Linking	A generic term referring to a number of processes by which scores from one or more tests are made comparable to some degree. Linking includes several classes of transformations (equating, scale alignment, prediction, etc.). Equating is associated with the strongest degree of comparability (exchangeable scores). Other linkages may be very strong but fail to meet one or more of the strict criteria required of equating (see also Equating). PSSA scores are equated.
Logit	In Rasch scaling, logits are units used to express both examinee ability and item difficulty. When expressing examinee ability, a student who answers more items correctly has a higher logit than a student who answers fewer items correctly. Logits are transformed into Scaled Scores through a linear transformation. When expressing item difficulty, logits are transformed *p*-value (see also *P*-value). The logit difficulty scale is inversely related to *p*-values. A higher logit value would represent a relatively harder item, while a lower logit value would represent a relatively easier item.
Mean	Also referred to as the arithmetic mean of a set of scores, is found by adding all the score values in a distribution and dividing by the total number of scores. For example, the mean of the set {66, 76, 85, 97} is 81. The value of a mean can be influenced by extreme values in a score distribution.

Term	Common Definition
Measure	In Rasch scaling, measure generally refers to a specific estimate of an examinee's ability (often expressed as logits) or an item's difficulty (again, often expressed as logits). As an example for the PSSA, a student's reading measure might be equal to 0.525 logits. Or, a PSSA Reading test item might have logit equal to -0.905.
Median	The middle point or score in a set of rank-ordered observations that divides the distribution into two equal parts such that each part contains 50 percent of the total data set. More simply put, half of the scores are below the median value and half of the scores are above the median value. As an example, the median for the following ranked set of scores {2, 3, 6, 8, 9} is 6.
Multiple-Choice Item	A type of item that requires the test taker to select a response from a group of possible choices, one of which is the correct answer (or key) to the question posed (see also Constructed-Response Item).
N-count	Sometimes designated as *N* or *n*, it is the number of observations (usually individuals or students) in a particular group. Some examples include the number of students tested, the number of students tested from a specific subpopulation (e.g., females), the number of students who attained a specific score, etc. In the follow set {23, 32, 56, 65, 78, 87}, $n = 6$.
Open-Ended Item	A type of constructed-response item found in the mathematics and science assessments that requires examinees to create their own responses, which can be expressed in various forms (e.g., written description, created table/graph, formulated calculation, etc.). Such items are frequently scored using more than two score categories, that is, polytomously (e.g., 0, 1, 2, 3, and 4). This format is in contrast to when students make a choice from a supplied set of answer options (e.g., multiple-choice (MC) items which are typically dichotomously scored as right = 1 or wrong = 0.) When interpreting item difficulty and discrimination indices it is important to consider whether an item is polytomously or dichotomously scored.
Operational Item	The PSSA uses multiple test forms for each grade/subject-area test. Each form is composed of operational (OP) items, equating block (EB) items, and field-test (FT) items. OP items are the same on all forms for any grade/subject-area test. Student total raw scores and scaled scores are based exclusively on the OP items.
Outfit/Infit	Statistical indicators of the agreement of the data and the measurement model. Infit and Outfit are highly correlated, and both are highly correlated with the point-biserial correlation. Underfit can be caused when low-ability students correctly answer difficult items (perhaps by guessing or atypical experience) or high-ability students incorrectly answer easy items (perhaps because of carelessness or gaps in instruction). Any model expects some level of variability, so overfit can occur when nearly all low-ability students miss an item while nearly all high-ability students get the item correct.
Percent Correct	When referring to an individual item, the percent correct is the item's *p*-value expressed as a percent (instead of a proportion). When referring to a total test score, it is the percentage of the total number of points that a student earned. The percent correct score is obtained by dividing the student's raw score by the total number of possible points and multiplying the result by 100. Percent Correct scores are often used in criterion-referenced interpretations and are generally more helpful if the overall difficulty of a test is known. Sometimes Percent Correct scores are incorrectly interpreted as Percentile Ranks.
Percentile	The score or point in a score distribution at or below which a given percentage of scores fall. It should be emphasized that it is a value on the score scale, not the associated percentage (although sometimes in casual usage this misinterpretation is made). For example, if 72 percent of the students score at or below a Scaled Score of 1500 on a given test, then the Scaled Score of 1500 would be considered the 72nd percentile. As another example, the median is the 50th percentile.
Percentile Rank	The percentage of scores in a specified distribution falling at/below a certain point on a score distribution. Percentile Ranks range in value from 1 to 99, and indicate the status or relative standing of an individual within a specified group by indicating the percent of individuals in that group who obtained equal or lower scores. An individual's percentile rank can vary depending on which group is used to determine the ranking. As suggested above, Percentiles and Percentile Rank are sometimes used interchangeably; however, strictly speaking, a percentile is a value on the score scale.
Performance Level Descriptors	Descriptions of an individual's competency in a particular content area, usually defined as ordered categories on a continuum, often labeled from Below Basic to Advanced, that constitute broad ranges for classifying performance. The exact labeling of these categories, and narrative descriptions, may vary from one assessment or testing program to another.

Term	Common Definition
Performance Level Setting	Also referred to as standard setting, a procedure used in the determination of the cut scores for a given assessment that is used to measure students' progress towards certain performance standards. Standard setting methods vary (e.g., modified Angoff, Bookmark Method, etc.), but most use a panel of educators and expert judgments to operationalize the level of achievement students must demonstrate in order to be categorized within each performance level.
Point-Biserial Correlation	In classical test theory this is an item discrimination index. It is the correlation between a dichotomously scored item and a continuous criterion, usually represented by the total test score (or the corrected total test score with the reference item removed). It reflects the extent to which an item differentiates between high-scoring and low-scoring examinees. This discrimination index ranges from –1.00 to +1.00. The higher the discrimination index (the closer to +1.00), the better the item is considered to be performing. For multiple-choice items scored as 0 or 1, it is rare for the value of this index to exceed 0.5.
Post-Equating	Post-equating refers to the method of utilizing data from the current administration for scale linking and equating. Post-equating relies heavily on collecting data from a representative sample, estimating new item parameters, linking the item parameters to the base scale, and estimating student ability based on the linked item parameters. PSSA utilized a post-equated test design prior to 2019, but now employs pre-equating (see also Pre-Equating).
Pre-Equating	Pre-equating refers to the method of utilizing previously estimated and linked item parameters for equating. Because item parameters have already been linked to the base scale, pre-equated solutions are generated prior to the testing window and validated with current data during pre-equating verification. The main purpose of pre-equating verification is to ensure that the data fits the model within expectation (see Chapter Fifteen). PSSA employed pre-equating beginning in 2019 in order to reduce the reporting window (see also Post-Equating).
P-value	An index indicating an item's difficulty for some specified group (perhaps grade). It is calculated as the proportion (sometimes percent) of students in the group who answer an item correctly. *P*-values range from 0.0 to 1.0 on the proportion scale. Lower values correspond to more difficult items and higher values correspond to easier items. *P*-values are usually provided for multiple-choice items or other items worth one point. For open-ended items or items worth more than one point, difficulty on a *p*-value-like scale can be estimated by dividing the item mean score by the maximum number of points possible for the item (see also Logit).
Raw Score (RS)	An unadjusted score usually determined by tallying the number of questions answered correctly, or by the sum of item scores (i.e., points). (Some rarer situations might include formula-scoring, the amount of time required to perform a task, the number of errors, application of basal/ceiling rules, etc.). Raw scores typically have little or no meaning by themselves and require additional information—like the number of items on the test, the difficulty of the test items, norm-referenced information, or criterion-referenced information.
Reliability	The expected degree to which test scores for a group of examinees are consistent over exchangeable replications of an assessment procedure, and therefore, are considered dependable and repeatable for an individual examinee. A test that produces highly consistent, stable results (i.e., relatively free from random error) is said to be highly reliable. The reliability of a test is typically expressed as a reliability coefficient or by the standard error of measurement derived by that coefficient.
Reliability Coefficient	A statistical index that reflects the degree to which scores are free from random measurement error. Theoretically, it expresses the consistency of test scores as the ratio of true score variance to total score variance (true score variance plus error variance). This statistic is often expressed as correlation coefficient (e.g., correlation between two forms of a test) or with an index that resembles a correlation coefficient (e.g., calculation of a test's internal consistency using Coefficient Alpha). Expressed this way, the reliability coefficient is a unitless index. The higher the value of the index (closer to 1.0), the greater the reliability of the test (see also Standard Error of Measurement).
Scale Linking	The first step in any equating process in which independent item estimates are placed on the same scale of measurement (the logit scale). Scale linking results in item parameters that are on the same scale of measurement. Equating procedures can only be implemented once scale linking is achieved (see also Equating). The data used for scale linking can either be from the current administration (see Post-Equating) or from previous administrations (Pre-Equating).

Term	Common Definition
Scaled Score	A mathematical transformation of a logit score developed through a process called scaling. Scaled scores are most useful when comparing test results over time. Several different methods of scaling exist, but each is intended to provide a continuous and meaningful scaled score across different test forms and test administrations.
Selected-Response Item	See Multiple-Choice Item.
Short-Answer Item	A type of constructed-response item found in the grade 3 ELA assessment that requires the test taker to compose an answer based on a passage or passage set the student has read. Each short-answer (SA) item is scored using an item-specific scoring guideline based on a 0–3 point general scoring guideline. Also referred to as Constructed-Response (CR) or Open-ended (OE) Response items.
Spiraling	A packaging process used when multiple forms of a test exist and it is desired that each form be tested in all classrooms (or other grouping unit (e.g., schools)) participating in the testing process. This process allows for the random distribution of test booklets to students. For example, if a package has four test forms labeled A, B, C, and D, the order of the test booklets in the package would be A, B, C, D, A, B, C, D, A, B, C, D, etc.
Standard Deviation (SD)	A statistic that measures the degree of spread or dispersion of a variable (e.g., set of scores). The standard deviation is a commonly used method of examining a distribution's variability since the standard deviation is expressed in the same units as the data. The value of this statistic is always greater than or equal to zero. If all of the scores in a distribution are identical, the standard deviation is equal to zero. The further the scores are away from each other in value, the greater the standard deviation. This statistic is calculated using the information about the deviations (distances) between each score and the distribution's mean. It is equivalent to the square root of the variance statistic.
Standard Error of Measurement (SEM)	The amount an observed score is expected to fluctuate around the true score. As an example, across replications of a measurement procedure, the true score will not differ by more than plus or minus one standard error from the observed score about 68 percent of the time (assuming normally distributed errors). The SEM is frequently used to obtain an idea of the consistency of a person's score in actual score units or to set a confidence band around a score in terms of the error of measurement. Often a single SEM value is calculated for all test scores. On other occasions, however, the value of the SEM can vary along a score scale. Conditional standard errors of measurement (CSEMs) provide an SEM for each possible scaled score.
Step Difficulty	Step difficulty is a parameter estimate in Master's Partial Credit Model (PCM) that represents the relative difficulty of each score step (e.g., going from a score of 1 to a score of 2). The higher the value of a particular step difficulty, the more difficult a particular step is relative to other score steps (e.g., is it harder to go from a 1 to a 2, or to go from a 2 to a 3).
Strand	On score reports, a strand often refers to a set of items on a test measuring the same contextual area (e.g., Number Sense in Mathematics). Items developed to measure the same reporting category would be used to determine the strand score (sometimes called "subscale" score).
Technical Advisory Committee (TAC)	A group of individuals, most often professionals in the field of testing, who are either appointed or selected to make recommendations for and to guide the technical development of a given testing program.
Text-Dependent Analysis Item	A type of constructed-response item found in the ELA assessment in Grades 4–8 that requires the test-taker to compose an essay based on a passage or passage set that the student has read during the test event. Test-takers must draw on basic writing skills while inferring and synthesizing information from the passage in order to develop the response. The text-dependent analysis (TDA) item is scored on a holistic scoring guideline on a 4-point scale and is weighted for scoring purposes.
Validity	The degree to which accumulated evidence and theory support specific interpretations of test scores entailed by the purposed uses of a test. There are various ways of gathering validity evidence.

PREFACE: AN OVERVIEW OF ASSESSMENTS FROM 2003 TO THE PRESENT

The period from 2003 through 2006 brought significant structural changes to the test blueprint for the Pennsylvania System of School Assessment (PSSA). These changes necessitated extensive test development and field testing activity along with phased-in implementation of the operational assessment. Included in this process was the development and implementation of assessments at additional grade levels.

For mathematics and reading, content changes for Grades 5, 8, and 11 were developed in 2003, field tested in spring 2004, and implemented in spring 2005. The *2005 PSSA Technical Report for Reading and Mathematics* provides a description of test development activities including a review of open-ended tasks and multiple-choice items, field testing, selection of items, statistical analysis of assessment data, reliability, validity, standard setting, and other technical characteristics of the operational 2005 PSSA. Test development for the new grade levels of 4, 6, and 7 began in 2004, with field testing in 2005, and full implementation in 2006. Similarly, the *2006 PSSA Technical Report for Reading and Mathematics: Grades 4, 6, and 7* provides a complete description of test development activities, item review, field testing, statistical analysis, item selection, and technical characteristics of the operational 2006 PSSA for these grade levels. In 2007, the Grade 3 reading and mathematics assessment became DRC's responsibility and is covered in the *2007 PSSA Technical Report for Reading and Mathematics*, along with the remaining grades.

Changes implemented in the writing assessment of spring 2006 were designed to sharpen the focus on what is assessed with respect to Academic Standards 1.4 and 1.5. To support this effort, a shift in grade levels assessed was made, moving from Grades 6 and 9 to Grades 5 and 8, thereby aligning assessment to the end of elementary and middle school years. The writing testing window was changed from fall to February 2006 for Grades 5 and 8, making it consistent with Grade 11. Mode-specific scoring guidelines replaced domain scoring, and the introduction of stimulus-based passages and associated multiple-choice items measuring revising and editing expanded the basis of the conventions score. An account of the development of writing prompts and stimulus-based, multiple-choice items, review processes, field testing and item analysis, standard setting, and other technical characteristics of the operational 2006 PSSA may be found in the *2006 PSSA Technical Report for Writing*.

The introduction of an operational science assessment in 2008 moved closer to reality with a major standalone field test at Grades 4, 8, and 11 in April–May of 2007. A description of the development of science scenarios and related multiple-choice, short-answer open-ended, and extended open-ended questions, item review processes, statistical analysis of field test data, and selection of items for the 2008 operational science test may be found in the *2008 PSSA Preliminary Technical Report for Science*. Subsequently, the first operational science assessment took place in the spring of 2008, along with standard setting and reporting of results.

With the exception of some shifting of test windows, the spring assessments of 2009, 2010, 2011, and 2012 were conducted without change in content structure of the PSSA test instruments.

A transition to begin measuring the Pennsylvania Core Standards (PCS) in Mathematics and English Language Arts was initiated with standalone and embedded field test events in 2013 for Grades 3, 4, and 5. The transition continued in 2014 with standalone field tests in Grades 6, 7, and 8 and embedded field tests in Grades 3 through 8. As a part of this transition, starting in spring 2013, the Grade 11 PSSA and the Grade 12 PSSA Retest were dropped in favor of the Keystone Exams in Algebra I, Biology, and Literature. The 2015 administration of the PSSA marked the completion of the transition to the PCS in Mathematics and English Language Arts. Mathematics and ELA were administered in separate testing windows as separate test and answer booklets (in contrast to the combined Mathematics and Reading test and answer booklets used previously) and students in all grades participated in both the Writing and Reading portions of the ELA assessment.

In 2017 and 2018 the PSSA test designs underwent a reevaluation. In an effort to reduce testing time in the classroom the Mathematics, English Language Arts, and Science tests were reduced in overall length. For mathematics and science, the test length was shortened by reducing the number of test questions by reporting category proportionally. For ELA, in contrast, reducing the length of the test meant removing the writing prompt and a group of approximately nine multiple-choice items.

On July 16, 2022, Pennsylvania published newly adopted Pennsylvania Integrated Standards for Science, Technology & Engineering, and Environmental Literacy and Sustainability, and Pennsylvania Technology and Engineering Standards (STEELS). To support the standards, item development and field testing of the standards began in 2023 and 2024 to prepare for the operational transition to the STEELS standards.

The following pages provide an overview of the year-to-year changes to the PSSA. Tables and descriptions show the subject areas assessed, time of year the testing activity took place, and the type of testing that occurred (e.g., operational, field testing, Grade 12 retest) for each year.

To access any of the PSSA technical reports referenced in the Preface, please go to the Pennsylvania Department of Education website, www.education.pa.gov.

ASSESSMENT ACTIVITIES OCCURRING IN THE 2003–04 SCHOOL YEAR

Table P–1 outlines the operational assessments and field tests administered during the 2003–04 school year. (A spring operational assessment in mathematics and reading took place at Grades 3, 5, 8, and 11.)

As a result of new Assessment Anchor Content Standards (Assessment Anchors) developed by the Pennsylvania Department of Education (PDE) during 2003, new test items were developed (see Chapter Two of the *2005 PSSA Technical Report for Reading and Mathematics*). Following the spring operational assessment, a separate, standalone field test of new items for Grades 5, 8, and 11 was conducted. Note that Grade 11 students also took an operational writing assessment in February, and Grades 6 and 9 students participated in a fall writing assessment. Lastly, Grade 12 students who as 11th graders in the preceding spring failed to attain at least the Proficient level in any subject area were offered an opportunity to retest.

Table P–1. Operational Assessment and Field Testing During the 2003–04 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test (conducted by CTB/ McGraw-Hill)	April 2004
5	Operational mathematics and reading	April 2004
5	Standalone field test in mathematics and reading	April/May 2004
6	Operational writing	October 2004
8	Operational mathematics and reading	April 2004
8	Standalone field test in mathematics and reading	April/May 2004
9	Operational writing	October 2004
11	Operational mathematics and reading	April 2004
11	Standalone field test in mathematics and reading	April/May 2004
11	Operational writing	February 2004
12	Retest opportunity for students who as Grade 11 students in the spring of 2003 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2004

ASSESSMENT ACTIVITIES OCCURRING IN THE 2004–05 SCHOOL YEAR

Table P–2 displays the operational assessments and field tests that took place during the 2004–05 school year. The operational assessment at Grades 5, 8, and 11 used items chosen from the spring 2004 field test. This was the first operational assessment that reflected the Pennsylvania Assessment Anchors and Eligible Content. Fulfilling the No Child Left Behind Act of 2001 (NCLB) requirement that states must implement a test at Grades 3–8, a major field test in mathematics and reading was administered at Grades 4, 6, and 7. Item development for these new grade levels took place during 2004.

The Grades 6 and 9 writing assessment was reevaluated in favor of moving the writing assessment to Grades 5 and 8. This accounts for the separate (standalone) field test at these grade levels. There was also a test administration change from October to February. In addition, the writing assessment underwent changes to align the test to the Academic Standards for writing. New writing prompts and stimulus-based multiple-choice items were also field tested at Grade 11 as part of the operational assessment, hence the reference to an embedded field test. No assessment activity of any kind occurred at Grade 9. As in fall 2003, the retest opportunity at Grade 12 continued.

Table P–2. Operational Assessment and Field Testing During the 2004–05 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test (conducted by CTB/ McGraw-Hill)	April 2005
4	Standalone field test for mathematics and reading	April 2005
5	Operational mathematics and reading with embedded field test	April 2005
5	Standalone field test in writing	February 2005
6	Standalone field test for mathematics and reading	April 2005
7	Standalone field test for mathematics and reading	April 2005
8	Operational mathematics and reading with embedded field test	April 2005
8	Standalone field test in writing	February 2005
11	Operational mathematics and reading with embedded field test	April 2005
11	Operational writing with embedded field test	February 2005
12	Retest opportunity for students who as Grade 11 students in the spring of 2004 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2004

ASSESSMENT ACTIVITIES OCCURRING IN THE 2005–06 SCHOOL YEAR

Table P–3 shows the assessment activities that occurred during the 2005–06 school year. Note that the reading and mathematics operational assessments ran consecutively in Grades 3–8 and Grade 11. For Grades 4, 6, and 7, it was the first year for operational assessments. Field testing for mathematics and reading was embedded as part of the operational assessment at each grade level. At Grade 3, the reference to field testing with items developed by DRC reflects the transition of shifting the assessment from CTB/McGraw-Hill to DRC in 2007. As in previous years, the retest opportunity at Grade 12 continued.

The first operational assessments for writing at Grades 5 and 8 took place in the 2005–06 school year, while the Grade 11 writing assessment continued in the same February testing window. For all three grade levels, the operational writing assessments featured mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis shift in writing modes assessed. See the *2006 PSSA Technical Report for Writing: Grades 5, 8, and 11* for further information about the new writing assessments. Since extensive field testing in February 2005 produced a pool of prompts for use over several years, no additional writing prompts were field tested in 2006. However, new multiple-choice items were field tested in the 2006 writing assessment.

Table P–3. Operational Assessment and Field Testing During the 2005–06 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test of DRC-written items (conducted by CTB/McGraw-Hill)	April 2006
4	Operational mathematics and reading with embedded field test	March 2006
5	Operational mathematics and reading with embedded field test	March 2006
5	Operational writing with embedded field test	February 2006
6	Operational mathematics and reading with embedded field test	March 2006
7	Operational mathematics and reading with embedded field test	March 2006
8	Operational mathematics and reading with embedded field test	March 2006
8	Operational writing with embedded field test	February 2006
11	Operational mathematics and reading with embedded field test	March 2006
11	Operational writing with embedded field test	February 2006
12	Retest opportunity for students who as Grade 11 students in the spring of 2005 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2005

ASSESSMENT ACTIVITIES OCCURRING IN THE 2006–07 SCHOOL YEAR

Table P–4 shows the assessment plan for the 2006–07 school year. Note that the mathematics and reading assessments ran consecutively in Grades 3–8 and Grade 11. For Grades 4, 6, and 7, it was the second year for operational assessments and the first year in which these grade levels were included in the adequate yearly progress (AYP) calculations. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. This was the first year in which DRC was responsible for the Grade 3 assessment, as the transition from CTB/McGraw-Hill was complete. As in previous years, the retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued in the same February testing window featuring the mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed, which were introduced in 2006. Since extensive field testing in February 2005 produced a pool of prompts for use over several years, no additional writing prompts needed to be field tested in 2007. However, new multiple-choice items were field tested in the 2007 writing assessment.

Following the spring operational assessments in writing, reading, and mathematics, a separate, standalone field test in science was administered for Grades 4, 8, and 11 with full implementation scheduled for 2008.

Table P–4. Operational Assessment and Field Testing During the 2006–07 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March 2007
4	Operational mathematics and reading with embedded field test	March 2007
4	Standalone field test in science	April/May 2007
5	Operational mathematics and reading with embedded field test	March 2007
5	Operational writing with embedded field test	February 2007
6	Operational mathematics and reading with embedded field test	March 2007
7	Operational mathematics and reading with embedded field test	March 2007
8	Operational mathematics and reading with embedded field test	March 2007
8	Operational writing with embedded field test	February 2007
8	Standalone field test in science	April/May 2007
11	Operational mathematics and reading with embedded field test	March 2007
11	Operational writing with embedded field test	February 2007
11	Standalone field test in science	April/May 2007
12	Retest opportunity for students who as Grade 11 students in the spring of 2006 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2006

ASSESSMENT ACTIVITIES OCCURRING IN THE 2007–08 SCHOOL YEAR

Table P–5 shows the assessment plan for the 2007–08 school year. Note that the mathematics and reading assessments ran consecutively in Grades 3–8 and Grade 11. For Grades 4, 6, and 7, it was the third year for operational assessments and the second year in which these grade levels were included in the AYP calculations. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. This was the second year in which DRC was responsible for the Grade 3 assessment. As in previous years, the retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued in the same February testing window featuring the mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed, which was introduced in 2006. Since extensive field testing in February 2005 produced a pool of prompts for use over several years, no additional writing prompts needed to be field tested in 2007. However, new multiple-choice items were field tested in the 2008 writing assessment.

Joining the spring operational assessments in writing, reading, and mathematics was science at Grades 4, 8, and 11. See the *2008 PSSA Technical Report for Science: Grades 4, 8, and 11* for further information about the new science assessments.

Table P–5. Operational Assessment and Field Testing During the 2007–08 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March/April 2008
4	Operational mathematics and reading with embedded field test	March/April 2008
4	Operational science with embedded field test	April/May 2008
5	Operational mathematics and reading with embedded field test	March/April 2008
5	Operational writing with embedded field test	February 2008
6	Operational mathematics and reading with embedded field test	March/April 2008
7	Operational mathematics and reading with embedded field test	March/April 2008
8	Operational mathematics and reading with embedded field test	March/April 2008
8	Operational writing with embedded field test	February 2008
8	Operational science with embedded field test	April/May 2008
11	Operational mathematics and reading with embedded field test	March/April 2008
11	Operational writing with embedded field test	February 2008
11	Operational science with embedded field test	April/May 2008
12	Retest opportunity for students who as Grade 11 students in the spring of 2007 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2007

ASSESSMENT ACTIVITIES OCCURRING IN THE 2008–09 SCHOOL YEAR

Table P–6 shows the assessment plan for the 2008–09 school year. The mathematics and reading assessments continued to be operational for Grades 3–8 and Grade 11. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. As in previous years, the fall retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued with a February testing window featuring mode-specific scoring guidelines; stimulus-based, multiple-choice items; and a grade-specific emphasis in writing modes assessed. An embedded field test of writing prompts was incorporated in the 2009 assessment along with a set of embedded field test multiple-choice items.

The second operational assessment in science took place in April/May. Similar to the other operational assessments, field testing for science was embedded as part of the operational assessments at each grade level.

Table P–6. Operational Assessment and Field Testing During the 2008–09 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March 2009
4	Operational mathematics and reading with embedded field test	March 2009
4	Operational science with embedded field test	April/May 2009
5	Operational mathematics and reading with embedded field test	March 2009
5	Operational writing with embedded field test	February 2009
6	Operational mathematics and reading with embedded field test	March 2009
7	Operational mathematics and reading with embedded field test	March 2009
8	Operational mathematics and reading with embedded field test	March 2009
8	Operational writing with embedded field test	February 2009
8	Operational science with embedded field test	April/May 2009
11	Operational mathematics and reading with embedded field test	March 2009
11	Operational writing with embedded field test	February 2009
11	Operational science with embedded field test	April/May 2009
12	Retest opportunity for students who as Grade 11 students in the spring of 2008 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2008

ASSESSMENT ACTIVITIES OCCURRING IN THE 2009–10 SCHOOL YEAR

Table P–7 shows the assessment plan for the 2009–10 school year. A notable change from previous years was that all assessments and make-ups were completed during the testing window from April through the first week of May.

The mathematics and reading assessments continued to be operational for Grades 3–8 and Grade 11. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. As in previous years, the fall retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued to feature mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed. An embedded field test of writing prompts was included in the 2010 assessment along with a set of embedded field test multiple-choice items.

The operational assessment for science at Grades 4, 8, and 11 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (all grades) as well as scenario-based multiple-choice (Grades 8 and 11) and open-ended (Grade 11 only) questions. Field testing was embedded as part of the operational assessments at each grade level.

Table P–7. Operational Assessment and Field Testing During the 2009–10 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	April/May 2010
4	Operational mathematics and reading with embedded field test	April/May 2010
4	Operational science with embedded field test	April/May 2010
5	Operational mathematics and reading with embedded field test	April/May 2010
5	Operational writing with embedded field test	April/May 2010
6	Operational mathematics and reading with embedded field test	April/May 2010
7	Operational mathematics and reading with embedded field test	April/May 2010
8	Operational mathematics and reading with embedded field test	April/May 2010
8	Operational writing with embedded field test	April/May 2010
8	Operational science with embedded field test	April/May 2010
11	Operational mathematics and reading with embedded field test	April/May 2010
11	Operational writing with embedded field test	April/May 2010
11	Operational science with embedded field test	April/May 2010
12	Retest opportunity for students who as Grade 11 students in the spring of 2009 failed to reach at least the Proficient level in mathematics, reading, science, or writing	October/ November 2009

ASSESSMENT ACTIVITIES OCCURRING IN THE 2010–11 SCHOOL YEAR

Table P–8 shows the assessment plan for the 2010–11 school year. A change from the previous year is an earlier testing window, beginning in mid-March for mathematics and reading, late-March to April for writing, and early April for science. A make-up period extended into mid-April for all assessments.

The mathematics and reading assessments continued to be operational for Grades 3–8 and Grade 11. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. As in previous years, the fall retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued to feature mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed. An embedded field test of writing prompts was included in the 2011 assessment along with a set of embedded field test multiple-choice items.

The operational assessment for science at Grades 4, 8, and 11 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (all grades) as well as scenario-based multiple-choice (Grades 8 and 11) and open-ended (Grade 11 only) questions. Field testing was embedded as part of the operational assessments at each grade level.

Table P–8. Operational Assessment and Field Testing During the 2010–11 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March/April 2011
4	Operational mathematics and reading with embedded field test	March/April 2011
4	Operational science with embedded field test	March/April 2011
5	Operational mathematics and reading with embedded field test	March/April 2011
5	Operational writing with embedded field test	March/April 2011
6	Operational mathematics and reading with embedded field test	March/April 2011
7	Operational mathematics and reading with embedded field test	March/April 2011
8	Operational mathematics and reading with embedded field test	March/April 2011
8	Operational writing with embedded field test	March/April 2011
8	Operational science with embedded field test	March/April 2011
11	Operational mathematics and reading with embedded field test	March/April 2011
11	Operational writing with embedded field test	March/April 2011
11	Operational science with embedded field test	March/April 2011
12	Retest opportunity for students who as Grade 11 students in the spring of 2010 failed to reach at least the Proficient level in mathematics, reading, science, or writing	October/ November 2010

ASSESSMENT ACTIVITIES OCCURRING IN THE 2011–12 SCHOOL YEAR

Table P–9 shows the assessment plan for the 2011–12 school year. The testing window for mathematics and reading began in mid-March, while writing and science began in mid to late April. The make-up period for mathematics and reading extended into late March, while writing and science extended into early May.

The mathematics and reading assessments continued to be operational for Grades 3–8 and Grade 11. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. As in previous years, the fall retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued to feature mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed. An embedded field test of writing prompts was included in the 2012 assessment along with a set of embedded field test multiple-choice items.

The operational assessment for science at Grades 4, 8, and 11 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (all grades) as well as scenario-based multiple-choice (Grades 8 and 11) and open-ended (Grade 11 only) questions. Field testing was embedded as part of the operational assessments at each grade level.

Table P–9. Operational Assessment and Field Testing During the 2011–12 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March 2012
4	Operational mathematics and reading with embedded field test	March 2012
4	Operational science with embedded field test	April 2012
5	Operational mathematics and reading with embedded field test	March 2012
5	Operational writing with embedded field test	April 2012
6	Operational mathematics and reading with embedded field test	March 2012
7	Operational mathematics and reading with embedded field test	March 2012
8	Operational mathematics and reading with embedded field test	March 2012
8	Operational writing with embedded field test	April 2012
8	Operational science with embedded field test	April 2012
11	Operational mathematics and reading with embedded field test	March 2012
11	Operational writing with embedded field test	April 2012
11	Operational science with embedded field test	April 2012
12	Retest opportunity for students who as Grade 11 students in the spring of 2011 failed to reach at least the Proficient level in mathematics, reading, science, or writing	October/ November 2011

TRANSITION TO THE PENNSYLVANIA CORE STANDARDS

The 2012–13 school year began the initial transition for the PSSA Mathematics, Reading, and Writing tests to align to the newly-developed Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards (PCS). The two-stage transition from the Legacy PSSA Mathematics, Reading, and Writing tests to the new PCS-based PSSA tests was proposed to occur during the operational 2013–14 and 2014–15 administrations, with Grades 3, 4, and 5 part of the first phase, and Grades 6, 7, and 8 part of the second phase. (The final decision was made for a single operational transition, to occur during the operational 2014–15 administration.)

As a part of the PCS transition, the Legacy PSSA Reading test and the Legacy PSSA Writing test were phased out and were replaced with an English Language Arts test aligned to the PCS. As part of this transition, there was a standalone field test for the Writing component of the English Language Arts test. This standalone field test included standalone multiple-choice items (as opposed to stimulus-based multiple-choice items on the Legacy Writing test) and writing prompts at each grade. In addition, at Grade 3 there were open-ended items on the standalone ELA Writing test. For Grades 3, 4, and 5, this standalone field test took place during a two-week testing window in early to mid-February 2013. A similar standalone field test took place in February 2014 for Grades 6, 7, and 8. The Reading component of the new PCS ELA test was embedded in the 2013 Reading field test in Grades 3 through 5; additional items for the Reading component of the new PCS ELA test were embedded in the 2014 Reading field test in Grades 3 through 5. The Reading component of the new PCS ELA test in Grades 6 through 8 was embedded in the 2014 Reading field test.

ASSESSMENT ACTIVITIES OCCURRING IN THE 2012–13 SCHOOL YEAR

Table P–10 shows the assessment plan for the 2012–13 school year. PDE modified the order of the testing windows for writing, reading and mathematics, and science. Writing took place earlier than reading and mathematics instead of at the same time as science. The testing window for writing began mid-March; mathematics and reading began early to mid-April, while science began mid to late April. The make-up period for writing extended into mid to late March, while mathematics, reading, and science extended into early May. These operational assessments were all offered in an online format in addition to the paper/pencil format used in previous assessments.

An additional change from previous years was the removal of Grade 11 from the Mathematics, Reading, Science, and Writing. As Grade 11 was no longer a part of the assessments, the fall retest opportunity at Grade 12 was no longer available. Operational tests continued to be available for Mathematics and Reading at Grades 3–8, Science at grades 4 and 8, and Writing at grades 5 and 8.

Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. The embedded field test items for Grades 3, 4, and 5 were aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards, while the embedded field test items for Grades 6, 7, and 8 continued to be aligned to the previous Assessment Anchor Content Standards.

The operational assessment for Science at Grades 4 and 8 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (all grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

The operational assessment for Writing at Grades 5 and 8 continued to feature mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed. An embedded field test of writing prompts along with a set of embedded field test multiple-choice items was included in the 2013 assessment at Grade 8. The operational assessment at Grade 5 included placeholder multiple-choice items for consistency in the length of the multiple-choice section of the assessment; however, students responded to only two writing prompts at Grade 5, as a field-test writing prompt was not needed due to the standalone field test at that grade.

Table P–10. Operational Assessment and Field Testing During the 2012–13 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test (field test aligned to the PCS)	April 2013
3	Standalone field test in ELA: writing (aligned to the PCS)	February 2013
4	Operational mathematics and reading with embedded field test (field test aligned to the PCS)	April 2013
4	Operational science with embedded field test	April 2013
4	Standalone field test in ELA: writing (aligned to the PCS)	February 2013
5	Operational mathematics and reading with embedded field test (field test aligned to the PCS)	April 2013
5	Operational writing	March 2013
5	Standalone field test in ELA: writing (aligned to the PCS)	February 2013
6	Operational mathematics and reading with embedded field test	April 2013
7	Operational mathematics and reading with embedded field test	April 2013
8	Operational mathematics and reading with embedded field test	April 2013
8	Operational writing with embedded field test	March 2013
8	Operational science with embedded field test	April 2013

ASSESSMENT ACTIVITIES OCCURRING IN THE 2013–14 SCHOOL YEAR

Table P–11 shows the assessment plan for the 2013–14 school year. The 2013–14 school year continued the transition for the PSSA Mathematics, Reading, and Writing tests to align to the newly-developed Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards (PCS), as field-test items were aligned to the PCS-aligned Assessment Anchors and Eligible Content. The operational assessments in Mathematics, Reading, and Writing were comprised of items that align to both the PCS and the existing Assessment Anchors and Eligible Content. Reporting in 2013–14 continued to use the previous content structure. The transition from the Legacy PSSA Mathematics, Reading, and Writing tests to the new PCS-based PSSA tests was planned to occur during the operational 2014–15 administration.

As a part of the PCS transition, the Legacy PSSA Reading test and the Legacy PSSA Writing test were phased out and were replaced with an English Language Arts test aligned to the PCS. As part of this transition, there was a standalone field test at Grades 6, 7, and 8 for the Writing component of the English Language Arts test. This standalone field test included standalone multiple-choice items (as opposed to stimulus-based multiple-choice items on the Legacy Writing test) and writing prompts at Grades 6, 7, and 8. This standalone field test took place during a two-week testing window in early to mid-February. The Reading component of the new PCS ELA test was embedded in the 2014 Reading field test for Grades 6, 7, and 8 and in the 2013 and 2014 Reading field test for Grades 3, 4, and 5.

Writing took place after reading and mathematics but before science. The testing window for mathematics and reading began mid-March; writing began late March to early April; and science began late April. The make-up period for mathematics and reading extended into early April, while the make-up period for writing extended into early to mid-April and science extended into early May. These operational assessments continued to be offered in an online format in addition to the paper/pencil format used in previous assessments.

Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. The embedded field test items were aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (all grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

The operational assessment for writing at Grades 5 and 8 continued to feature mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed. Students responded to only two writing prompts, as a field-test writing prompt was not needed due to the upcoming transition to the ELA assessments.

Table P–11. Operational Assessment and Field Testing During the 2013–14 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March 2014
4	Operational mathematics and reading with embedded field test	March 2014
4	Operational science with embedded field test	April-May 2014
5	Operational mathematics and reading with embedded field test	March 2014
5	Operational writing	March-April 2014
6	Operational mathematics and reading with embedded field test	March 2014
6	Standalone field test in ELA: writing	February 2014
7	Operational mathematics and reading with embedded field test	March 2014
7	Standalone field test in ELA: writing	February 2014
8	Operational mathematics and reading with embedded field test	March 2014
8	Operational writing with embedded field test	March-April 2014
8	Operational science with embedded field test	April-May 2014
8	Standalone field test in ELA: writing	February 2014

ASSESSMENT ACTIVITIES OCCURRING IN THE 2014–15 SCHOOL YEAR

Table P–12 shows the assessment plan for the 2014–15 school year. The 2014–15 school year completes the transition for the PSSA Mathematics, Reading, and Writing tests to align to the newly-developed Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards (PCS), as both operational and field-test items were aligned only to the PCS-aligned Assessment Anchors and Eligible Content. Reporting in 2014–15 also transitioned to the new content structure. The transition from the Legacy PSSA Mathematics, Reading, and Writing tests to the new PCS-based PSSA Mathematics and ELA tests occurred during the operational 2014–15 administration.

The testing window for English Language Arts began in mid-April followed by the testing windows for Mathematics in mid to late April and then Science in late April to early May. These operational assessments continued to be offered in an online format in addition to the paper/pencil format used in previous assessments. The online assessment became available for students to take on iPads and Chromebooks beginning with the 2015 administration.

Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. The embedded field test items continued to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (both grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

Table P–12. Operational Assessment and Field Testing During the 2014–15 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	April 2015
3	Operational ELA with embedded field test	April 2015
4	Operational mathematics with embedded field test	April 2015
4	Operational ELA with embedded field test	April 2015
4	Operational science with embedded field test	April-May 2015
5	Operational mathematics embedded field test	April 2015
5	Operational ELA with embedded field test	April 2015
6	Operational mathematics with embedded field test	April 2015
6	Operational ELA with embedded field test	April 2015
7	Operational mathematics with embedded field test	April 2015
7	Operational ELA with embedded field test	April 2015
8	Operational mathematics with embedded field test	April 2015
8	Operational ELA with embedded field test	April 2015
8	Operational science with embedded field test	April-May 2015

ASSESSMENT ACTIVITIES OCCURRING IN THE 2015–16 SCHOOL YEAR

Table P–13 shows the assessment plan for the 2015–16 school year. The PSSA tests administered in the 2015–16 school year will continue to be aligned to the Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The testing window for English Language Arts began early to mid-April followed by the testing windows for Mathematics in mid-April and then Science in late April. Makeup assessments were available through early May. These operational assessments continued to be offered in an online format in addition to the paper/pencil

format used in previous assessments. The online assessments were available for students to take on iPads and Chromebooks.

Field testing for mathematics and English language arts continued to be embedded as part of the operational assessments at each grade level. The embedded field test items continued to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (both grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

Table P–13. Operational Assessment and Field Testing During the 2015–16 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	April 2016
3	Operational ELA with embedded field test	April 2016
4	Operational mathematics with embedded field test	April 2016
4	Operational ELA with embedded field test	April 2016
4	Operational science with embedded field test	April 2016
5	Operational mathematics embedded field test	April 2016
5	Operational ELA with embedded field test	April 2016
6	Operational mathematics with embedded field test	April 2016
6	Operational ELA with embedded field test	April 2016
7	Operational mathematics with embedded field test	April 2016
7	Operational ELA with embedded field test	April 2016
8	Operational mathematics with embedded field test	April 2016
8	Operational ELA with embedded field test	April 2016
8	Operational science with embedded field test	April 2016

ASSESSMENT ACTIVITIES OCCURRING IN THE 2016–17 SCHOOL YEAR

Table P–14 shows the assessment plan for the 2016–17 school year. The PSSA tests administered in the 2016–17 school year will continue to be aligned to the Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The testing window for English Language Arts began early April followed by the testing windows for Mathematics in mid-April and then Science in early May. Makeup assessments were available through early to mid-May. These operational assessments continued to be offered in an online format in addition to the paper/pencil format used in previous assessments. The online assessments were available for students to take on PCs, iPads, and Chromebooks.

Field testing for mathematics and English language arts continued to be embedded as part of the operational assessments at each grade level. The embedded field test items continued to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (both grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

Table P–14. Operational Assessment and Field Testing During the 2016–17 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	April 2017
3	Operational ELA with embedded field test	April 2017
4	Operational mathematics with embedded field test	April 2017
4	Operational ELA with embedded field test	April 2017
4	Operational science with embedded field test	May 2017
5	Operational mathematics embedded field test	April 2017
5	Operational ELA with embedded field test	April 2017
6	Operational mathematics with embedded field test	April 2017
6	Operational ELA with embedded field test	April 2017
7	Operational mathematics with embedded field test	April 2017
7	Operational ELA with embedded field test	April 2017
8	Operational mathematics with embedded field test	April 2017
8	Operational ELA with embedded field test	April 2017
8	Operational science with embedded field test	May 2017

ASSESSMENT ACTIVITIES OCCURRING IN THE 2017–18 SCHOOL YEAR

Table P–15 shows the assessment plan for the 2017–18 school year. The PSSA tests administered in the 2017–18 school year continued to aligned to the Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The testing window for English Language Arts was in early to mid-April followed by the testing windows for Mathematics in mid-April and then Science in late-April into early May. The makeup assessments were available through early May. These operational assessments continued to be offered in an online format in addition to the paper/pencil format.

Field testing for mathematics and English language arts will continue to be embedded as part of the operational assessments at each grade level. The embedded field test items continued to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 continued to include multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (both grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

Table P–15. Operational Assessment and Field Testing During the 2017–18 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	April 2018
3	Operational ELA with embedded field test	April 2018
4	Operational mathematics with embedded field test	April 2018
4	Operational ELA with embedded field test	April 2018
4	Operational science with embedded field test	April 2018
5	Operational mathematics embedded field test	April 2018
5	Operational ELA with embedded field test	April 2018
6	Operational mathematics with embedded field test	April 2018
6	Operational ELA with embedded field test	April 2018
7	Operational mathematics with embedded field test	April 2018
7	Operational ELA with embedded field test	April 2018
8	Operational mathematics with embedded field test	April 2018
8	Operational ELA with embedded field test	April 2018
8	Operational science with embedded field test	April 2018

ASSESSMENT ACTIVITIES OCCURRING IN THE 2018–19 SCHOOL YEAR

Table P–16 shows the assessment plan for the 2018–19 school year. The PSSA tests administered in the 2018–19 school year continued to be aligned to the Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The testing window for English Language Arts was in mid-April followed by the testing windows for Mathematics and science in late-April into early May. The makeup assessments were available through late-April into early May. These operational assessments continued to be offered in an online format in addition to the paper/pencil format.

Field testing for mathematics and English language arts continued to be embedded as part of the operational assessments at each grade level. The embedded field test items continued to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 continued to include multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (both grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

Table P–16. Operational Assessment and Field Testing During the 2018–19 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	April 2019
3	Operational ELA with embedded field test	April 2019
4	Operational mathematics with embedded field test	April 2019
4	Operational ELA with embedded field test	April 2019
4	Operational science with embedded field test	April 2019
5	Operational mathematics embedded field test	April 2019
5	Operational ELA with embedded field test	April 2019
6	Operational mathematics with embedded field test	April 2019
6	Operational ELA with embedded field test	April 2019
7	Operational mathematics with embedded field test	April 2019
7	Operational ELA with embedded field test	April 2019
8	Operational mathematics with embedded field test	April 2019
8	Operational ELA with embedded field test	April 2019
8	Operational science with embedded field test	April 2019

ASSESSMENT ACTIVITIES OCCURRING IN THE 2019–20 SCHOOL YEAR

The spring 2020 PSSA was cancelled in March 2020 due to the Covid-19 pandemic. No test materials were delivered to the Local Education Agencies (LEAs) for test administration; therefore, no tests were administered and there are no results to analyze for the 2020 PSSA. Additional analyses were conducted following the spring 2021 PSSA administration to evaluate the impact of school closures and absence of a test administration in 2020. The results from these analyses are included in Appendix V of the 2021 PSSA Technical Report.

Because the PSSA test materials were not delivered to the LEAs nor administered to students, the Pennsylvania Department of Education decided to not release form-level or item-level information in order to save items and/or forms for future use. Consequently, the sections of the technical report that identify specific information related to test construction were delayed until the completion of the 2021 PSSA.

Table P–17. Operational Assessment and Field Testing During the 2019–20 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	Cancelled
3	Operational ELA with embedded field test	Cancelled
4	Operational mathematics with embedded field test	Cancelled
4	Operational ELA with embedded field test	Cancelled
4	Operational science with embedded field test	Cancelled
5	Operational mathematics embedded field test	Cancelled
5	Operational ELA with embedded field test	Cancelled
6	Operational mathematics with embedded field test	Cancelled
6	Operational ELA with embedded field test	Cancelled
7	Operational mathematics with embedded field test	Cancelled
7	Operational ELA with embedded field test	Cancelled
8	Operational mathematics with embedded field test	Cancelled
8	Operational ELA with embedded field test	Cancelled
8	Operational science with embedded field test	Cancelled

ASSESSMENT ACTIVITIES OCCURRING IN THE 2020–2021 SCHOOL YEAR

Table P–18 shows the assessment plan for the 2020–021 school year. The PSSA tests administered in the 2020–21 school year continued to be aligned to the Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The testing window for English Language Arts was in mid-April followed by the testing windows for Mathematics and science in late-April into late September. The makeup assessments were available through late-April into late September. These operational assessments continued to be offered in an online format in addition to the paper/pencil format.

Field testing for mathematics and English language arts continued to be embedded as part of the operational assessments at each grade level. The embedded field test items continued to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 continued to include multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (both grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

Table P–18. Operational Assessment and Field Testing During the 2020–21 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	April–September 2021
3	Operational ELA with embedded field test	April–September 2021
4	Operational mathematics with embedded field test	April–September 2021
4	Operational ELA with embedded field test	April–September 2021
4	Operational science with embedded field test	April–September 2021
5	Operational mathematics embedded field test	April–September 2021
5	Operational ELA with embedded field test	April–September 2021
6	Operational mathematics with embedded field test	April–September 2021
6	Operational ELA with embedded field test	April–September 2021
7	Operational mathematics with embedded field test	April–September 2021
7	Operational ELA with embedded field test	April–September 2021
8	Operational mathematics with embedded field test	April–September 2021
8	Operational ELA with embedded field test	April–September 2021
8	Operational science with embedded field test	April–September 2021

ASSESSMENT ACTIVITIES OCCURRING IN THE 2021–22 SCHOOL YEAR

Table P–19 shows the assessment plan for the 2021–22 school year. The PSSA tests administered in the 2021–22 school year continued to be aligned to the Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The testing window for English Language Arts was in mid-April followed by the testing windows for Mathematics and science in late-April into early May. The makeup assessments was available through early late-April into early May. These operational assessments were offered in an online format in addition to the paper/pencil format.

Field testing for mathematics and English language arts continued to be embedded as part of the operational assessments at each grade level. The embedded field test items continued to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 continued to include multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (both grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

Table P–19. Operational Assessment and Field Testing During the 2021–22 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	May 2022
3	Operational ELA with embedded field test	April 2022
4	Operational mathematics with embedded field test	May 2022
4	Operational ELA with embedded field test	April 2022
4	Operational science with embedded field test	May 2022
5	Operational mathematics embedded field test	May 2022
5	Operational ELA with embedded field test	April 2022
6	Operational mathematics with embedded field test	May 2022
6	Operational ELA with embedded field test	April 2022
7	Operational mathematics with embedded field test	May 2022
7	Operational ELA with embedded field test	April 2022
8	Operational mathematics with embedded field test	May 2022
8	Operational ELA with embedded field test	April 2022
8	Operational science with embedded field test	May 2022

ASSESSMENT ACTIVITIES OCCURRING IN THE 2022–23 SCHOOL YEAR

Table P–20 shows the assessment plan for the 2022–23 school year. The PSSA tests administered in the 2022–23 school year continued to be aligned to the Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The testing window for English Language Arts was in mid-April followed by the testing windows for Mathematics and science in late-April into early May. The makeup assessments were available through early late-April into early May. These operational assessments were offered in an online format in addition to the paper/pencil format.

Field testing for mathematics and English language arts continued to be embedded as part of the operational assessments at each grade level. The embedded field test items continued to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 continued to include multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (both grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

Table P–20. Operational Assessment and Field Testing During the 2022–23 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	May 2023
3	Operational ELA with embedded field test	April 2023
4	Operational mathematics with embedded field test	May 2023
4	Operational ELA with embedded field test	April 2023
4	Operational science with embedded field test	May 2023
5	Operational mathematics embedded field test	May 2023
5	Operational ELA with embedded field test	April 2023
6	Operational mathematics with embedded field test	May 2023
6	Operational ELA with embedded field test	April 2023
7	Operational mathematics with embedded field test	May 2023
7	Operational ELA with embedded field test	April 2023
8	Operational mathematics with embedded field test	May 2023
8	Operational ELA with embedded field test	April 2023
8	Operational science with embedded field test	May 2023

ASSESSMENT ACTIVITIES OCCURRING IN THE 2023–24 SCHOOL YEAR

Table P–21 shows the assessment plan for the 2023–24 school year. The PSSA tests administered in the 2023–24 school year continued to be aligned to the Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The testing window for English Language Arts was in mid-April followed by the testing windows for Mathematics and science in late-April into early May. The makeup assessments was available through early late-April into early May. These operational assessments continued to be offered in an online format in addition to the paper/pencil format.

Field testing for mathematics and English language arts continued to be embedded as part of the operational assessments at each grade level. The embedded field test items continued to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 continued to include multiple-choice and open-ended questions. The operational test items continued to be aligned to the Pennsylvania Assessment Anchors and Eligible Content. Students responded to standalone multiple-choice and open-ended questions (both grades) as well as scenario-based multiple-choice questions (Grade 8 only). Field testing was embedded as part of the operational assessments at each grade level. The field-test items on the 2023–24 science assessments were aligned to the recently adopted Pennsylvania Integrated Standards for Science, Technology & Engineering, and Environmental Literacy and Sustainability (STEELS) Standards.

Table P–21. Operational Assessment and Field Testing During the 2023–24 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	May 2024
3	Operational ELA with embedded field test	April 2024
4	Operational mathematics with embedded field test	May 2024
4	Operational ELA with embedded field test	April 2024
4	Operational science with embedded field test	May 2024
5	Operational mathematics embedded field test	May 2024
5	Operational ELA with embedded field test	April 2024
6	Operational mathematics with embedded field test	May 2024
6	Operational ELA with embedded field test	April 2024
7	Operational mathematics with embedded field test	May 2024
7	Operational ELA with embedded field test	April 2024
8	Operational mathematics with embedded field test	May 2024
8	Operational ELA with embedded field test	April 2024
8	Operational science with embedded field test	May 2024

ASSESSMENT ACTIVITIES PLANNED FOR THE 2024–25 SCHOOL YEAR

Table P–22 shows the assessment plan for the 2024–25 school year. The PSSA tests administered in the 2024–25 school year will continue to be aligned to the Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The testing window for English Language Arts will be in mid-April followed by the testing windows for Mathematics and science in late-April into early May. The makeup assessments will be available through late-April into early May. These operational assessments will continue to be offered in an online format in addition to the paper/pencil format.

Field testing for mathematics and English language arts will continue to be embedded as part of the operational assessments at each grade level. The embedded field test items will continue to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

Significant changes will take place in the 2024–25 science assessment. The 2024–25 science forms will be a field-test only assessment. The 4th grade assessment will be replaced by a 5th grade assessment. Students will respond to standalone multiple-choice, technology-enhanced, and open-ended questions (both grades) as well as scenario-based multiple-choice questions. The field-test items on the 2024–25 science assessments will be aligned to the recently adopted Pennsylvania Integrated Standards for Science, Technology & Engineering, and Environmental Literacy and Sustainability (STEELS) Standards.

Table P–22. Operational Assessment and Field Testing During the 2024–25 School Year

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	May 2025
3	Operational ELA with embedded field test	April 2025
4	Operational mathematics with embedded field test	May 2025
4	Operational ELA with embedded field test	April 2025
5	Field Test science	May 2025
5	Operational mathematics embedded field test	May 2025
5	Operational ELA with embedded field test	April 2025
6	Operational mathematics with embedded field test	May 2025
6	Operational ELA with embedded field test	April 2025
7	Operational mathematics with embedded field test	May 2025
7	Operational ELA with embedded field test	April 2025
8	Operational mathematics with embedded field test	May 2025
8	Operational ELA with embedded field test	April 2025
8	Field Test science	May 2025

CHAPTER ONE: BACKGROUND, PURPOSE, AND INTENDED USES OF THE PENNSYLVANIA SYSTEM OF SCHOOL ASSESSMENT (PSSA)

This brief overview of the Pennsylvania System of School Assessment (PSSA) summarizes the history of the current program's development process, the program's intent and purpose, recent changes to the program, and the student population that participates in the assessments. Pennsylvania's involvement in state-wide assessment actually began in the 1969–70 school year with a purely school-based assessment known as *Educational Quality Assessment* (EQA), which continued through the 1987–88 school year. A state mandated student competency testing program called *Testing for Essential Learning and Literacy Skills* (TELLS) also operated from the school years of 1984–85 through 1990–91.

THE PENNSYLVANIA SYSTEM OF SCHOOL ASSESSMENT

The Pennsylvania System of School Assessment program was instituted in 1992 as a school evaluation model with reporting at the school level only. Test administration took place in February/March, and school district participation was every third year based on the strategic planning cycle. Mathematics and reading were assessed at Grades 5, 8, and 11; districts could choose to participate in the writing assessment at Grades 6 and 9. The State Board of Education's revisions to Chapter 5 in November 1994 brought major changes to the PSSA, beginning with the spring 1995 assessment. These changes included the following:

- All districts were required to participate in the mathematics and reading assessment each year.
- Student-level reports were generated in addition to school reports.
- The Grades 6 and 9 writing assessments became mandatory on a three-year cycle corresponding with the district's strategic planning cycle.

Yearly administration of the PSSA in 1996, 1997, and 1998 continued at the assessed grades for mathematics and reading, utilizing essentially the same test structure, reporting practices, and testing window. Writing assessment continued on the established mandatory cycle; however, an increasing number of districts chose to participate every year on a voluntary basis.

PENNSYLVANIA ACADEMIC STANDARDS AND THE PSSA

A major structural change took place in test content with the State Board of Education's adoption of the Pennsylvania Academic Standards for Reading, Writing, Speaking and Listening, and Mathematics in January 1999 (Pennsylvania State Board of Education, 1999). These new, more rigorous standards aimed to better prepare students for the 21st century work force. The Academic Standards, which are part of *Chapter 4 Regulations on Academic Standards and Assessment*, detailed what students should know (knowledge) and be able to do (skills) at various grade levels. Subsequently, the State Board approved a set of criteria defining Advanced, Proficient, Basic, and Below Basic levels of performance. Mathematics and reading performance level results were reported at both the student and school levels for the 2000 PSSA. At that point, the PSSA became a standards-based, criterion-referenced assessment measuring student attainment of the Academic Standards while simultaneously determining the extent to which school programs enabled students to achieve proficiency of the Academic Standards. The regulations also stipulated that appropriate results be broadly disseminated to an array of audiences including students, parents, educators, citizens, and state policymakers, including the State Senate, the General Assembly, and the State Board. School reporting was to include the aggregate performance of all students and for relevant subgroups, such as those students with an Individualized Education Plan (IEP). Finally, the data was intended to inform educators regarding school program strengths and weaknesses in order to guide the improvement of curricula and instructional strategies. The data was also intended to be used in the development of strategic plans.

The mathematics and reading assessments from 2001 through 2004 underwent various content enhancements to improve alignment to the Academic Standards. For example, the reading assessment transitioned to utilizing more passages of shorter length and fewer items to improve the range of topics to which students responded. Various reporting modifications were introduced to more effectively communicate results.

ASSESSMENT ANCHOR CONTENT STANDARDS, CONTENT STRUCTURE, AND NEW GRADE LEVELS FOR MATHEMATICS AND READING

Assessment in 2005 was marked by major structural changes to the PSSA. Assessment Anchor Content Standards (Assessment Anchors) developed during the previous school year to clarify content structure and improve articulation between assessment and instruction were implemented in terms of test design and reporting. At the same time, field testing of mathematics and reading occurred at Grades 4, 6, and 7. As specified by PL 107–110, the *No Child Left Behind Act of 2001* (NCLB), states, school districts, and schools must achieve a minimum level of improvement each year, known as adequate yearly progress, or AYP. Accordingly, the third year of calculations for AYP were conducted and reported for Grades 5, 8, and 11.

The 2006 operational mathematics and reading assessment incorporated Grades 4, 6, and 7 for the first time. The assessed grade levels for 2006 included Grades 3–8 and 11. The fourth year of calculations for AYP were conducted and reported for Grades 5, 8, and 11 and, for the first time, Grade 3.

In 2007 the operational mathematics and reading assessment continued in Grades 3–8 and 11. AYP calculations for Grades 4, 6, and 7 took place in 2007 when they were assessed for the second time.

The operational mathematics and reading assessments of 2008, 2009, 2010, 2011, and 2012 continued in Grades 3–8 and 11, utilizing the same content structure. AYP calculations continued for all grades. The operational mathematics and reading assessments continued for Grades 3–8 in 2013 utilizing the same content structure.

TRANSITION TO PENNSYLVANIA CORE STANDARDS-ALIGNED ASSESSMENTS IN ENGLISH LANGUAGE ARTS AND MATHEMATICS

As a part of the transition to align to the Pennsylvania Core Standards, the operational mathematics and reading assessments for Grades 3–8 in 2014 aligned to both the previous Assessment Anchors (those aligned to the Pennsylvania Academic Standards) and the newly developed Assessment Anchors aligned to the Pennsylvania Core Standards. The operational assessments of 2015 in Grades 3–8 marked the completion of the transition to alignment with the Pennsylvania Core Standards in mathematics and English language arts. The 2021 PSSA had nine field-test forms per grade in Grades 3–8, each with core items as well as placeholder items to ensure consistency in the length of the assessment in future years when equating block items are again included in the test design. More information about the operational layout for mathematics and English language arts can be found in Chapter Three.

Preliminary performance level descriptors were developed for mathematics and English language arts in the spring of 2012. These descriptions of the expectations of students at each performance level (Basic, Proficient, and Advanced) were used to guide development of items aligned to the PCS-aligned Assessment Anchors and Eligible Content that were field tested in 2013 (Grades 3, 4, and 5) and in 2014 (Grades 3–8). These performance level descriptors were validated by committees of Pennsylvania educators in February 2015 prior to standard setting in June 2015.

More information regarding the mathematics and reading tests may be found in Chapter Two and in the following Pennsylvania Department of Education publications available on the PDE website: *PSSA Assessment Handbook*, *PSSA English Language Arts Preliminary Item and Scoring Sampler* (one per assessed grade level), and *PSSA Mathematics Preliminary Item and Scoring Sampler* (one per assessed grade level). These handbooks can be accessed by going to www.education.pa.gov.

THE PENNSYLVANIA SCIENCE ASSESSMENT

In accordance with the NCLB requirement to implement an operational science assessment in 2008, a major test development effort in science took place during 2006, followed by a large-scale, standalone field test in April/May of 2007. A full implementation of an operational science assessment at Grades 4, 8, and 11 first occurred in April–May 2008. The 2009 PSSA operational science assessment continued with the same content structure and testing window as in 2008.

Several historical milestones were significant to the development of a science test in Pennsylvania. These include the following:

- The adoption of Act 16 or Pennsylvania Senate Bill 652 in 2000, which redefined the PSSA "as a test developed and implemented by the Department of Education to determine only academic achievement relating directly to objective Academic Standards in the areas of reading, mathematics, and science." (See the *Science Assessment Handbook*, PDE, November 2006).
- Pennsylvania State Board of Education adoption of the *Science and Technology Standards* on July 12, 2001, and the *Environment and Ecology Standards* on January 5, 2002.

Aligned to the *Pennsylvania Science Assessment Anchor Content Standards* and Eligible Content, the science test is designed to measure and report results in four major categories:

- The Nature of Science
- Biological Sciences
- Physical Sciences
- Earth and Space Sciences

Students use their content knowledge and science process skills to answer a set of multiple-choice items and open-ended questions that are standalone or related to a scenario. A science scenario consists of a description of a class project, an experiment, or other research and typically contains text, graphs, charts, and/or tables. Science test questions at Grade 4 consist of standalone multiple-choice and 0–2-point short-answer open-ended items. At Grade 8, multiple-choice questions consist of both standalone and scenario-based items. All open-ended items at Grade 8 are standalone 0–2-point questions. More information may be found in Chapter Two and in the following Pennsylvania Department of Education publications available on the PDE website: *PSSA Assessment Handbook* and *PSSA Science Item and Scoring Sampler Supplement* (one per assessed grade level). These handbooks can be accessed by going to www.education.pa.gov. The establishment of performance levels for science, utilizing the Bookmark method, took place during the summer of 2008. For additional details about sciences standard setting event, refer to the PSSA science performance level setting technical report in 2008.

On July 16, 2022, Pennsylvania Bulletin published new standards. The newly adopted Pennsylvania Integrated Standards for Science, Technology & Engineering, and Environmental Literacy and Sustainability, and Pennsylvania Technology and Engineering Standards were developed jointly to ensure consistency, coherence and a cohesive K–12 integrated approach to science education in the Commonwealth. Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic (STEELS) Standards guide the study of the natural and human-made world through inquiry, problem solving, critical thinking, and authentic exploration. This document displays the standards within strands as they progress across a K–12 sequence. The integration of these disciplines in the standards highlights the interconnectedness of scientific, technological, and engineering focused study; the integral relationship between humans and the environment; and the importance of integrating the teaching and learning of science, technology, and engineering.

PURPOSE AND INTENDED USES OF THE PSSA

The preceding discussion provides some important background and rationale for the development of the PSSA. Although the topic of test validity is covered in detail in Chapter Nineteen of this report, some introductory remarks to frame how a validity argument is linked to test purpose and use is appropriate here. Validity is often defined as, the degree to which theory and evidence support the intended purpose and use of test scores. As such, the beginning of any validation process is to clearly articulate test purpose and intended uses. The purpose of the PSSA is to measure how well students acquire the knowledge and skills described in the *Pennsylvania Assessment Anchor Content Standards* (Assessment Anchors) as defined by the Eligible Content for mathematics, ELA, and Science. The intended uses of the PSSA are to:

1. Provide information for use in school and district accountability systems
2. Improve curricular and instructional practices in order to help students reach proficiency in the Pennsylvania Core Standards (ELA and Mathematics) or the Pennsylvania Academic Standards (Science)

It follows, then, that a validity argument must be developed to support claims that PSSA test scores are appropriate for these uses. The *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 2014) links the concept of validity, test purpose, and test use to this need for evidence that test scores are appropriate for their intended purpose and uses. Briefly, a validity argument is characterized as an accumulation of five sources, or types, of evidence that test scores are appropriate for their intended use, including evidence related to test content, its internal structure and relation to other variables, examinee response processes, and testing consequences. Complete definitions of these sources, and corresponding evidence that PSSA scores may be interpreted as intended is provided in Chapter Nineteen.

CHAPTER TWO: OVERVIEW OF THE PSSA FRAMEWORK

PENNSYLVANIA CORE STANDARDS, PENNSYLVANIA ACADEMIC STANDARDS, ASSESSMENT ANCHOR CONTENT STANDARDS, AND ELIGIBLE CONTENT

PSSA ENGLISH LANGUAGE ARTS, MATHEMATICS, AND SCIENCE

The PSSA Assessment Anchor Content Standards and Eligible Content are based on the Pennsylvania Core Standards in English language arts and mathematics and the Pennsylvania Academic Standards in science. Although the Academic Standards indicated what students should know and be able to do, educator concerns regarding the number and breadth of Academic Standards led to an initiative by the Pennsylvania Department of Education (PDE) to develop Assessment Anchor Content Standards (Assessment Anchors) to indicate which parts of the Academic Standards (Instructional Standards) would be assessed on the PSSA. Based on recommendations from Pennsylvania educators, the Assessment Anchors were designed as a tool to improve the articulation of curricular, instructional, and assessment practices.

With Pennsylvania's decision to adopt the Pennsylvania Core Standards based on the Common Core State Standards, committees of Pennsylvania educators met in October 2011 to write, review, and approve the Assessment Anchors and Eligible Content statements. To provide initial focus, each content and grade span committee was presented with materials specific to the content and grade span in question, including a basic blueprint structure, the Pennsylvania Academic Standards, the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Academic Standards, the Common Core State Standards, and draft Eligible Content statements. Committees then completed an iterative process of reviewing and revising the draft Eligible Content statements followed by discussions across grade-span committees to ensure vertical articulation across the grades. The results from the committee work were evaluated by national, state, and local subject experts, and following revisions, they were ultimately validated by another committee of Pennsylvania educators. Following committee approval, the Pennsylvania Core Standards-aligned Assessment Anchors and Eligible Content for English Language Arts and Mathematics were approved by the State Board of Education in September 2013.

The Assessment Anchors clarify what is expected across each grade span and focus the content of the standards into what is assessable on a large-scale test. The Assessment Anchor documents also serve to communicate Eligible Content, also called assessment limits, or the range of knowledge and skills from which the PSSA would be designed.

The Assessment Anchor's coding is read like an outline. The coding includes the content, grade level, Reporting Category, Assessment Anchor, descriptor (Sub-Assessment Anchor), and Eligible Content. Thus, S.4.A.1.3.1 would be Science, Grade 4, Reporting Category A, Assessment Anchor 1, descriptor (Sub-Assessment Anchor) 3, and Eligible Content 1.

Each of the Assessment Anchors has one or more descriptors (Sub-Assessment Anchors) and Eligible Content varying to reflect grade-level appropriateness. The Assessment Anchors form the basis of the test design. In turn, this hierarchy is the basis for organizing the total content scores (based on the core [common] sections).

Achieve, Inc., Washington, D.C., conducted a preliminary review of the science Assessment Anchors in 2003 to evaluate the alignment with the Academic Standards and produced a follow-up report on the anchors in 2005.

The complete set of Assessment Anchors and Eligible Content aligned to the Pennsylvania Academic Standards can be referenced at PDE's website: www.education.pa.gov.

OVERVIEW OF THE 2024 PSSA

MATHEMATICS ASSESSMENT MEASURES

The Assessment Anchors are organized into four classifications, as listed below.

- A = Numbers and Operations
- B = Algebraic Concepts
- C = Geometry
- D = Data Analysis and Probability

These four classifications are used throughout the grade levels. In addition to these classifications, there are five Reporting Categories for each grade level. The first letter of each Reporting Category represents the classification, and the second letter represents the Domain as stated in the Pennsylvania Core Standards for Mathematics. These Reporting Categories are listed below.

- A = Numbers and Operations
    - A-T = Numbers and Operations in Base Ten (grades 3–5)
    - A-F = Numbers and Operations—Fractions (grades 3–5)
    - A-N = The Number System (grades 6–8)
    - A-R = Ratios and Proportional Relationships (grades 6, 7)
- B = Algebraic Concepts
    - B-O = Operations and Algebraic Thinking (grades 3–5)
    - B-E = Expressions and Equations (grades 6–8)
    - B-F = Functions (grade 8)
- C = Geometry
    - C-G = Geometry (grades 3–8)
- D = Data Analysis and Probability
    - D-M = Measurement and Data (grades 3–5)
    - D-S = Statistics and Probability (grades 6–8)

The PSSA mathematics assessment employs two types of test items: multiple-choice and open-ended. These item types assess different levels of knowledge and provide different kinds of information about mathematics achievement. Psychometrically, multiple-choice items are very useful and efficient tools for collecting information about a student's academic achievement. Open-ended performance tasks generally generate fewer scoreable points than multiple-choice items in the same amount of testing time; however, they provide tasks that are more realistic and are better at sampling higher-level thinking skills. Furthermore, well-constructed scoring guides have made it possible to include open-ended tasks in large-scale assessments such as the PSSA. Trained scorers can apply the scoring guides to efficiently score large numbers of student papers in a highly reliable way. The design of the PSSA attempts to achieve a reasonable balance between the two item types.

Furthermore, the Standards for Mathematical Practice is included in the development and review process of each item. Some items may align to none of the practices while others may align to multiple practices. The Standards for Mathematical Practice originated in the Common Core State Standards for Mathematics and were adopted by Pennsylvania as part of the Academic Standards for Mathematics.

MATHEMATICS MULTIPLE-CHOICE ITEMS

The majority of the mathematics items included on the PSSA are multiple-choice (selected-response) items. This item type is especially efficient for measuring a broad range of content. In the PSSA mathematics assessment, each multiple-choice item has four response options, only one of which is correct. The student is awarded one point for choosing the correct response. Distractors typically represent incorrect concepts, incorrect logic, incorrect application of an algorithm, or computational errors.

Multiple-choice items are used to assess a variety of skill levels, from short-term recall of facts to problem solving. PSSA items involving application emphasize the requirement to carry out some mathematical process to find an answer, rather than simply recalling information from memory.

OPEN-ENDED TASKS FOR MATHEMATICS

Open-ended, or constructed-response, tasks require students to read a problem description and to develop an appropriate solution. The open-ended items are designed to take about ten minutes per item. Most of the open-ended items have several components to the overall task that may enable students to enter or begin the problem at different places. In some items, each successive component is designed to assess progressively more difficult skills or higher knowledge levels. Certain components ask students to explain their reasoning for engaging in particular mathematical operations or for arriving at certain conclusions. The types of tasks utilized do not necessarily require computations. Students may also be asked to perform such tasks as constructing a graph, shading some portion of a figure, or listing object combinations that meet specified criteria.

Open-ended tasks are especially useful for measuring students' problem-solving skills in mathematics. They offer the opportunity to present real-life situations that require students to solve problems using mathematics abilities learned in the classroom. Students must read the task carefully, identify the necessary information, devise a method of solution, perform the calculations, enter the solution directly in the response space, and, when required, offer an explanation. This provides insight into the students' mathematical knowledge, abilities, and reasoning processes.

The open-ended mathematics items are scored on a 0–4 point scale using an item-specific scoring guideline. The item-specific scoring guideline outlines the requirements for each score point. Item-specific scoring guidelines are based on the "General Description of Mathematics Scoring Guidelines for Open-Ended Items". The general guidelines describe a hierarchy of responses, which represent the five score levels. See Appendix A or the *Mathematics Item and Scoring Samplers* available on the PDE website.

ENGLISH LANGUAGE ARTS ASSESSMENT MEASURES

The content blueprints for the English language arts assessment are shown in the following tables. The blueprints are organized around three Reporting Clusters (Reading, Writing, and Text-Dependent Analysis) based on the expressed emphasis contained within the Pennsylvania Core Standards.

- Reading
    - A = Literature Text
    - B = Informational Text
    - A-K and B-K = Key Ideas and Details
    - A-C and B-C = Craft and Structure/Integration of Knowledge and Ideas
    - A-V and B-V = Vocabulary Acquisition and Use
- Writing
    - D = Conventions of Standard English
- Text-Dependent Analysis
    - E = Text-Dependent Analysis (Grades 4–8 only)

Within the Reading Reporting Cluster, each Eligible Content aligns to a Genre Reporting Category (Literature Text or Informational Text) as well as a Core Competency Reporting Category (Key Ideas and Details; Craft and Structure/ Integration of Knowledge and Ideas; or Vocabulary Acquisition and Use) as shown in the table below.

Table 2–1. English Language Arts Eligible Content Blueprint

Genre	Key Ideas and Details (Key Ideas)	Craft and Structure/Integration of Knowledge and Ideas (CSI)	Vocabulary Acquisition and Use (Vocabulary)
Literature Text	A-K.1.1.1	A-C.2.1.1	A-V.4.1.1
Literature Text	A-K.1.1.2	A-C.3.1.1	A-V.4.1.2
Literature Text	A-K.1.1.3	NA	NA
Informational Text	B-K.1.1.1	B-C.2.1.1	B-V.4.1.1
Informational Text	B-K.1.1.2	B-C.2.1.2	B-V.4.1.2
Informational Text	B-K.1.1.3	B-C.3.1.1	NA
Informational Text	NA	B-C.3.1.2	NA
Informational Text	NA	B-C.3.1.3	NA

The English language arts assessment employs several types of test questions, including standalone and passage-based Multiple-Choice questions (MC), Evidence-Based Selected-Response (EBSR) questions, Short-Answer (SA) questions (Grade 3 only) and Text-Dependent Analysis (TDA) questions (Grades 4–8).

PASSAGE-BASED MULTIPLE-CHOICE ITEMS

Passage-based multiple-choice items measure how well students comprehend the overall meaning of a passage or make basic inferences about it. At times, asking students to choose a preferred answer is the best way to determine whether they have gleaned certain information from a story. Such information may include setting, central idea, or main events and their sequence. These multiple-choice items are aligned to Reporting Categories within the Reading Reporting Cluster.

Each reading multiple-choice item has four response options, only one of which is correct. The student is awarded one point for choosing the correct response. Incorrect response choices, or distractors, typically represent some kind of misinterpretation, predisposition, unsound reasoning, or casual reading of the item and/or stimuli.

STANDALONE MULTIPLE-CHOICE ITEMS

Standalone multiple-choice items require that a student demonstrate both passive (recognizing and identifying grammatical and mechanical errors in text, such as misspellings, errors in word choice, errors in verb tense, or pronoun usage) and active (choosing the appropriate correction of an embedded error, such as deleting an irrelevant detail, changing the sequence of details, or placing correct marks of punctuation) language skills related to conventions of standard English and knowledge of language. These multiple-choice items are aligned to the Language Reporting Category within the Writing Reporting Cluster.

All language multiple-choice items have four response options that include only one correct answer. The student is awarded one raw score point for choosing the correct response. Incorrect response choices, or distractors, typically represent some kind of misinterpretation or predisposition, unsound reasoning, or casual reading of the item and/or stimuli.

EVIDENCE-BASED SELECTED-RESPONSE ITEMS

Each two-part evidence-based selected-response (EBSR) question is designed to elicit an evidence-based response from a student who has read either a Literature or Informational Text passage. In Part One, which is similar to a multiple-choice question, the student analyzes a passage and chooses the best answer from four answer choices. In Part Two, the student elicits evidence from the passage to select one or more answers based on his/her response to Part One. Part Two is different from a multiple-choice question in that there may be more than four answer options and more than one correct answer. Each EBSR test question is worth either two or three points, and students can receive partial credit for providing a correct response to Part One or for providing one or more correct responses in Part Two. The student is awarded one raw score point for choosing each correct response. Incorrect response choices, or distractors, in both Part One and Part Two typically represent some kind of misinterpretation, predisposition, unsound reasoning, or casual reading of the item and/or stimuli.

SHORT-ANSWER ITEMS (GRADE 3)

Constructed-response tasks such as the short-answer questions included on the assessment for Grade 3 require written responses. These items are designed to address comprehension of text in ways that multiple-choice items cannot. These short written responses require about five minutes per item and allow a student to prepare an answer using supporting details or examples derived from the text. Prior to 2013, these test questions were called "open-ended" items due to the many possible responses students could construct compared to the four static options available in a multiple-choice item. These items began to be labeled as short-answer items during the 2013 administration. The shift in labeling, from "open-ended" to "short-answer," was implemented to draw a greater contrast to the new "Text-Dependent Analysis" questions which require substantial student writing. By comparison, responses to the short-answer items are simpler and require less explication and almost no analysis.

The reading short-answer items are scored on a 0–3-point scale using an item-specific scoring guideline. This scale is consistent with the scale used on the National Assessment of Educational Progress (NAEP). The change from the former 0–4-point scale improves the alignment with the types of tasks required. Each task is text-dependent and is carefully constructed with the scoring guideline reflecting the task requirements. All item-specific scoring guidelines are based on the "General Scoring Guidelines for Short-Answer Reading Items." The general guidelines describe a hierarchy of responses, which represent the four score levels. See Appendix A or the *English Language Arts Item and Scoring Samplers* available on the PDE website.

TEXT-DEPENDENT ANALYSIS ITEMS (GRADES 4–8)

Text-dependent analysis questions require students to draw on basic writing skills while inferring and synthesizing information from a passage or passage set they have read during the test event, in order to develop a comprehensive, holistic essay response. Both Literature and Informational Texts are addressed through this item type. The demand required of a student's reading and writing skills in response to a TDA coincides with the similar demands required for a student to be college and career ready. The essay responses developed for this item type require approximately thirty minutes. These items are reported under the Text-Dependent Analysis Reporting Category, which is found in the Reporting Cluster of the same name.

The text-dependent analysis items are scored on a 1–4-point scale using the holistic "PSSA Text-Dependent Analysis Scoring Guidelines." The TDA scoring guidelines describe a hierarchy of responses, which represent the four score levels, and include comprehension, writing, and analysis skills. See Appendix A or the *English Language Arts Item and Scoring Samplers* available on the PDE website.

PASSAGE COMPLEXITY

The Pennsylvania Core Standards require students to read increasingly complex texts with greater independence and proficiency as they progress toward college- and career-readiness. DRC has worked with PDE to develop a process that measures (1) the quantitative evaluation of the text, and (2) the qualitative evaluation of the text that is reported out on a passage placemat. In addition, a third component, matching reader to text and task, is also taken into consideration during passage evaluation and teacher committee reviews.

QUANTITATIVE EVALUATION

Evaluating the complexity of a passage is essentially a judgmental process by individuals familiar with the classroom context and what is developmentally and linguistically appropriate for students at a given grade level. Although readability indices will be computed and made available on the passage placemat for each passage, we believe that these indices measure different aspects of readability and can result in various interpretations. Because no readability formula is perfect, qualitative measures have been implemented to help determine placement and appropriateness for passages used in the Pennsylvania assessments. These measures include: 1) rubric-based qualitative evaluations, and 2) teacher content review committees to provide expert opinions on grade-level appropriateness as part of matching the reader to text and task considerations.

QUALITATIVE EVALUATION

Rubrics provide the qualitative measures for literary and informational passages. As indicated on these placemats, the quantitative measures suggest the appropriate grade band of the text, while the qualitative rubrics pinpoint the specific grade level. These rubrics provide a powerful and comprehensive way of evaluating a range of stimulus materials that cover the literary and informational scope outlined in the Pennsylvania Core Standards. Passages selected for the Pennsylvania assessments should have evidence of their complexity determination and grade-level placement, based on both quantitative and qualitative measures as specified above.

SCIENCE ASSESSMENT MEASURES

The PSSA science assessment has four major reporting categories: The Nature of Science, Biological Sciences, Physical Sciences, and Earth and Space Sciences. These categories are similar to those used by the National Assessment of Educational Progress (NAEP) and The Third International Mathematics and Science Study (TIMSS). However, the PSSA organizes the categories differently. The science assessment anchors cover seventeen major categories from two sets of standards: Science and Technology Standards (3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, and 3.8) and Environment and Ecology Standards (4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, and 4.9).

The Assessment Anchors are organized into four classifications, as listed below.

- A = Nature of Science
- B = Biological Sciences
- C = Physical Sciences
- D = Earth and Space Sciences

These four reporting categories are used in both grades four and eight. In addition to these reporting categories, there are additional Assessment Anchors for each grade level. The first letter of each Assessment Anchors represents the reporting category, and the second letter represents the Assessment Anchors. These Assessment Anchors are listed below.

- A. The Nature of Science
    - S.A.1. Reasoning and Analysis
    - S.A.2. Processes, Procedures, and Tools of Scientific
    - S.A.3. Systems, Models, and Patterns
- B. Biological Sciences
    - S.B.1. Structure and Function of Organisms
    - S.B.2. Continuity of Life
    - S.B.3. Ecological Behavior and Systems

- C. Physical Sciences
    - S.C.1. Structure, Properties and Interactions of Matter and Energy
    - S.C.2 Forms, Sources, Conversions, and Transfer of Energy
    - S.C.3 Principles of Force and Motion
- D. Earth and Space Sciences
    - S.D.1 Earth Features and Processes that Change Earth and Its Resources
    - S.D.2 Weather, Climate, and Atmospheric Processes
    - S.D.3 Composition and Structure of the Universe

The science assessment employs three types of test items: multiple-choice, technology-enhanced, and open-ended. These item types assess different levels of knowledge and provide different kinds of information about science achievement. The design of the PSSA for science achieves a reasonable balance between the two item types. Concepts include

SCIENCE MULTIPLE-CHOICE ITEMS

The majority of the science items included on the PSSA are multiple-choice (selected-response) items, either as standalone multiple-choice items or as scenario-based multiple-choice items. (Scenario-based multiple-choice items are found in Grade 8 only.) Multiple-choice items are especially efficient for measuring a broad range of content. In the PSSA science assessment, each multiple-choice item has four response options, only one of which is correct. The student is awarded one point for choosing the correct response. Distractors typically represent incorrect concepts, incorrect logic, or incorrect application of a scientific principle.

Multiple-choice items are used to assess a variety of skill levels, from short-term recall of facts to the application of science content. PSSA items involving application emphasize the requirement to utilize science content to find an answer rather than simply recalling information from memory.

TECHNOLOGY-ENHANCED ITEMS

A small number of technology-enhanced items were included on the 2024 PSSA science assessment. These items were to begin the transition of the science assessment to be primarily administered in an computer based delivery as well as to begin assessing STEELS aligned concepts and content in ways the multiple choice items cannot.

OPEN-ENDED ITEMS FOR SCIENCE

At all grades, standalone open-ended science items require students to read a description of a scientific problem and to develop an appropriate solution. Standalone open-ended items require about five minutes per task.

Open-ended tasks are especially useful for measuring students' skills in science. These tasks may present real-life situations that require students to solve problems using science abilities learned in the classroom. Students must read a task carefully, identify the necessary information, devise a method of solution, enter the solution directly into the answer document, and when required, offer an explanation. This provides insight into students' science knowledge, abilities, and reasoning processes.

The open-ended science items are scored on a 0–2-point scale with an item-specific scoring guideline, and each task is carefully constructed with a scoring guideline reflecting the task requirements. The general guidelines describe a hierarchy of responses, which represent the three score levels. Each item-specific scoring guideline outlines the requirements at each score point, and each item-specific scoring guideline is based on the "Science Scoring Guidelines for Open-Ended Items." See Appendix A or the *Science Item and Scoring Samplers* available on the PDE website.

SCIENCE SCENARIOS FOR GRADE 8

In addition to standalone multiple-choice and open-ended items, the science assessment includes scenarios at Grade 8. In consideration of the multidisciplinary and interdisciplinary nature of science content, science scenarios create stronger connections between The Nature of Science/Science Content and the multiple-choice items associated with a scenario. As a result, science scenarios allow the assessment to efficiently address and utilize the connections among the science content domains. A science scenario contains text, graphics, charts, and/or tables and uses these elements to describe the results of a class project, an experiment, or other similar research. Students use the information found in a science scenario as a platform from which to answer multiple-choice questions. Scenarios and questions reach beyond simple fact recollection; they are designed to challenge students to think and to apply the knowledge and skills learned in their classrooms. Scenarios are designed to reflect multi-dimensional classroom activities that incorporate higher cognitive levels of understanding. Science scenarios challenge students to interpret stimulus content and to apply existing knowledge to new data, while using science knowledge and process skills to arrive at their answers.

CHAPTER THREE: ITEM DEVELOPMENT PROCESS

The core portion of the 2024 PSSA operational administration is made up of items that were field-tested primarily in the 2023 PSSA administration. Therefore, the activities that led to the 2024 PSSA operational administration began with the development of the test items that appeared in the field-test portion of the 2023 operational administration. In turn, items that appeared on the field-test portion of the 2023 operational administration were developed during and prior to 2023. (See Table 3–1 for a graphic representation of the basic process flow and overlap of the development cycles.)

Table 3–1. General Development Timeline Pattern of the PSSA

Operational Admin Year	2017	2018	2019	2021	2022	2023	2024
2019	Initial Item Dev →	Field Test →	Operational Core Admin with embedded equating block items →	Core-to-Core Link			
2020	No testing occurred.						
2021		Initial Item Dev →	Field Test →	Operational Core Admin with embedded equating block items1	Core-to-Core Link		
2022			Initial Item Dev →	Field Test →	Operational Core Admin with embedded equating block items	Core-to-Core Link	
2023				Initial Item Dev →	Field Test →	Operational Core Admin with embedded equating block items	Core-to-Core Link
2024					Initial Item Dev →	Field Test →	Operational Core Admin with embedded equating block items

Table 3–2. General Timeline Associated with 2013 and 2014 Field Test and 2015–2024 Operational Assessment of ELA and Mathematics at Grades 3, 4, 5, 6, 7, and 8

Time Frame	Assessment	Activity
January 2012–July 2012	’13 FT for ’15 OP	Item development for items to embed in 2013 operational test (Grades 3–5 only)
July 2012	’13 FT for ’15 OP	Item review for the embedded field test in 2013 operational assessment (Grades 3–5 only)
September 2012–January 2013	’13 OP & ’13 FT for ’15 OP	Forms construction for 2013 operational assessment with embedded field test (Grades 3–5 only)
January 2013–June 2013	’14 FT for ’15 OP	Item development for items to embed on 2014 operational assessment
February 2013	’13 FT for ’15 OP	2013 standalone field test for ELA: Writing Grades 3–5
March 2013–May 2013	’13 FT for ’15 OP	2013 embedded field test in 2013 operational test (Grades 3–5 only)
June 2013	’14 FT for ’15 OP	Item review for the embedded field test in 2014 operational assessment
July 2013	’13 FT for ’15 OP	Statistical review of 2013 field-tested items (Grades 3–5 only)
September 2013–January 2014	’14 OP & ’14 FT for ’15 OP	Forms construction for 2014 operational assessment
January 2014–July 2014	’15 FT for ’16 OP	Item development for items to embed in 2015 operational test
February 2014	’14 FT for ’15 OP	2014 standalone field test for ELA: Writing Grades 6–8
April 2014–May 2014	’14 OP & ’14 FT for ’15 OP	2014 embedded field test in 2014 operational assessment
June 2014	’15 FT for ’16 OP	Item review for the embedded field test in 2015 operational assessment
July 2014	’14 FT for ’15 OP	Statistical review of 2014 field-tested items
September 2014–January 2015	’15 OP & ’15 FT for ’16 OP	Forms construction for 2015 operational assessment
April 2015–May 2015	’15 OP & ’15 FT for ’16 OP	2015 operational assessment
January 2015–July 2015	’15 FT for ’16 OP	Item development for items to embed in 2016 operational test
April 2015–May 2015	’14 OP & ’14 FT for ’15 OP	2015 embedded field test in 2015 operational assessment
June 2015	’15 FT for ’16 OP	Item review for the embedded field test in 2016 operational assessment
July 2015	’14 FT for ’15 OP	Statistical review of 2015 field-tested items
September 2015–January 2016	’16 OP & ’16 FT for ’17 OP	Forms construction for 2016 operational assessment
April 2016–May 2016	’16 OP & ’16 FT for ’17 OP	2016 operational assessment
January 2016–July 2016	’17 FT for ’18 OP	Item development for items to embed in 2017 operational test
April 2016–May 2016	’15 OP & ’15 FT for ’16 OP	2016 embedded field test in 2016 operational assessment
June 2016	’16 FT for ’17 OP	Item review for the embedded field test in 2017 operational assessment
July 2016	’15 FT for ’16 OP	Statistical review of 2016 field-tested items
September 2016–January 2017	’17 OP & ’17 FT for ’18 OP	Forms construction for 2017 operational assessment
April 2017–May 2017	’17 OP & ’17 FT for ’18 OP	2017 operational assessment
January 2017–July 2017	’17 FT for ’18 OP	Item development for items to embed in 2018 operational test
April 2017–May 2017	’16 OP & ’16 FT for ’17 OP	2017 embedded field test in 2017 operational assessment
June 2017	’17 FT for ’18 OP	Item review for the embedded field test in 2018 operational assessment
July 2017	’16 FT for ’17 OP	Statistical review of 2017 field-tested items

Table 3–2 (continued). General Timeline Associated with 2013 and 2014 Field Test and 2015–2024 Operational Assessment of ELA and Mathematics at Grades 3, 4, 5, 6, 7, and 8

Time Frame	Assessment	Activity
September 2017–January 2018	’18 OP & ’18 FT for ’19 OP	Forms construction for 2018 operational assessment
April 2018–May 2018	’18 OP & ’18 FT for ’19 OP	2018 operational assessment
January 2018–July 2018	’18 FT for ’19 OP	Item development for items to embed in 2019 operational test
April 2018–May 2018	’18 OP & ’18 FT for ’19 OP	2018 embedded field test in 2018 operational assessment
June 2018	’18 FT for ’19 OP	Item review for the embedded field test in 2019 operational assessment
July 2018	’17 FT for ’18 OP	Statistical review of 2018 field-tested items
September 2018–January 2019	’18 OP & ’18 FT for ’19 OP	Forms construction for 2019 operational assessment
April 2019–May 2019	’18 OP & ’18 FT for ’19 OP	2019 operational assessment
January 2019–July 2019	’19 FT for ’21 OP	Item development for items to embed in 2021 operational test
April 2019–May 2019	’19 OP & ’19 FT for ’21 OP	2019 embedded field test in 2019 operational assessment
June 2019	’19 FT for ’21 OP	Item review for the embedded field test in 2021 operational assessment
July 2019	’19 FT for ’21 OP	Statistical review of 2019 field-tested items
September 2019–January 2021	’19 OP & ’19 FT for ’21 OP	Forms construction for 2021 operational assessment
April 2021–September 2021	’19 OP & ’19 FT for ’21 OP	2021 operational assessment
January 2021–July 2021	’21 FT for ’22 OP	Item development for items to embed in 2022 operational test
April 2021–May 2021	’21 OP & ’21 FT for ’22 OP	2021 embedded field test in 2021 operational assessment
June 2021	’21 FT for ’22 OP	Item review for the embedded field test in 2022 operational assessment
July 2021	’21 FT for ’22 OP	Statistical review of 2021 field-tested items
September 2021–January 2022	’22 OP & ’22 FT for ’23 OP	Forms construction for 2022 operational assessment
April 2022–September 2022	’22 OP & ’22 FT for ’23 OP	2022 operational assessment
January 2022–July 2022	’22 FT for ’23 OP	Item development for items to embed in 2023 operational test
April 2022–May 2022	’22 OP & ’22 FT for ’23 OP	2022 embedded field test in 2022 operational assessment
June 2022	’22 FT for ’23 OP	Item review for the embedded field test in 2023 operational assessment
July 2022	’22 FT for ’23 OP	Statistical review of 2022 field-tested items
September 2022–January 2023	’23 OP & ’23 FT for ’24 OP	Forms construction for 2023 operational assessment
April 2023–September 2023	’23 OP & ’23 FT for ’24 OP	2023 operational assessment
January 2023–July 2023	’23 FT for ’24 OP	Item development for items to embed in 2024 operational test
April 2023–May 2023	’23 OP & ’23 FT for ’24 OP	2023 embedded field test in 2023 operational assessment
June 2023	’23 FT for ’24 OP	Item review for the embedded field test in 2024 operational assessment
July 2023	’23 FT for ’24 OP	Statistical review of 2023 field-tested items
September 2023–January 2024	’24 OP & ’24 FT for ’25 OP	Forms construction for 2024 operational assessment
April 2024–September 2024	’24 OP & ’24 FT for ’25 OP	2024 operational assessment

Table 3–3. Participating Districts by Region

Region of Commonwealth	School District
Western	Athens Area, Grove City Area, Penn Hills, Pittsburgh Public Schools
Central	Manheim Township, Newport, State College Area, West Shore, Wilkes-Barre Area
Eastern	Haverford Township, Lower Merion, Mid-Valley, Philadelphia City SD, Upper Merion

PROCESS AND PROCEDURES FOR THE 2006 ITEM PILOT

Two parallel forms of the science assessment were designed for each grade level, with a designated administration time of thirty minutes. No attempt was made to replicate the design of a PSSA science operational test for the cognitive lab or pilot test because of testing-time limitations and the objectives of this study. The items were representative of items from each of the proposed PSSA's four reporting categories (i.e., The Nature of Science, Biological Sciences, Physical Sciences, and Earth and Space Sciences). All test items were approved by PDE before inclusion in the PSSA Science Item Tryout Project.

In Grade 4, each form of the test consisted of ten multiple-choice items, 70 percent of which included graphs, graphics, charts, or tables with relevant information associated with the item. All four reporting strands were assessed in each Grade 4 test form. In Grades 8 and 11, age/grade-appropriate science scenarios were developed. The scenarios included graphics, charts, tables, graphs, and diagrams to support the scenario text. A set of test items associated with each science scenario was developed. In Grade 8, each test form included items from all four reporting strands. In Grade 11, scenarios in test Form A assessed the biological, earth and space, and nature of science reporting strands, while test Form B assessed the physical, earth and space, and nature of science reporting strands.

Scenarios and questions reached beyond simple fact recollection; they were designed to challenge students to think and to apply knowledge and skills learned in their classrooms. The science scenarios were based on Pennsylvania Assessment Anchors and Eligible Content. Scenarios were designed to reflect multi-dimensional classroom activities that incorporate higher cognitive levels of understanding. Each scenario was stimulus-based and included passages with graphics, charts, graphs, or a combination of all three media. Science scenarios challenged students to interpret passage content while using science knowledge and process skills to determine their answers.

IMPLEMENTATION AND TEST ADMINISTRATION FOR 2006 ITEM PILOT

Two classrooms within one geographic region participated in the project each day. At least two test development specialists were present at all but one school district during the pilot study project sessions; in addition, representatives from PDE attended most sessions. The PSSA Science Item Tryout Project field work occurred during a three-week window, beginning on February 27 and concluding on March 16.

TEST DEVELOPMENT CONSIDERATIONS: ALL ASSESSMENTS

The major considerations in the item development process were the alignment to the Pennsylvania Core Standards-aligned Assessment Anchors and Eligible Content (mathematics and ELA), alignment to the Pennsylvania Academic Standards-aligned Assessment Anchors and Eligible Content (science only), grade-level appropriateness (reading/interest level, etc.), depth of knowledge, cognitive level, item/task level of complexity, estimated difficulty level, relevancy of context, rationale for distractors, style, accuracy, and correct terminology. The *Standards for Educational and Psychological Testing* (AERA, APA, NCME, 2014) and the *Principles of Universal Design* (Thompson, Johnstone, & Thurlow, 2002) guided the development process. In addition, DRC's manual, *Fairness in Testing: Guidelines for Training on Bias, Fairness, and Sensitivity Issues* was used for developing items. All items were reviewed for fairness by bias and sensitivity committees and for content by Pennsylvania educators and field-specialists. Items were also reviewed for adherence to the Principles of Universal Design by representatives from the National Center for Educational Outcomes (NCEO). In addition, the items were reviewed for adherence to the guidelines outlined in the Pennsylvania publication *Principles, Guidelines and Procedures for Developing Fair Assessment Systems: Pennsylvania Assessment Through Themes* (PATT).

BIAS, FAIRNESS, AND SENSITIVITY: ALL ASSESSMENTS

At every stage of the item and test development process, DRC employs procedures that are designed to ensure that items and tests met Standard 7.4 of the Standards for Educational and Psychological Testing (AERA, APA, NCME, 2014).

> *Standard 7.4: Test developers should strive to identify and eliminate language, symbols, words, phrases, and content that are generally regarded as offensive by members of racial, ethnic, gender, or other groups, except when judged to be necessary for adequate representation of the domain.*

To meet Standard 7.4, DRC employs a series of internal quality steps. DRC provides specific training for test developers, item writers, and reviewers on how to write, review, revise, and edit items for issues of bias, fairness, and sensitivity (as well as for technical quality). Training also includes an awareness of and sensitivity to issues of cultural diversity. In addition to providing *internal* training in reviewing items in order to eliminate potential bias, DRC also provides *external* training to the review panels of minority experts, teachers, and other stakeholders.

DRC's guidelines for bias, fairness, and sensitivity include instruction concerning how to eliminate language, symbols, words, phrases, and content that might be considered offensive by members of racial, ethnic, gender, or other groups. Areas of bias that are specifically targeted include, but are not limited to, stereotyping, gender, regional/geographic, ethnic/cultural, socioeconomic/class, religious, and biases against a particular age group (ageism) or persons with disabilities. DRC catalogues topics that should be avoided and maintains balance in gender and ethnic emphasis within the pool of available items and passages.

UNIVERSAL DESIGN: ALL ASSESSMENTS

As stated above, the Principles of Universal Design were incorporated throughout the item development process to allow participation of the widest possible range of students in the PSSA. The following checklist was used as a guideline:

- Items measure what they are intended to measure.
- Items respect the diversity of the assessment population.
- Items have a clear format for text.
- Stimuli and items have clear pictures and graphics.
- Items have concise and readable text.
- Items allow changes to other formats, such as Braille, without changing meaning or difficulty.
- The arrangement of the items on the test has an overall appearance that is clean and well organized.

A more extensive description of the application of the Principles of Universal Design is described in Chapter Four.

DEPTH OF KNOWLEDGE: ALL ASSESSMENTS

An important element in statewide assessment is the alignment between the overall assessment system and the state's standards. A methodology developed by Norman Webb (1999) offers a comprehensive model that can be applied to a wide variety of contexts. With regard to the alignment between standards statements and the assessment instruments, Webb's criteria include five categories, one of which deals with content. Within the content category is a useful set of levels for evaluating depth of knowledge (DOK). According to Webb (1999), "depth-of-knowledge consistency between standards and assessments indicates alignment if what is elicited from students on the assessment is as demanding cognitively as what students are expected to know and do as stated in the standards" (p. 7–8). The four levels of cognitive complexity (i.e., depths of knowledge) are as follows:

- Level 1: Recall
- Level 2: Application of Skill/Concept
- Level 3: Strategic Thinking
- Level 4: Extended Thinking

Depth-of-knowledge levels were incorporated in the item writing and review process, and items were coded with respect to the level they represented. Generally, multiple-choice items are written to DOK levels 1 and 2, evidence-based selected-response items are written to DOK levels 2 and 3, and constructed-response items are written to DOK level 3.

PASSAGE READABILITY

Evaluating the readability of a passage is essentially a judgmental process by individuals familiar with the classroom context and what is linguistically appropriate at a given grade level as described in the section on reading passage selection later in this chapter. Although various readability indices were computed and reviewed, it is recognized that such methods measure different aspects of readability and are often fraught with particular interpretive liabilities. Thus, the commonly available readability formulas were not used in a rigid way, but more informally to provide for several snapshots of a passage that senior test development staff considered along with experience-based judgments in guiding the passage selection process. In addition, passages were reviewed by committees of Pennsylvania educators who evaluated each passage for readability and grade-level appropriateness.

TEST ITEM READABILITY: ALL ASSESSMENTS

Careful attention was given to the readability of the items to make certain that the assessment focus of the item did not shift based on the difficulty of reading the item. Subject areas such as mathematics or science contain many content-specific vocabulary terms. As a result, readability formulas were not used. However, wherever it was practicable and reasonable, every effort was made to keep the vocabulary one grade level below the tested grade level for non-reading tests. There was a conscious consideration made to ensure that each test question was evaluating a student's ability to build toward mastery of the mathematics standards or the science standards versus the student's reading ability. Resources used to verify the vocabulary level were the *EDL Core Vocabularies* and the *Children's Writer's Word Book.*

In addition, every test question is brought before several different committees comprised of grade-level experts in the field of mathematics education and science education. They review each question from the perspective of the students they teach, and they determine the validity of the vocabulary used and work to minimize the level of reading required.

Vocabulary was also addressed at the Bias, Fairness, and Sensitivity Review, although the focus was on how certain words or phrases may represent a possible source of bias or issue of fairness or sensitivity.

TEST DEVELOPMENT PROCESS: ALL ASSESSMENTS

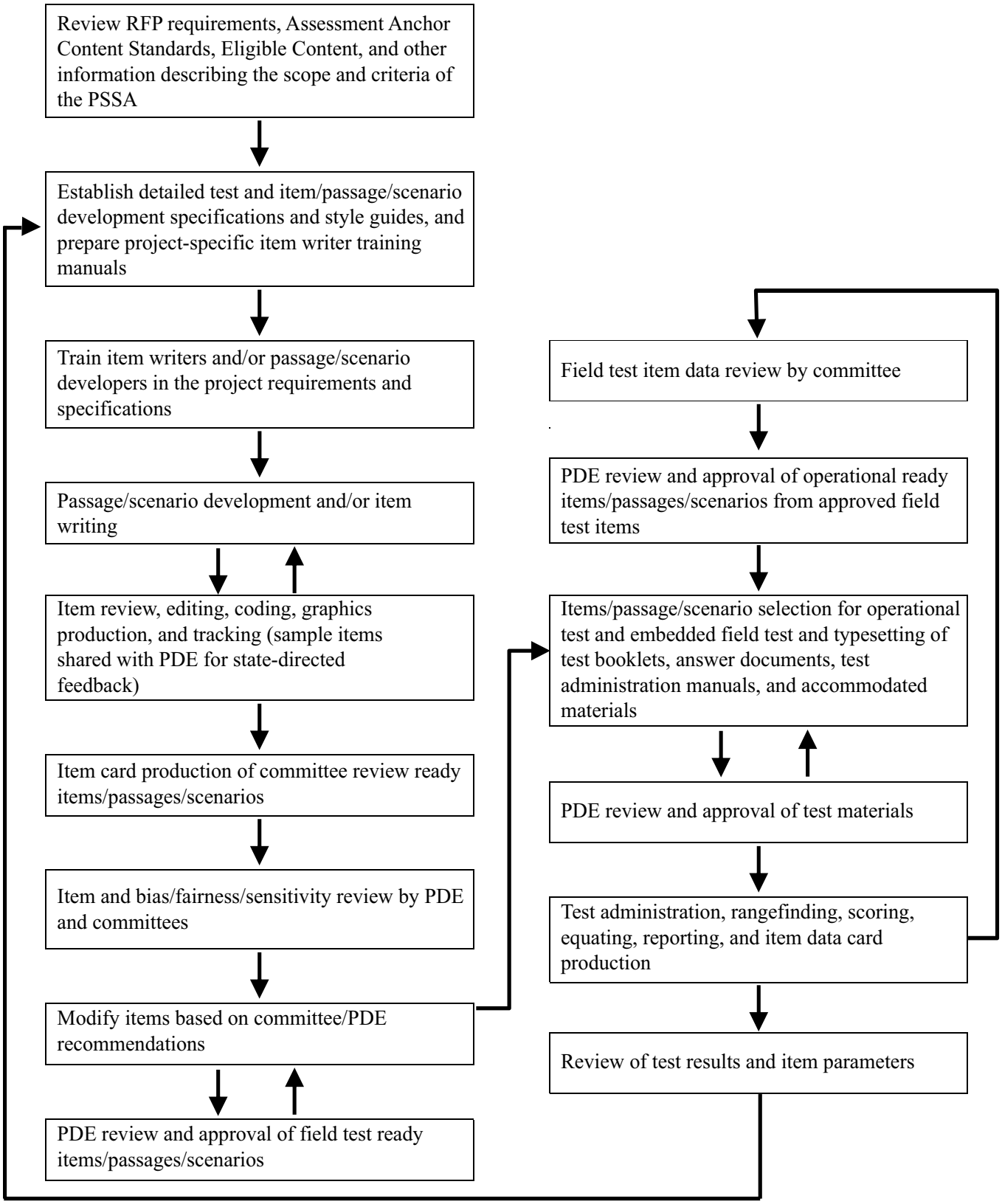
The test development process for passages, scenarios, and items followed a logical timeline, which is outlined below in Table 3–4. On the front end of the schedule, tasks were generally completed with the goal of presenting field-test candidate items to committees of Pennsylvania educators. On the back-end of the schedule, all tasks lead to the field-test data review.

Table 3–4. Item and Test Development Cycle and Timeline

Steps in Development Cycle	Timeline Before/After New Item Review		
Development planning	Fall	⇩	-12 to -9 months
Reading passage selection	Fall	⇩	-12 to -9 months
Item writer training	Fall/Winter	⇩	-9 months
Initial item authoring	Winter/Spring	⇩	-9 to -4 months
Internal reviews and PDE reviews	Spring/Summer	⇳	-8 to -1 month
Bias, Fairness, and Sensitivity Review	Summer/Fall	⇩	+/- 0 months
New Item Content Review	Summer/Fall	⇨	+/- 0 months
Post-review resolution and clean-up	Summer/Fall	⇩	+1 to +2 months
Build test forms	Fall	⇩	+2 to +4 months
Internal form reviews and PDE reviews	Fall/Winter	⇳	+3 to +4 months
Form printing, packaging, and shipping	Winter/Spring	⇩	+4 to +8 months
Test administration	Spring	⇩	+9 months
Material/data processing, rangefinding, and scoring	Spring/Summer	⇩	+10 to +12 months
Field-Test Item Data Review	Summer	⇨	+12 months
Select operational items	Summer/Fall	⇩	+13 to +15 months

The process flowchart in Figure 3–1 illustrates the interrelationship among the steps in the process that occur in a normal year of development (i.e., when the items for field testing are primarily from new development, as opposed to being selected from an existing item bank). In addition, a detailed process table describing the item and test development processes also appears in Appendix C.

Figure 3–1. DRC Item and Test Development Process



The following paragraphs describe the processes which lead up to the operational test in a normal round of development. These processes were used to develop field-test items used as operational items for all administrations.

ITEM DEVELOPMENT PLANNING MEETING: ALL ASSESSMENTS

Prior to the start of any item development work, DRC's test development staff meets with PDE's assessment office to discuss the test development plans for the next PSSA administration, including the test blueprint, the field-test plan (including development counts), procedures, timelines, etc. With a complete development cycle lasting several years (from item authoring through field test, data review, and operational usage), the initial planning begins well in advance of the anticipated administration. For the 2024 operational administration, the initial planning meeting for the item authoring process for the 2023 field test occurred in fall 2021. Item authoring began early in 2022, with the item review meetings occurring in June 2022. See Table 3–2.

ITEM WRITER TRAINING: ALL ASSESSMENTS

Item writers were selected and trained for the content areas of mathematics, English language arts, and science. Qualified writers were college graduates with teaching experience and a demonstrated base of knowledge in the content area. Many of these writers were content assessment specialists and curriculum specialists. The writers were trained individually and had previous experience in writing selected-response and constructed-response items. Prior to developing items for the PSSA, the cadre of item writers was trained with regard to the following:

- Pennsylvania Core Standards, Assessment Anchors, and Eligible Content (mathematics and ELA)
- Pennsylvania Academic Standards, Assessment Anchors, and Eligible Content (science)
- Webb's Four Levels of Cognitive Complexity: Recall, Basic Application of Skill/Concept, Strategic Thinking, and Extended Thinking
- General Scoring Guidelines for Each Content Area
- Specific and General Guidelines for Item Writing
- Bias, Fairness, and Sensitivity Guidelines
- Principles of Universal Design
- Item Quality Technical Style Guidelines
- Reference Information
- Sample Items

READING PASSAGE SELECTION

The task of searching for passages was conducted by DRC professionals with classroom experience in reading/language arts. These professionals also underwent specialized training (provided by DRC) in the characteristics of acceptable passages. Guidelines for passage selection included appropriate length, text structure, density, and vocabulary for the grade level. A judgment was also made about whether the reading level required by a particular passage was at the independent level, that is, where the average student should be able to read 90 percent of words in the text independently. Passage finders were given the charge to search for a specified number of passages for each genre. Generally, at least twice as many passages as needed were sought. Most passages acquired for the 2022 field test were authentic in that they were culled from published materials. Approval to reprint was secured from the publishers as necessary. Passages underwent an internal review by several test development content editors to judge their merit with regard to the following criteria:

- Passages have interest value for students.
- Passages are grade-appropriate in terms of text complexity, vocabulary, and language characteristics.
- Passages are free of bias, fairness, and sensitivity issues.
- Passages represent different cultures.
- Passages are from a variety of sources.
- Passages are able to stand the test of time.
- Passages are sufficiently rich to generate a variety of SR and CR items.

- Passages are complete with all necessary permissions documentation.
- Passages avoid dated subject matter unless a relevant historical context is provided.
- Passages should not require students to have extensive background knowledge in a certain discipline or area to understand a text.

Once through the internal review process, those passages deemed potentially acceptable were reviewed by the Reading Content Committee and Bias, Fairness, and Sensitivity Committee for final approval.

ITEM AUTHORING AND TRACKING: ALL ASSESSMENTS

Initially, items are generated with software-prepared PSSA Item Cards, which allows for preliminary sorting and reviewing. Although very similar, the PSSA Item Card for Multiple-Choice Items differs from the PSSA Item Card for Evidence-Based Selected-Response Items and the PSSA Item Card for Constructed-response Items in that the former has a location at the bottom of the card for comments regarding the distractors. Examples of these three cards are shown in Appendix D. In both instances a column against the right margin includes codes to identify the subject area, grade level, content categories, passage information (in the case of reading), item type, depth of knowledge (cognitive complexity), estimated difficulty, answer key (for MC items), and calculator use (for mathematics items).

All items undergoing field testing in 2024 were entered into the DRC Item Development and Educational Assessment System (IDEAS), which is a comprehensive, secure, online item banking system. It accommodates item writing, item viewing and reviewing, and item tracking and versioning. IDEAS manages the transition of an item from its developmental stage to its approval for use within a test form. The system supports an extensive item history that includes item usage within a form, item-level notes, content categories and subcategories, item statistics from both classical and Rasch item analyses, and classifications derived from analyses of differential item functioning (DIF). A sample IDEAS Data Card is presented in Appendix D.

INTERNAL REVIEWS AND PDE REVIEWS: ALL ASSESSMENTS

To ensure that the items produced were sufficient in number and adequately distributed across subcategories and levels of difficulty, item writers were informed of the required quantities of items. As items were written, an item authoring card was completed. It contained information about the item, such as grade level, content category, and subcategories. Based on the item writer's classroom teaching experience, knowledge of the content area curriculum, and cognitive demands required by the item, estimates were recorded for level of cognitive complexity and difficulty level. Items were written to provide for a range of difficulty.

As part of the item construction process, each item was reviewed by content specialists and editors at DRC. Content specialists and editors evaluated each item to make sure that it measured the intended Eligible Content and/or Assessment Anchor Content Standard. They also assessed each item to make certain that it was appropriate for the intended grade and that it provided and cued only one correct answer (MC items only). In addition, the difficulty level, depth of knowledge, graphics, language demand, and distractors were also evaluated. Other elements considered in this process included, but were not limited to, Universal Design, bias, source of challenge, grammar/punctuation, and PSSA style.

Following this internal process, items were reviewed by content specialists at the Pennsylvania Department of Education. PDE staff then consulted with DRC about any general issues or concerns (e.g., style, format, interpretation of Assessment Anchors and Eligible Content) and about edits to specific items. Following PDE's review, the items were prepared for the content review meetings conducted with Pennsylvania educators.

ITEM CONTENT REVIEW IN SUMMER 2023: ALL ASSESSMENTS

Prior to field testing, all newly-developed test items were submitted to content committees for review. The content committees consisted of Pennsylvania educators from school districts throughout the Commonwealth of Pennsylvania, some with postsecondary university affiliations. The primary responsibility of the content committee was to evaluate items with regard to quality and content classification, including grade-level appropriateness, estimated difficulty, depth of knowledge, and source of challenge. With source of challenge, items are identified where the cognitive demand is focused on an unintended content, concept, or skill (Webb, 2002). In addition, source of challenge may be attributed if the reason that an answer could be given results from a cultural bias, an inappropriate reading level, or a flawed graphic in an item, or if an item requires specialized, non-content related knowledge to answer. Source of challenge could result in a student who has mastered the intended content or skill answering the item incorrectly or a student who has not mastered the intended content or skill answering the item correctly. Committee members were asked to note any items with a source of challenge and to suggest revisions to remove the source of challenge. They also suggested revisions and made recommendations for reclassification of items. In some cases when an item was deleted, the committee suggested a replacement item and/or reviewed a suggested replacement item provided by the facilitators. The committee also reviewed the items for adherence to the Principles of Universal Design, including language demand and issues of bias, fairness, and sensitivity.

The content review was held June 20–21, 2023, for science, June 20–22, 2023, for ELA, and June 20–23, 2023, for mathematics. Committee members were approved by PDE, and PDE-approved invitations were sent to them by DRC. PDE also selected internal staff members for attendance. The meeting commenced with a welcome by PDE and DRC. This was followed by an overview of the test development process by DRC. PDE, along with DRC, also provided training on the procedures and forms to be used for item content review.

DRC content assessment specialists facilitated the reviews and were assisted by representatives of PDE. Committee members, grouped by grade level and content area, worked through and reviewed the items for quality and content, as well as for the following categories:

- Assessment Anchor Alignment (classified as Full, Partial, or No)
- Content Limits (classified as Yes or No)
- Grade-Level Appropriateness (classified as At Grade Level, Below Grade Level, or Above Grade Level)
- Difficulty Level (classified as Easy, Medium, or Hard)
- Depth of Knowledge (classified as Recall, Application, Strategic Thinking)
- Appropriate Source of Challenge (classified as Yes or No)
- Correct Answer (classified as Yes or No)
- Quality of Distractors (classified as Yes or No)
- Graphics (classified as Yes or No) in regards to appropriateness
- Appropriate Language Demand (classified as Yes or No)
- Freedom from Bias (classified as Yes or No)

The members then came to a consensus and assigned a status to each item as a group: Approved, Accepted with Revision, Move to Another Assessment Anchor or Grade, or Rejected. All comments were recorded, and a master rating sheet was completed. Committee facilitators recorded the committee consensus on the Item Review Rating Sheet. A sample form and rating criteria may be found in Appendix E.

Security was addressed by adhering to a strict set of procedures. Items were distributed for committee review by number and signed for by each member on a daily basis. All attendees, with the exception of PDE staff, were required to sign a confidentiality agreement.

BIAS, FAIRNESS, AND SENSITIVITY REVIEWS IN AUGUST 2023: ALL ASSESSMENTS

Prior to field testing, all newly-developed test items for English language arts, mathematics, and science were also submitted to a Bias, Fairness, and Sensitivity Committee for review. This took place from August 7-11, 2023. The committee's primary responsibility was to evaluate items with regard to bias, fairness, and sensitivity issues. They also made recommendations for changes to or deletion of items in order to remove the potential for issues of bias, fairness, and/or sensitivity. Included in the review were proposed reading passages. An expert, multi-ethnic committee composed of men and women was trained by a DRC test development lead to review items for bias, fairness, and sensitivity issues. Training materials included a manual developed by DRC (DRC, 2003–2016). Members of the committee also had expertise with students with special needs and English Learners. PDE staff members were also trained and participated in the review. All mathematics, English language arts, and science items were read by a cross-section of committee members. Each member noted bias, fairness, and/or sensitivity comments on tracking sheets and on the item, if needed for clarification. Committee members individually categorized any concerns as related to ageism, disability, ethnicity/culture, gender, region, religion, socioeconomic status, or stereotyping. These categories were then the framework through which recommendations for modification or rejection of items occurred during the subsequent committee consensus process. The committee then discussed each of the issues as a group and came to a consensus as to which issues should represent the view of the committee. All consensus comments were then compiled, and the suggested actions on these items were recorded and submitted to PDE. Table 3–5 shows the gender and race/ethnicity composition of the members of the bias committee who reviewed the PSSA items and passages.

Table 3–5. Demographic Composition of the 2023 Bias, Fairness, and Sensitivity Committee

Member #	Gender	Race/Ethnicity	Background
1.	Male	Caucasian American	Pennsylvania College Professor
2.	Female	Caucasian American	National Consultant
3.	Female	Caucasian American	National Consultant
4.	Male	Caucasian American	Pennsylvania Educator
5.	Female	Caucasian American	Pennsylvania Educator (SPED)
6.	Female	Hispanic American	Migrant Education Specialist
7.	Female	Hispanic American	National Consultant
8.	Female	African American	National Consultant (SPED)
9.	Male	African American	National Consultant
10.	Female	African American	Pennsylvania Educator
11.	Female	Asian American	Pennsylvania Educator
12.	Male	Asian American	National Consultant
Totals	8 Females, 4 Males	2 Hispanic Americans, 5 Caucasian Americans, 3 African Americans, 2 Asian Americans	

The results from the Bias, Fairness, and Sensitivity Committee review of mathematics are summarized in Table 3–6.

Table 3–6. Number of Items—2023 Bias, Fairness, and Sensitivity Committee Review for Mathematics

Grade	Total items reviewed per grade	Accepted As Is	Accepted With Revision	Rejected
3	72	68	4	0
4	72	58	14	0
5	72	62	10	0
6	72	61	11	0
7	72	59	13	0
8	72	66	6	0
Total	432	374	58	0

The results from the Bias, Fairness, and Sensitivity Committee review of ELA: Reading are summarized in Table 3–7.

Table 3–7. Number of Items—2023 Bias, Fairness, and Sensitivity Committee Review for ELA: Reading

Grade	Total passages reviewed per grade	Total items or prompts reviewed per grade	Accepted As Is	Accepted With Revision	Rejected
3	11	188	187	1	0
4	12	179	163	0	16
5	12	185	168	2	15
6	12	188	187	1	0
7	11	85	68	2	15
8	12	196	180	0	16
Total	70	1,021	953	6	62

Table 3–8. Number of Items—2023 Bias, Fairness, and Sensitivity Committee Review for Science

Grade	Total items reviewed per grade	Accepted As Is	Accepted With Revision	Rejected
5	356	335	21	0
8	321	309	12	0
Total	677	644	33	0

CHAPTER FOUR: UNIVERSAL DESIGN PROCEDURES APPLIED IN THE PSSA TEST DEVELOPMENT PROCESS

Universally designed assessments allow participation of the widest possible range of students and contribute to valid inferences about participating students. Principles of Universal Design are based on the premise that each child in school is a part of the population to be tested and that testing results should not be affected by disability, gender, race, or English language ability (Thompson, Johnstone, & Thurlow, 2002). At every stage of the item and test development process, procedures were employed to ensure that items and subsequent tests were designed and developed using the elements of universally designed assessments developed by the National Center for Educational Outcomes (NCEO).

Federal legislation addresses the need for universally designed assessments. The No Child Left Behind Act (Elementary and Secondary Education Act) requires that each state must "provide for the participation in [statewide] assessments of all students" [Section 1111(b)(3)(C)(ix)(I)]. Both Title 1 and IDEA regulations call for universally designed assessments that are accessible and valid for all students, including students with disabilities and English Learners. The benefits of universally designed assessments not only apply to these groups of students, but to all individuals with wide-ranging characteristics.

DRC's test development team was trained in the elements of Universal Design as it relates to developing large-scale statewide assessments. Team leaders were trained directly by NCEO, and other team members were subsequently trained by team leaders. Committees involved in content review included some members who were familiar with the unique needs of students with disabilities and English Learners. Likewise, some members of the Bias, Fairness, and Sensitivity Committee were conversant with these issues. What follows are the Universal Design guidelines followed during all stages of the item development process for the PSSA.

ELEMENTS OF UNIVERSALLY DESIGNED ASSESSMENTS

After a review of research relevant to the assessment development process and the Principles of Universal Design (Center for Universal Design, 1997), NCEO has produced seven elements of Universal Design as they apply to assessments (Thompson, Johnstone, & Thurlow, 2002). These elements served to guide PSSA item development.

- **Inclusive Assessment Population**

  The PSSA target population includes all students at the assessed grades attending Commonwealth schools. For state, district, and school accountability purposes, the target population includes all students except those who will participate in accountability through an alternate assessment.

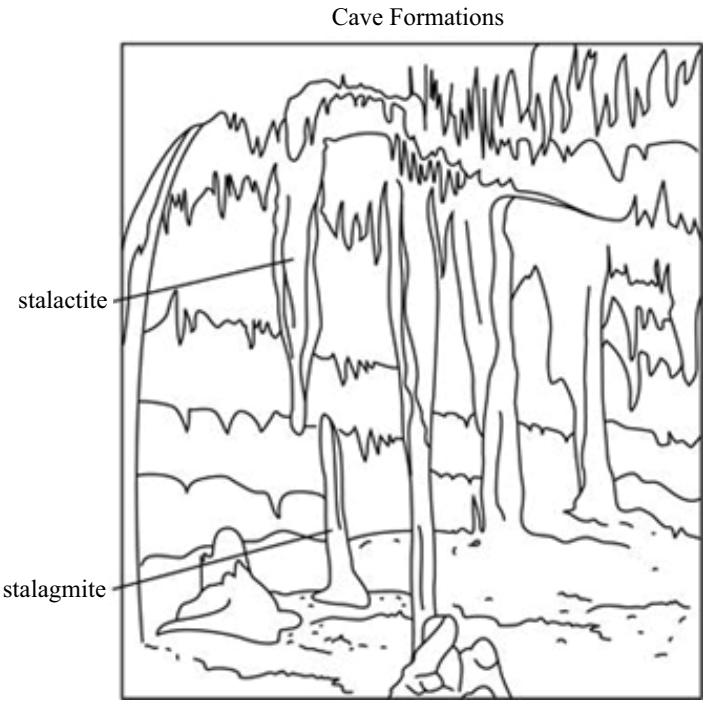
- **Precisely Defined Constructs**

  An important function of well-designed assessments is that they actually measure what they are intended to measure. The Pennsylvania Assessment Anchors and Eligible Content provided clear descriptions of the constructs to be measured by the PSSA at the assessed grade levels. Universally designed assessments must remove all non-construct-oriented cognitive, sensory, emotional, and physical barriers.

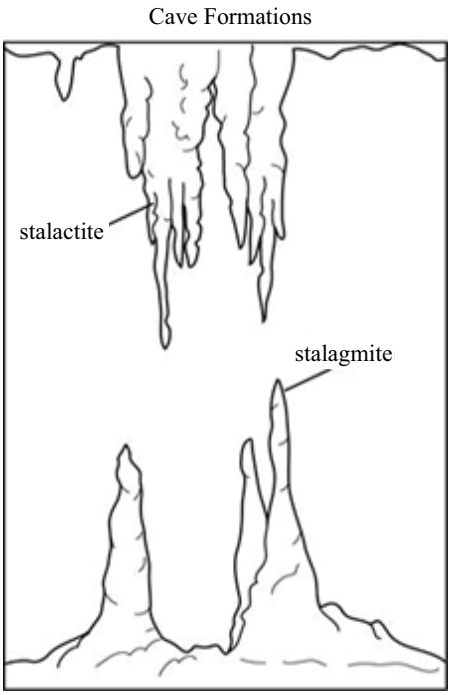
- **Accessible, Non-biased Items**

  DRC conducted both internal and external reviews of items and test specifications to ensure that they did not create barriers because of lack of sensitivity to disability, culture, or other subgroups. Items and test specifications were developed by a team of individuals who understand the varied characteristics of items that might create difficulties for any group of students. Accessibility is incorporated as a primary dimension of test specifications, so accessibility was woven into the fabric of the test rather than added after the fact. The following examples show two graphics with the same construct, example 1 being less accessible and example 2 being more accessible.

Example 1 – Less Accessible:



Example 2 – More Accessible:



- **Amenable to Accommodations**

  Even though items on universally designed assessments are accessible for most students, there are some students who continue to need accommodations. This essential element of a universally designed assessment requires that the test is compatible with accommodations and a variety of widely used adaptive equipment and assistive technology. (See the section on Assessment Accommodations later in Chapter Four.)

- **Simple, Clear, and Intuitive Instructions and Procedures**

  Assessment instructions should be easy to understand, regardless of a student's experience, knowledge, language skills, or current concentration level. Questions that are posed using complex language can invalidate the test if students cannot understand how they are expected to respond to a question. To meet this guideline, directions and questions were prepared in simple, clear, and understandable language that underwent multiple reviews.

- **Maximum Readability and Comprehensibility**

  A variety of guidelines exist to ensure the maximum readability and comprehensibility of a test. These features go beyond what is measured by readability formulas. Readability and comprehensibility are affected by many factors, including student background, sentence difficulty, text organization, and others. All of these features were considered as item text was developed.

  Plain language is a concept now being highlighted in research on assessments. Plain language has been defined as language that is straightforward and concise. The following strategies for editing text to produce plain language were used during the editing process of the new PSSA items:

  - Reduction of excessive length
  - Use of common words
  - Avoidance of ambiguous words
  - Avoidance of irregularly spelled words
  - Avoidance of proper names

- Avoidance of inconsistent naming and graphic conventions
- Avoidance of unclear signals about how to direct attention

- **Maximum Legibility**

  Legibility is the physical appearance of text, the way that the shapes of letters and numbers enable people to read text easily. Bias can result when tests contain physical features that interfere with a student's focus on or understanding of the constructs that test items are intended to assess. A style guide developed and updated annually (DRC, 2004–2013) was utilized, with PDE approval, which included dimensions of style consistent with universal design.

GUIDELINES FOR UNIVERSALLY DESIGNED ITEMS

All test items written and reviewed adhered closely to the following guidelines for Universal Design. Item writers and reviewers used a checklist during the item development process to ensure that each aspect was attended to. For more information on the checklist, see the Universal Design: All Assessments section in Chapter Three of this report.

1. **Items measure what they are intended to measure.** Item writing training included ensuring that writers and reviewers had a clear understanding of Pennsylvania's Core Standards (ELA and mathematics) or Academic Standards (science) and the Assessment Anchors. During all phases of test development, items were presented with content-standard information to ensure that each item reflected the intended Assessment Anchor. Careful consideration of the content standards was important in determining which skills involved in responding to an item were extraneous and which were relevant to what was being tested. In certain types of items an additional skill is necessary, such as the mathematics test, which requires the student to read.
2. **Items respect the diversity of the assessment population.** To develop items that avoid content that might unfairly advantage or disadvantage any student subgroup, item writers, test developers, and reviewers were trained to write and review items for issues of bias, fairness, and sensitivity. Training also included an awareness of, and sensitivity to, issues of cultural and regional diversity.
3. **Items have a clear format for text.** Decisions about how items are presented to students must allow for maximum readability for all students. Appropriate fonts and point sizes were employed with minimal use of italics, which is far less legible and is read considerably more slowly than standard typeface. Captions, footnotes, keys, and legends were at least a 12-point size.[1] Legibility was enhanced by sufficient spacing between letters, words, and lines. Blank space around paragraphs and between columns and staggered right margins were used.
4. **Stimuli and items have clear pictures and graphics.** When pictures and graphics were used, they were designed to provide essential information in a clear and uncluttered manner. Illustrations were placed directly next to the information to which they referred, and labels were used where possible. Sufficient contrast between background and text, with minimal use of shading, increased readability for students with visual impairments. Color was not used to convey important information.
5. **Items have concise and readable text.** Linguistic demands of stimuli and items can interfere with a student's ability to demonstrate knowledge of the construct being assessed. During item writing and review, the following guidelines were used.
   - Simple, clear, commonly-used words were used whenever possible.
   - Extraneous text was omitted.
   - Vocabulary and sentence complexity were appropriate for the grade level being assessed.
   - Technical terms and abbreviations were used only if they were related to the content being measured.
   - Definitions and examples were clear and understandable.
   - Idioms were avoided unless idiomatic speech was being assessed.
   - The questions to be answered were clearly identifiable.

[1] While font size follows specific requirements during online setup of an assessment, the screen resolution used at the local level can impact whether the effective font size is visible to the student.

6. **Items allow changes to format without changing meaning or difficulty.** A Braille version of the PSSA was available at each assessed grade. Attention was given to using items that allow for Braille. Specific accommodations were permitted, such as signing to a student, the use of oral presentation under specified conditions, and the use of various assistive technologies. Spanish versions of the PSSA mathematics and PSSA science tests were available for use by English Learners who would benefit from this accommodation. In the online format, permitted accommodations included text-to-speech audio, a color overlay, contrasting text options, and American Sign Language videos.
7. **The test has an overall appearance that is clean and organized.** Images, pictures, and text that may not be necessary (e.g., sidebars, overlays, callout boxes, visual crowding, shading) and that could be potentially distracting to students were avoided. Also avoided were purely decorative features that did not serve a purpose. Information was organized in a left-right, top-bottom format.

ITEM DEVELOPMENT

DRC worked closely with the Pennsylvania Department of Education to help ensure that PSSA tests complied with nationally recognized Principles of Universal Design. The implementation of accommodations on large-scale statewide assessments for students with disabilities was supported in the development of the PSSA. In addition to the Principles of Universal Design described in the Pennsylvania Technical Report, DRC applied to each content area assessment the standards for test accessibility described in *Tests Access: Making Tests Accessible for Students with Visual Impairments—A Guide for Test Publishers, Test Developers, and State Assessment Personnel* (Allman, 2004). To this end, DRC embraced the following precepts:

Test directions were carefully worded to allow for alternate responses to constructed-response (e.g., open-ended or short-answer) questions.

- During item and bias reviews, test committee members were made aware of the Principles of Universal Design and of issues that might adversely affect students with disabilities, with the goal of ensuring that PSSA tests were bias-free for all students.
- With the goal of ensuring that the PSSA tests are accessible to the widest range of diverse student populations, PDE instructed DRC to limit item types that were difficult to format in Braille and that might become distorted when published in large print. DRC was instructed to limit the following on the PSSA.
    - Mathematics: Complicated tessellations; charts or graphs that extended beyond one page
    - Reading: Graphics and illustrations that were not germane to the content presented
    - All content areas: Unnecessary boxes and framing of text, unless enclosing the text provided necessary context for the student; use of italics (limited to only when it was absolutely necessary, such as with variables)

ITEM FORMATTING

For all content areas, DRC formatted PSSA tests to maximize accessibility for all students by using text that was in a size and font style easily readable. DRC limited shading, graphics, charts, and the number of items per page so that there was sufficient white space on each page. Whenever possible, DRC ensured that graphics, pictures, diagrams, charts, and tables were positioned on the page with the associated test items. DRC used high contrast for text and background where possible to convey pertinent information. Tests were published on dull-finish paper to avoid the glare encountered on glossy paper. DRC paid close attention to the binding of the PSSA test booklets to ensure that they laid flat for two-page viewing and ease of reading and handling.

DRC ensured consistency across PSSA assessments by following these Principles of Universal Design:

- High contrast and clarity was used to convey detailed information.
- Typically, shading was avoided; when necessary for content purposes, 10 percent screens were used as the standard.
- Overlaid print on diagrams, charts, and graphs was avoided.
- Charts, graphs, diagrams, and tables were clearly labeled with titles and with short descriptions where applicable.
- Only relevant information was included in diagrams, pictures, and graphics.
- Symbols used in keys and legends were meaningful and provided reasonable representations of the topics they depicted.
- Pictures that required physical measurement were true to size.

ASSESSMENT ACCOMMODATIONS

While universally designed assessments provide for participation of the widest range of students, many students require accommodations in order to participate in the regular assessment. Clearly, the intent of providing accommodations for students is to ensure that students are not unfairly disadvantaged during testing and that the accommodations used during instruction, if appropriate, are made available as students take the test. The literature related to assessment accommodations is still evolving and often focuses on state policies regulating accommodations rather than on providing empirical data that supports the reliability and validity of the use of accommodations. On a yearly basis, the Pennsylvania Department of Education examines accommodations policies and current research to ensure that valid, acceptable accommodations are available for students. Accommodations manuals, *Accommodations Guidelines* and *Accommodations Guidelines for English Learners*, were developed for use with the PSSA. The PDE guideline manuals can be accessed by going to www.education.pa.gov.

In addition, Spanish-language versions, translated from the original English versions, were made available for both the mathematics and science PSSAs. The Spanish-translation versions are discussed in Chapter Six.

CHAPTER FIVE: EMBEDDED FIELD TEST

Every PSSA administration, field-test items are embedded in PSSA's operational forms. The main purposes of field-testing items prior to future operational use are (a) to calculate item statistics, (b) to determine whether items meet the criteria with respect to statistical properties for future operational use, and (c) to obtain item parameters for pre-equating purposes. In comparison to standalone field testing, embedded field testing allows for more accurate item statistics and item parameters by alleviating concerns of whether students may perceive differences between field-test and operational items. The embedded-field-test approach allows item parameters to be used for future pre-equating purposes and is based on the assumption that students should be equally motivated to take the operational and embedded field-test items, especially when they are not aware of which item is a field-test item. To minimize item context and item position effects (e.g., fatigue and lack of motivation), field-test items were interspersed within the operational sections. With this design, students have a lesser chance of knowing the field-test item positions.

The 2024 PSSA test forms contained common operational items that were identical on all forms along with embedded field-test items. In most instances, the field-test items were unique embedded items within a form; however, there were instances in which an embedded field-test item appeared on more than one form. More information on the field-test designs for all subjects can be found in the content-specific portions of Chapter Three. In general, the field test for each year represents about 50% of the following year's operational form. For example, items from the field test in 2018 represented about half of the operational form in 2019. This chapter presents information about the 2024 embedded field test, including classical item analyses, differential item functioning (DIF) analyses, identification of items for data review, and outcomes from data review.

CLASSICAL ITEM ANALYSIS

Classical item analyses of field-test items are conducted in order to assess the quality of the field-test items and to identify items for data review. Specifically, item difficulty and item-total correlations (the relationship between answering an item correctly and total test score) are estimated for each item, for each option for selected-response (SR) items, and for each score point for multi-point items. SR items include multiple-choice (MC) items for ELA, mathematics, and science and evidence-based selected-response (EBSR) items and MC items for ELA.

ITEM DIFFICULTY

At the most general level, an item's difficulty is indicated by its mean score in some specified group (e.g., grade level).

$$\bar{x} = \frac{1}{n} \cdot \sum_{i=1}^{n} x_i$$

In the mean score formula above, the individual item scores (x_i) are summed and then divided by the total number of students (n). For multiple-choice items, student scores are represented by 0s and 1s (0 = wrong, 1 = right). With 0–1 scoring, the equation above also represents the number of students correctly answering the item divided by the total number of students. Therefore, this is also the proportion correct for the item, or the p-value. In theory, p-values can range from 0.00[1] to 1.00 on the proportion-correct scale. For example, if an item has a p-value of 0.89, it means 89 percent of the students answered the item correctly. Additionally, this value might also suggest that the item was relatively easy and/or that the students who attempted the item were relatively high achievers. In other words, item difficulty and student ability are somewhat confounded.

For open-ended (OE) items, mean scores can range from the minimum possible score (usually zero) to the maximum possible score (e.g., four points in the case of some mathematics, ELA, and science items). Sometimes a pseudo p-value is provided for an OE item. This is done by dividing the mean item score by the maximum possible item score.

[1] For MC items with four response options, pure random guessing would lead to an expected p-value of 0.25.

The minimum and maximum extremes of the difficulty scale are typically not seen in applied practice. However, understanding the extremes helps illustrate that relatively lower values correspond to more difficult items and that relatively higher values correspond to easier items. (As a result, some assert that this index would be more accurately referred to as the item's easiness.)

Item difficulty is an important consideration for the PSSA tests because of the range of achievement levels of students in Pennsylvania (Below Basic, Basic, Proficient, and Advanced). Items that are either very hard or very easy provide little information about student differences in achievement. However, an item answered correctly by a high percentage of students would suggest that the knowledge or skill the item taps has been mastered by most students. Conversely, an item answered incorrectly by a high percentage of students would suggest few students have mastered the knowledge or skill the item taps. On a standards-referenced test like the PSSA, a test development goal is to include a wide range of item difficulties.

ITEM DISCRIMINATION

At the most general level, item discrimination[2] indicates an item's ability to differentiate between high and low achievers. It is expected that students with high ability (i.e., those who perform well on the PSSA overall) would be more likely to answer any given PSSA item correctly, while students with low ability (i.e., those who perform poorly on the PSSA overall) would be less likely to answer the same item correctly. For the PSSA tests, Pearson's product-moment correlation coefficient between item scores and test scores is used to indicate discrimination. (As commonly practiced, DRC removes the item score from the total score such that the resulting correlations will not be spuriously high.) The correlation coefficient can range from -1.0 to +1.0. If this expectation is met (i.e., high-ability students tend to answer the item correctly while low-ability students answer the item incorrectly), the correlation between the item score and the total test score will be both positive and noticeably large in its magnitude (i.e., well above zero), meaning the item is a good discriminator between high- and low-ability students. This should be the case for all PSSA operational test items.

In summary, the correlation will be positive in value when the mean test score of the students answering the item correctly is higher than the mean test score of the students answering the item incorrectly.[3] In other words, the relationship between student test performance and item performance is expected to be consistent. However, an interaction can exist between item discrimination and item difficulty. Items answered correctly (or incorrectly) by a large proportion of examinees (i.e., the items have extreme *p*-values) can have reduced power to discriminate, and thus, can have lower correlations.

CLASSICAL ITEM ANALYSIS RESULTS

Table 5–1 provides the summary statistics for the difficulty and discrimination for the 2024 field-test items with respect to subject, grade, and item type (see Chapter Eleven for summary statistics for operational items). There is a range of *p*-values across all subjects and grade levels, where mean *p*-values were between 0.43 and 0.58 for SR items, between 0.30 and 0.56 for OE items, and between 0.39 and 0.45 for TE items. The mean item-total correlations were between 0.32 and 0.43 for SR items,between 0.54 and 0.74 for OE items, and between 0.33 and 0.36 for TE items (see Table 5–1).

[2] As noted earlier, the discrimination index for PSSA dichotomous MC items is typically referred to as the point-biserial correlation coefficient. For OE items, the term item-test correlation is sometimes used.

[3] It is legitimate to view the point-biserial correlation as a standardized mean difference. A positive value indicates that students who chose that response had a higher mean score than the average student; a negative value indicates that students who chose that response had a lower-than-average mean score.

Table 5–1. Summary Statistics of Difficulty and Discrimination by Subject, Grade and Item Type

Subject	Grade	Item Type	N	Mean *p*-val.	Min *p*-val.	Median *p*-val.	Max *p*-val.	Mean I-T Corr.	Min I-T Corr.	Median I-T Corr.	Max I-T Corr.
Mathematics	3	OE	9	0.45	0.37	0.46	0.52	0.74	0.67	0.74	0.80
Mathematics	3	SR	72	0.58	0.20	0.60	0.91	0.43	0.21	0.45	0.61
Mathematics	4	OE	9	0.37	0.18	0.39	0.48	0.72	0.64	0.72	0.76
Mathematics	4	SR	72	0.57	0.15	0.60	0.89	0.41	-0.17	0.45	0.62
Mathematics	5	OE	9	0.36	0.20	0.32	0.50	0.69	0.56	0.71	0.75
Mathematics	5	SR	72	0.51	0.16	0.52	0.82	0.41	0.02	0.46	0.57
Mathematics	6	OE	9	0.30	0.16	0.30	0.44	0.72	0.62	0.72	0.77
Mathematics	6	SR	72	0.45	0.10	0.43	0.79	0.39	-0.05	0.40	0.65
Mathematics	7	OE	9	0.30	0.18	0.29	0.45	0.73	0.67	0.73	0.78
Mathematics	7	SR	72	0.48	0.16	0.47	0.87	0.41	0.07	0.43	0.60
Mathematics	8	OE	9	0.34	0.25	0.33	0.43	0.74	0.70	0.75	0.79
Mathematics	8	SR	72	0.43	0.15	0.43	0.75	0.36	-0.04	0.41	0.59
ELA	3	OE	9	0.49	0.45	0.49	0.53	0.61	0.56	0.62	0.66
ELA	3	SR	114	0.57	0.24	0.57	0.88	0.40	-0.07	0.40	0.62
ELA	4	OE	9	0.49	0.46	0.49	0.53	0.61	0.58	0.60	0.64
ELA	4	SR	115	0.55	0.11	0.57	0.93	0.36	-0.08	0.40	0.64
ELA	5	OE	9	0.49	0.46	0.49	0.51	0.59	0.55	0.60	0.62
ELA	5	SR	115	0.57	0.08	0.56	0.95	0.35	-0.11	0.36	0.66
ELA	6	OE	9	0.52	0.50	0.52	0.55	0.60	0.57	0.60	0.63
ELA	6	SR	114	0.55	0.22	0.54	0.89	0.34	-0.02	0.36	0.57
ELA	7	OE	9	0.55	0.52	0.54	0.58	0.63	0.59	0.62	0.67
ELA	7	SR	111	0.56	0.19	0.56	0.91	0.36	0.01	0.39	0.62
ELA	8	OE	9	0.56	0.52	0.56	0.60	0.63	0.58	0.64	0.66
ELA	8	SR	112	0.56	0.22	0.57	0.92	0.35	0.06	0.37	0.64
Science	4	OE	12	0.45	0.21	0.48	0.70	0.54	0.42	0.54	0.66
Science	4	SR	94	0.49	0.18	0.48	0.91	0.34	-0.01	0.36	0.52
Science	4	TE	24	0.45	0.13	0.36	0.92	0.33	0.07	0.31	0.52
Science	8	OE	12	0.44	0.22	0.42	0.70	0.56	0.47	0.58	0.65
Science	8	SR	115	0.46	0.16	0.46	0.77	0.32	-0.08	0.36	0.54
Science	8	TE	24	0.39	0.13	0.37	0.81	0.36	0.11	0.36	0.65

Note. I-T Corr. is the item-test score correlation.

DIFFERENTIAL ITEM FUNCTIONING

Differential item functioning (DIF) occurs when examinees with the same ability level but different group memberships do not have the same probability of answering an item correctly. When the probability differs, it is important for content experts to review the relevant items for any potential *item bias*. It is important to note that, as a statistical concept, DIF is different from item bias. DIF detects a difference in performance after controlling for student ability, whereas bias is a content issue that can arise in situations where something other than the intended construct of measurement affects the probability of a correct response for a particular group. For example, bias is likely present when an item presents negative group stereotypes that draw the attention of the examinee, uses non-construct-relevant language that is more familiar to one subpopulation than to another, or is presented in a non-construct-relevant format that disadvantages certain learning styles. While the source of item bias can be plain to trained judges, DIF may have no clear cause. In such cases, something other than bias, including construct-relevant content, may be explaining the differential performance on the item. Flagging items with DIF provides an opportunity for reviewers to assess and correct potential bias, but DIF does not necessarily mean that bias is present.

LIMITATIONS OF STATISTICAL DETECTION

No statistical procedure should be used as a substitute for rigorous, hands-on reviews by content and bias specialists. The statistical results can help organize the review so the effort is concentrated on the most problematic cases. Further, no items should be automatically rejected simply because a statistical method flagged them or accepted because they were not flagged.

Statistical detection of DIF is also not an exact science. There have been a variety of methods proposed for detecting DIF, but no single statistic can be considered either necessary or sufficient. Different methods are more or less successful but can also detect DIF at different rates. No analysis can guarantee that a test is free of bias, but thoughtful item development and field-test analysis can prevent potentially biased items from unfairly impacting student scores.

A fundamental shortcoming of all statistical methods used in DIF evaluation is that all are intrinsic to the test being evaluated. If a test is unbiased overall but contains one or two DIF items, any method can identify DIF. However, because all current methods use total test performance as the measure on which to control for group abilities, a test with all DIF items will not be able to separate DIF effects from differences in achievement on the test.

MANTEL-HAENSZEL PROCEDURE FOR DIFFERENTIAL ITEM FUNCTIONING

For MC items, the Mantel-Haenszel procedure (Mantel & Haenszel, 1959) for detecting DIF is a commonly used technique in educational testing. It does not depend on the application or the fit of any specific measurement model. However, it does have significant philosophical overlap with the Rasch model since it uses a test's total score for the analysis.

The procedure as implemented by DRC contrasts a focal group with a reference group. While it makes no practical difference in the analysis which group is defined as the focal group, the group most apt to be disadvantaged by a biased measurement is typically defined as the focal group. In these analyses, the focal groups were female for gender-based DIF and Black for ethnicity-based DIF; reference groups were male and White, respectively. The Mantel-Haenszel (MH) statistic for each item is computed from a contingency table. It has two groups (focal and reference) and two outcomes (right and wrong). The ability groups are defined using the test score distribution for the total examinee population.

The basic MH statistic is a single degree of freedom chi-square that compares the observed number in each cell to the expected number. The expected counts are computed to ensure that the analysis is not confounded with differences in the achievement level of the two groups.

For OE and TE items, a comparable statistic is computed based on the standardized mean difference (SMD) (Dorans, Schmitt, & Bleistein, 1992), which is computed as the differences in mean scores for the focal and reference groups if both groups had the same score distribution.

To assist the review committees in interpreting the analyses, the items are assigned a severity code (A, B, or C) based on the magnitude of the MH statistic, and a direction (minus or plus) based on the direction of the MH statistic. Items classified as A+ or A- have little or no statistical indication of DIF. Items classified as B+ or B- have some indication of DIF but may be judged to be acceptable for future use. Items classified as C+ or C- have strong evidence of DIF and should be reviewed and possibly rejected from the eligible item pool. The plus sign indicates that the item favors the focal group and a minus sign indicates that the item favors the reference group.

RESULTS AND OBSERVATIONS

DIF analyses were conducted on the 2024 field-test items. The number of items from each subject and grade that were assigned to each severity code is shown in Table 5–2 for SR items, Table 5–3 for OE/TDA items, and Table 5–4 for TE items. Results from DIF analyses are provided for gender (male/female), ethnicity (white/black) and mode of administration (paper/online). Few SR items were identified as having moderate (B) or severe (C) DIF for gender, ethnicity, or mode of administration. The SR results indicate that there is a balance in the number of items with moderate DIF favoring males and females; however, these results do not hold true for ethnicity.

Table 5–2A. DIF Summary for Male/Female—SR Items*

Subject	Grade	A+	A-	B+	B-	C+	C-	Total
Mathematics	3	28	39	1	3	1	0	72
Mathematics	4	35	35	0	2	0	0	72
Mathematics	5	29	42	0	1	0	0	72
Mathematics	6	38	30	0	4	0	0	72
Mathematics	7	34	35	1	2	0	0	72
Mathematics	8	34	36	0	1	0	1	72
ELA	3	47	66	0	0	0	1	114
ELA	4	69	46	0	0	0	0	115
ELA	5	67	48	0	0	0	0	115
ELA	6	52	55	1	4	0	2	114
ELA	7	66	43	0	2	0	0	111
ELA	8	58	44	4	3	0	3	112
Science	4	55	39	0	0	0	0	94
Science	8	58	53	1	3	0	0	115

*SR items include multiple-choice items for ELA, mathematics, and science and multiple-choice and evidence-based selected-response items for ELA.

Table 5–2B. DIF Summary for White/Black—SR Items*

Subject	Grade	A+	A-	B+	B-	C+	C-	Total
Mathematics	3	20	52	0	0	0	0	72
Mathematics	4	23	47	0	2	0	0	72
Mathematics	5	18	54	0	0	0	0	72
Mathematics	6	23	49	0	0	0	0	72
Mathematics	7	25	47	0	0	0	0	72
Mathematics	8	21	48	0	3	0	0	72
ELA	3	29	84	0	0	0	1	114
ELA	4	39	72	0	4	0	0	115
ELA	5	44	68	0	3	0	0	115
ELA	6	34	77	0	3	0	0	114
ELA	7	38	70	0	2	0	1	111
ELA	8	40	68	0	4	0	0	112
Science	4	32	62	0	0	0	0	94
Science	8	60	54	0	1	0	0	115

*SR items include multiple-choice items for ELA, mathematics, and science and multiple-choice and evidence-based selected-response items for ELA.

Table 5–2C. DIF Summary for Paper/Online—SR Items*

Subject	Grade	A+	A-	B+	B-	C+	C-	Total
Mathematics	3	51	21	0	0	0	0	72
Mathematics	4	49	23	0	0	0	0	72
Mathematics	5	51	21	0	0	0	0	72
Mathematics	6	40	32	0	0	0	0	72
Mathematics	7	42	30	0	0	0	0	72
Mathematics	8	31	40	0	1	0	0	72
ELA	3	68	44	2	0	0	0	114
ELA	4	67	43	4	0	1	0	115
ELA	5	62	52	0	1	0	0	115
ELA	6	59	50	4	1	0	0	114
ELA	7	54	56	0	0	0	1	111
ELA	8	68	40	4	0	0	0	112
Science	4	22	48	0	1	0	0	71
Science	8	44	47	0	2	0	0	93

*SR items include multiple-choice items for ELA, mathematics, and science and multiple-choice and evidence-based selected-response items for ELA.

Table 5–3A. DIF Summary Male/Female—OE Items*

Subject	Grade	A+	A-	B+	B-	C+	C-	Total
Mathematics	3	7	1	1	0	0	0	9
Mathematics	4	8	0	1	0	0	0	9
Mathematics	5	5	3	1	0	0	0	9
Mathematics	6	5	4	0	0	0	0	9
Mathematics	7	7	0	2	0	0	0	9
Mathematics	8	6	2	1	0	0	0	9
ELA	3	5	0	3	0	1	0	9
ELA	4	4	0	5	0	0	0	9
ELA	5	4	0	5	0	0	0	9
ELA	6	7	0	2	0	0	0	9
ELA	7	3	0	6	0	0	0	9
ELA	8	2	0	5	0	2	0	9
Science	4	9	2	1	0	0	0	12
Science	8	10	1	1	0	0	0	12

*OE items include open-ended items for mathematics, science, and ELA grade 3 and text-dependent analysis items for ELA grades 4–8.

Table 5–3B. DIF Summary White/Black—OE Items*

Subject	Grade	A+	A-	B+	B-	C+	C-	Total
Mathematics	3	0	4	0	1	0	0	9
Mathematics	4	2	4	0	0	0	1	9
Mathematics	5	1	5	0	0	0	1	9
Mathematics	6	2	3	0	4	0	0	9
Mathematics	7	0	8	0	0	0	0	9
Mathematics	8	1	7	0	1	0	0	9
ELA	3	4	3	0	0	0	0	9
ELA	4	0	8	0	0	0	1	9
ELA	5	0	6	0	2	0	1	9
ELA	6	0	2	0	4	0	3	9
ELA	7	0	6	0	2	0	1	9
ELA	8	0	7	0	2	0	0	9
Science	4	1	5	0	0	0	0	12
Science	8	4	6	0	2	0	0	12

*OE items include open-ended items for mathematics, science, and ELA grade 3 and text-dependent analysis items for ELA grades 4–8.

Table 5–3C. DIF Summary Paper/Online—OE Items*

Subject	Grade	A+	A-	B+	B-	C+	C-	Total
Mathematics	3	4	5	0	0	0	0	9
Mathematics	4	3	5	1	0	0	0	9
Mathematics	5	3	5	1	0	0	0	9
Mathematics	6	3	6	0	0	0	0	9
Mathematics	7	6	3	0	0	0	0	9
Mathematics	8	3	6	0	0	0	0	9
ELA	3	0	4	0	5	0	0	9
ELA	4	2	7	0	0	0	0	9
ELA	5	5	3	1	0	0	0	9
ELA	6	3	5	0	1	0	0	9
ELA	7	5	4	0	0	0	0	9
ELA	8	3	6	0	0	0	0	9
Science	4	5	5	0	2	0	0	12
Science	8	7	3	1	0	1	0	12

*OE items include open-ended items for mathematics, science, and ELA grade 3 and text-dependent analysis items for ELA grades 4–8.

Table 5–4A. DIF Summary Male/Female—TE Items

Subject	Grade	A+	A-	B+	B-	C+	C-	Total
Science	4	6	18	0	0	0	0	24
Science	8	6	14	0	2	0	2	24

Table 5–4B. DIF Summary White/Black—TE Items

Subject	Grade	A+	A-	B+	B-	C+	C-	Total
Science	4	12	11	0	1	0	0	24
Science	8	6	17	0	0	0	1	24

CRITERIA FOR IDENTIFYING ITEMS

As previously discussed, all field-test items were analyzed statistically using conventional item-analysis methods. For SR items, classical item statistics included the corrected point-biserial correlation (Pt. Bis.) for the correct and incorrect responses (distractors), percent correct (*p*-value), and the percent responding to incorrect responses. For constructed-response (CR) items (including open-ended questions, short-answer questions, and text-dependent analysis questions) and technology-enhanced (TE), the statistical indices included the item-test correlation, the point-biserial correlation for each score point, the percent of responses at each score point, and the percent of non-scoreable responses.

In general, more capable students are expected to respond correctly to easy items and less capable students are expected to respond incorrectly to difficult items. If either of these situations does not occur, the item will be reviewed by DRC test development staff and committees of Pennsylvania educators to determine the nature of the problem and the characteristics of the students affected. The primary way of detecting such conditions is through the point-biserial correlation coefficient for dichotomously scored items (MC) and the item-total correlation for polytomously scored items (EBSR and CR). In each case the statistic will be positive if the total test mean score is higher for the students who respond correctly to MC items (or attain a higher CR item score) and negative when the reverse is true.

The following set of criteria was used to identify items for additional review.

For an MC item to be flagged, the criteria included any of the following:

- Percent correct (*p*-value) less than 0.3 or greater than 0.9
- Point-biserial correlation for the correct response less than 0.25 for ELA and mathematics and less than 0.20 for science
- Point-biserial correlation for any incorrect response greater than 0.0
- Percent responding to any incorrect responses greater than the *p*-value
- Gender, ethnic, or mode DIF code of either C- or C+

For an EBSR item to be flagged, the criteria included any of the following:

- *p*-value less than 0.3 or greater than 0.9
- Part One point-biserial correlation for the correct response less than 0.25
- Part One point-biserial correlation for any incorrect response greater than 0.0
- Part One percent responding to any incorrect responses greater than Part One *p*-value
- Gender, ethnic, or mode DIF code of either C- or C+
- Score proportion less than 0.05

For a TE or CR item to be flagged, the criteria included any of the following:

- *p*-value less than 0.3 or greater than 0.9 for ELA and mathematics and *p*-value less than 0.1 and greater than 0.9 for science
- Point-biserial correlation less than 0.25
- Score proportion less than 0.05
- Gender, ethnic, or mode DIF code of either C- or C+

REVIEW OF ITEMS WITH DATA

In the preceding section, it was stated that test development content-area specialists used certain statistics from classical item analyses and DIF analyses of the 2024 field test to identify items for review by Pennsylvania educators. Items not identified for this review had good statistical characteristics and, consequently, were entered into the eligible pool for future item selection. Likewise, items of extremely poor statistical quality were regarded as unacceptable and needed no additional review. DRC content-area test development specialists and DRC psychometric specialists identified the remaining items for further review by a committee of Pennsylvania educators. The intent was to capture all items that needed a closer review; thus, the criteria employed tended to over-identify rather than under-identify items.

The review of the items with associated data was conducted by over 50 Pennsylvania educators (teachers and PDE staff) broken out into subject-area and/or grade-level or grade-span committees. The review for mathematics and ELA grades 3–8 and science grades 4 and 8 took place in August 2024. In these sessions, committee members were first trained by a representative from DRC's psychometrics staff with regard to the statistical indices used in item evaluation. This was followed by a discussion with examples concerning reasons that an item might be retained regardless of the statistics. The committee review process involved a brief exploration of possible reasons for the statistical profile of an item (e.g., possible bias, grade appropriateness, instructional issues) and a decision regarding acceptance. DRC content-area test development specialists facilitated the review of the items. Each committee reviewed the pool of field-tested items and made recommendations on each item and/or scenario/passage. Further discussion on how this information was used is covered in Chapter Six. Data review details and results are shown in Table 5–4.

Table 5–5. 2024 Data Review Committee Results

Subject	Grade	Total No. of Items	Reviewed SR*	Reviewed OE*	Reviewed TE	Reviewed DIF only	Reviewed Total	Reviewed % of Total	No. of Items Rejected by Committee	% of Items Rejected by Committee	No. of Items Classified as Rejected **	% of Items Classified as Rejected **
Mathematics	3	81	11	2	0	0	13	16.05%	5	6.17%	6	7.41%
Mathematics	4	81	16	4	0	1	20	24.69%	6	7.41%	7	8.64%
Mathematics	5	81	20	5	0	1	25	30.86%	9	11.11%	12	14.81%
Mathematics	6	81	20	5	0	0	25	30.86%	9	11.11%	10	12.35%
Mathematics	7	81	20	5	0	0	25	30.86%	11	13.58%	13	16.05%
Mathematics	8	81	29	4	0	1	33	40.74%	16	19.75%	18	22.22%
ELA	3	123	11	4	0	1	15	12.20%	4	3.25%	4	3.25%
ELA	4	124	30	8	0	1	38	30.65%	13	10.48%	13	10.48%
ELA	5	124	30	9	0	0	39	31.45%	14	11.29%	14	11.29%
ELA	6	123	30	9	0	0	39	31.71%	22	17.89%	22	17.89%
ELA	7	120	32	3	0	1	35	29.17%	12	10.00%	12	10.00%
ELA	8	121	35	4	0	0	39	32.23%	16	13.22%	16	13.22%
Science	4	106	22	1	7	0	30	28.30%	4	3.77%	5	4.72%
Science	8	128	36	3	5	3	44	34.38%	0	0.00%	6	4.69%
Totals	N/A	1422	342	66	12	9	420	29.54%	141	9.92%	158	11.11%

*SR includes multiple-choice items and EBSR items; OE includes open-ended items for mathematics, science, and ELA grade 3 and text-dependent analysis items for ELA grades 4–8.
**Items classified as “Rejected” from 2024 field test (all sources: data review committee, PDE, and DRC)

CHAPTER SIX: OPERATIONAL FORMS CONSTRUCTION FOR 2024

FINAL SELECTION OF ITEMS AND 2024 PSSA FORMS CONSTRUCTION

When the final selection of items for the operational 2024 test was ready to begin, the candidate items that emerged, including those from the spring 2023 field test, had undergone multiple reviews, including:

- Reviews by DRC content-area test development specialists and curriculum specialists to ensure that all items were properly aligned with content standards
- Formal bias, fairness, and sensitivity review by the Bias, Fairness, and Sensitivity Committee consisting of a multi-ethnic group of men and women having expertise with students with special needs and English Learners
- Formal review by the content committees consisting of Pennsylvania educators, including teachers as well as district personnel
- PDE review
- Item data review by members of the PDE subject-area teacher committees

The item and bias reviews are detailed in Chapter Three. The results of the data review are summarized in Chapter Five.

The end product of the above process was an item status designation for each field-tested item. All items having an item status code of Acceptable/Active were candidates to be selected for the 2024 PSSA. To have an item status code of Acceptable/Active meant that the item met the following criteria:

- Appropriately aligned with its designated Assessment Anchor Content Standard (Assessment Anchor) and sub-classifications
- Acceptable in terms of bias/fairness/sensitivity issues, including differential item functioning (for gender and ethnicity)
- Acceptable in terms of psychometric standards, including a special review of flagged items

Next, all relevant information regarding the acceptable items, including associated graphics, was entered into the item banking system known as IDEAS (Item Development and Education Assessment System). From IDEAS and other database sources, Microsoft Excel files were created for each content area at each grade. These files contained all relevant content codes and statistical characteristics. IDEAS also created an item card displaying each acceptable item, any associated graphic, and all relevant content codes and item statistics for use by the content-area test development specialists and psychometric services staff.

DRC test development specialists reviewed the test design blueprint, including the number of items per strand for each content-area test. Special considerations, such as calculator use and manipulatives, were noted.

Psychometricians provided content-area test development specialists with an overview of the psychometric guidelines for forms construction.

Senior DRC content-area test development specialists reviewed all items in the operational pool to make an initial selection for common (core) positions according to test blueprint requirements and psychometric guidelines. Changes to items were not encouraged since alterations could affect how an item might perform on subsequent testing.

For the common items, this meant that the combination of SR and CR items would yield the appropriate range of points while tapping an appropriate variety of the Assessment Anchors and related Eligible Content within each Reporting Category. Items selected in the first round were examined with regard to how well they went together as a set. Of particular concern were the following:

- One item providing cues as to the correct answer to another item
- Context redundancy (e.g., mathematics items with a sports context)

- Presence of clang (distractors not unique from one another)
- Diversity of names and artwork for gender and ethnicity

The first round of items was then evaluated for statistical features such as an acceptable point-biserial correlation and whether correct answers were distributed equally—that is, whether approximately 25 percent of correct answers appeared in each of the four possible positions (A, B, C, or D). Selected items that were deemed psychometrically less advantageous in contrast to the overall psychometric characteristics of the core resulted in a search by the senior reviewer for suitable replacements. At this point, the second round of items was analyzed. If necessary, this iterative process between content-based selections and statistical properties continued in an effort to reach the best possible balance.

Once the recommendations were finalized for the core items they were submitted to PDE for review. Department staff provided feedback, which could be in the form of approval or recommendations for replacing certain items. Any item replacement was accomplished by the collective effort of the test development specialists, psychometricians, and PDE staff until final PDE approval was given. Once final PDE approval of the forms was given, PDE also participated in the construction and review of scrambled forms.

SPECIAL FORMS USED IN THE 2024 PSSA

SPANISH TRANSLATION OF THE MATHEMATICS AND SCIENCE ASSESSMENTS

Starting with the 2005 assessment, school personnel had the option of allowing Spanish-speaking students who had been enrolled in schools in the United States for less than three years to respond to a Spanish version of the PSSA for mathematics. In 2009, a Spanish version was also added for the science component of the PSSA. The original translation of the items and the *Directions for Administration Manual* was completed by Second Language Testing, Incorporated (SLTI). SLTI used translators with varying cultural and regional backgrounds to create the Spanish versions of the mathematics and science assessments. The translations were then reviewed and verified by DRC's internal Spanish group. As part of the internal review, a Spanish style guide is maintained to document Spanish word choice from administration to administration and across grades within an administration. After discussions with PDE and SLTI, the mathematics assessment for Grades 4–8 and the science assessment for Grades 4 and 8 were designed with a side-by-side format, that is, the English text and Spanish-translated text were printed on facing pages. The Spanish-translated text was on the left-hand side of the page and the original English text on the right-hand (facing) side.

The mathematics answer booklets for Grades 4–8 and the science answer booklets for Grades 4 and 8 were also presented in Spanish and English. In the case of mathematics, each open-ended item covered a total of four pages in the answer booklet. In the case of science, each open-ended item covered either two or four pages in the answer booklet, depending on the length of the original English-language item. In the case of four-page open-ended items, the first set of facing pages of an item was presented in Spanish. The second set of facing pages of an item was presented in the original English. Those students using this accommodated version of the mathematics assessment could write their answers on either the English language pages or on the translated Spanish language pages. Their answers could be written in English, Spanish, or a combination of both Spanish and English as all pages were evaluated and scored, and the highest possible scores from those combinations recorded for the students.

The mathematics scannable booklets for Grade 3 were presented in Spanish and English using a modified over/under format, with the Spanish presented directly above or to the left of the English. To assist the presentation of the two languages on the same page, the English portion was presented in italics and in a smaller font. Those students using this accommodated version of the mathematics assessment could also write their answers in English, Spanish, or a combination of both Spanish and English, with the highest possible scores from those combinations recorded for the students.

For the current Spanish forms, DRC utilized an outside vendor (Tri-Lin Integrated Services) for translations of PSSA mathematics and science items by using the style guide setup and continuously used since 2005. Once Tri-Lin has completed the initial translation of the entire set of materials, all translated material and the original English version are then sent to Language Services Consultants (LSC) for a third-party verification of the translation. LSC's review helps to ensure the equivalence of the original and translated assessments. When completed, the verified materials, along with any recommendations or questions, are passed back to DRC for processing.

Once Language Services Consultants (LSC) has adjudicated the initial translation completed by Victory Productions, the translated text is returned to DRC for final processing and typesetting. DRC has a Spanish translation team comprised of native Spanish-speaking translators and native English-speakers with formal education in Spanish. DRC's Spanish Team is supported by all content areas and their respective content leads in order to maintain the integrity of each translated item or passage. DRC conducts a minimum of five separate reads during the final preparation of the translated material. These reads include editorial reviews of items and forms and are used to polish language and eliminate any typographical errors.

An initial reading of items and passages is conducted individually by each member of the team. The team then reads, discusses, and edits the items as a group before sending the material to be entered into the item bank that houses Pennsylvania's test items (IDEAS). As part of the discussion and editing process, DRC's Spanish Team may also conduct an informational investigation, validating concepts within the translation related to specialized topics. Once the data entry is completed, DRC's Spanish Team confirms that the correct edits have been made and the items are read once again. After all newly-translated items have been edited and approved in this round of review, a PDF of the entire test form is produced. The Spanish Team then conducts a group review of the complete test form, coinciding with an independent review outside the team, making any edits that are necessary. Within each review, checks are performed to ensure accuracy of semantics, lexicon, syntax, and grammar.

Internal reviewers are instructed to address a number of issues when reviewing a translation, including the following:

- Are the stimulus and the item translated correctly?
- Are there inappropriate omissions in the translation?
- Are there inappropriate additions in the translation?
- Is there any wording that may not be comprehensible to speakers of a particular dialect? If so, the reviewer will enter an alternate wording in parentheses.
- Are standard item writing guidelines followed in the translated version?
- Are any options less or more attractive than in the English version? If so, the reviewer will suggest an alternate wording.
- Is the content of any item culturally insensitive or offensive? Is a substitute item required? Why?
- Is the wording of any item culturally insensitive or offensive?
- Is the language of the translation at the same register as the original?
- Is the language of the translation at an appropriate register for the grade level of the examinee?

Instructions for the appropriate use of these special forms are detailed in accommodation manuals titled *Accommodations Guidelines* and *Accommodations Guidelines for English Learners.*

AUDIO

For students requiring an auditory presentation accommodation, a text-to-speech synthesizer is available to students taking the online mode of test delivery. For each operational exam, one form was selected for the creation of the audio version. Special scripts are crafted, writing out each item, distractor, graphic, and directions to utilize the rich, synthesized voice features while accounting for specific nuances of the intended sounds. The resulting audio information is provided to students receiving the accommodation. Since additional software is required to generate the vocalization from the scripted text and since headphones are required to minimize disruptions within a computer lab setting, local school personnel generally must preplan to use the audio version in order to ensure that the student has a properly equipped computer and a proper setting.

BRAILLE, LARGE PRINT, AND VIDEO SIGN LANGUAGE

Students were able to respond to test materials that were available in Braille, large print, or Video Sign Language. At each grade level assessed, one form was selected for the creation of these accommodations.

The large print edition is a replication of the standard print form; 8.5×11 standard form is enlarged to an 11×17 page format to achieve a font size of approximately 18-point. A side-by-side verification is completed between the standard print and large print forms to ensure that the integrity of all formatting and graphics is maintained on the large print forms.

For Braille production, the final selected form is delivered to American Printing House for the Blind (APH) via APH's secure website. APH ensures that all tests are translated correctly and accurately by using a translator and a validator. After all Braille booklets are printed, APH conducts a quality assurance step to ensure all items are bound in order and directions are included. All Braille booklets are shipped from APH to DRC via UPS.

DRC applies a security barcode to each large print and Braille booklet for purposes of shipping, distributing, and collecting the materials. This security barcode is used with DRC's Operations Materials Management System (Ops MMS).

School personnel were directed to transcribe all student answers (SR and CR) into scannable answer documents exactly as the student responded. No alterations or corrections of student work were permitted, and the transcribed answer document had to have the same form designation as the Braille and large print version.

DRC utilizes Wolfgang Productions for the production of Sign Language Videos. The items are passed to Wolfgang Productions via a secure ftp site. Two to three different interpreters are used to interpret and validate the translations during video recording. After the interpretations are recorded and returned to DRC via a secure ftp site, DRC loads these videos in the online test engine. When school personnel assign the specific sign language accommodation, the student will be able to play each video next to the item.

SUMMARY OF THE TRANSLATION VERIFICATION STUDY BY SLTI OF THE 2009 PSSA SCIENCE ASSESSMENTS

From November 2009 through January 2010 SLTI conducted a translation verification study of the 2009 PSSA Science Assessments titled "Translation Verification Study of the 2009 Pennsylvania System of School Assessment (PSSA) of Science for Grades 4, 8, and 11." In this study, the appropriateness of the transadaptation of the PSSA Science Assessments into Spanish was investigated. Three independent reviewers, specialists in bilingual science education and science translation, determined the appropriateness of each translated or adapted item. The purpose of the report was to conduct qualitative research on the comparability of the Spanish and English versions of the PSSA Science Assessments.

The report of this study by Second Language Testing, Incorporated described the assessments, the purpose of the translation verification study, the reviewers, the translation verification process, and the translation verification results. A total of 185 items covering tests at Grades 4 (63 items), 8 (63 items), and 11 (59 items) were reviewed. The study showed that none of the 185 reviewed items were judged by the reviewers to be inappropriately translated or adapted into Spanish. The study did provide suggestions for nine items that were judged appropriate but whose translation could still be improved in the event the items were used again.

Overall, the report concluded that the transadaptation of the 2009 PSSA Science Assessments was clearly appropriate. Since both the English and Spanish versions are comparable in the sense that both versions assess the same content, use the same format, have equal numbers of items, follow the same test administration and scoring procedures, and are used and interpreted in the same way, the study concluded that the English and Spanish versions of the science assessments measured the same content in two different languages. Thus, the study indicated that both language versions showed the same degree of alignment and the same depth-of-knowledge described in the Assessment Anchors alignment study. As a result, the report concluded that there was no need to conduct a separate alignment study of the Spanish version of the PSSA Science Assessments.

Beyond the findings presented in the study, the report recommended that appropriate quantitative analyses be carried out on construct equivalence. Unless such analyses clearly demonstrate a lack of equivalence, it is appropriate to assume that there is no need to conduct a separate linking study or a separate standard setting study for the Spanish versions of the tests. Both versions can be scored on the same scale, and scores on each version have the same meaning in terms of student mastery of the Science Assessment Anchors as defined by the Eligible Content.

The full report can be obtained by request from the Pennsylvania Department of Education.

SUMMARY OF COMPARABILITY REPORT FROM SIRECI PSYCHOMETRIC SERVICES

In addition to the study conducted by Second Language Testing, Incorporated, a second comparability study of the 2009 PSSA Spanish translations for science was completed in February 2010 by Sireci Psychometric Services. The report of the study is titled “Evaluating the Comparability of English and English-Spanish Science Tests from the Pennsylvania System of School Assessment.”

In this study, the data from the English language and English-Spanish dual-language Pennsylvania science tests for Grades 4, 8, and 11 were analyzed. These analyses were designed to evaluate the consistency of the structure of the data and the consistency of item functioning across the English and Spanish versions of these assessments using various psychometrics methods.

The full report can be obtained by request from the Pennsylvania Department of Education.

CHAPTER SEVEN: TEST ADMINISTRATION PROCEDURES

TEST SESSIONS, TEST SECTIONS, TEST TIMING, AND TEST LAYOUT

Some assessments utilized separate test booklets and answer booklets. An answer booklet was used to respond to the selected-response items (i.e., multiple-choice items and evidence-based selected-response items) and constructed-response items (i.e., open-ended items, short-answer items, and text-dependent analysis items,) and to collect demographic information. The selected-response items and all stimulus-text were placed within the test booklet. Other assessments used a single consumable booklet. When a single scannable answer booklet was utilized, the contents of the answer booklet and the test booklet were combined into one integrated booklet.

Table 7–1. Booklet Type by Administration

Assessment	Grade	Booklet Type
Mathematics	3	Single Consumable Booklet
Mathematics	4	Single Consumable Booklet
Mathematics	5	Single Consumable Booklet
Mathematics	6	Single Consumable Booklet
Mathematics	7	Single Consumable Booklet
Mathematics	8	Single Consumable Booklet
ELA	3	Single Consumable Booklet
ELA	4	Test Booklet and Answer Document
ELA	5	Test Booklet and Answer Document
ELA	6	Test Booklet and Answer Document
ELA	7	Test Booklet and Answer Document
ELA	8	Test Booklet and Answer Document
Science	4	Single Consumable Booklet
Science	8	Single Consumable Booklet

For the Grade 3 ELA assessment, a single booklet was used for each assessment to accommodate the younger age of the students, whereas a separate test booklet and answer booklet were used to separate the selected-response items and constructed-response items for grade 4 through 8.

The number of sections for the 2024 operational assessment varied based on the content area of the assessment. The ELA assessments consisted of three sections. The mathematics and science assessments consisted of two sections. See also Appendix G.

Table 7–2. PSSA Test Section Information

Content Area	No. of Sections per Form
Mathematics	2
ELA	3
Science	2

Table 7–3. PSSA Testing Load and Duration by Subject by Grade

Assessment	Grade	Total No. of SR Items per Form per Administration	Total No. of CR Items per Form per Administration	Total Estimated Administration Time per Form (in Minutes)
Mathematics	3	48	4	156
Mathematics	4	48	4	156
Mathematics	5	48	4	156
Mathematics	6	48	4	156
Mathematics	7	48	4	156
Mathematics	8	48	4	156
ELA	3	52	3	134 to 166
ELA	4	57	2	225 to 246
ELA	5	57	2	225 to 246
ELA	6	57	2	225 to 246
ELA	7	57	2	225 to 246
ELA	8	57	2	225 to 246
Science	4	46	6	76
Science	8	48	6	90

Table 7–4. PSSA Testing Load and Duration by Grade by Subject

Grade	Content	Total No. of Items per Form per Administration	Total Estimated Administration Time per Form (in Minutes)	Total No. of Items per Student	Total Estimated Administration Time per Student (in Minutes)
3	Mathematics	52	156	107	290 to 322
3	ELA	55	134 to 166	107	290 to 322
4	Mathematics	52	156	163	457 to 478
4	ELA	59	225 to 246	163	457 to 478
4	Science	52	76	163	457 to 478
5	Mathematics	52	156	111	381 to 402
5	ELA	59	225 to 246	111	381 to 402
6	Mathematics	52	156	111	381 to 402
6	ELA	59	225 to 246	111	381 to 402
7	Mathematics	52	156	111	381 to 402
7	ELA	59	225 to 246	111	381 to 402
8	Mathematics	52	156	165	471 to 492
8	ELA	59	225 to 246	165	471 to 492
8	Science	54	90	165	471 to 492

In general, the estimated testing times allowed 1–3 minutes per multiple-choice item and technology-enhanced item, depending on the content area. The evidence-based selected-response items were estimated to take approximately 3–5 minutes per item, depending on the number of responses required by the item. The open-ended or short-answer items were estimated to take approximately 5–10 minutes per item, also depending on the content area. Text-dependent analysis questions were estimated to take approximately 55–65 minutes per item.

Test administrators were instructed that each section in a form should be scheduled as one assessment session. However, they were allowed to combine multiple sections into a single session, as long as the sections were administered in the sequence in which they are printed in the test booklets (or shown on the screen). In all cases, individual assessment sections had to be completed within one school day.

Since not all students finished the assessment sections at the same time, test administrators were advised to use the flexibility of the time limits to the students' advantage. For example, test administrators managed the testing time so that students did not feel rushed while they were taking any assessment section, and no student was penalized because he or she worked slowly. It was equally stressed to test administrators that a student should not be given an opportunity to waste time. Students were told to close their booklets when they had finished the section of the assessment in which they had been working. Students who finished early were allowed to sit quietly or read for pleasure until all students had finished. Students with special requirements and/or abilities (i.e., physical, visual, auditory, or learning disabilities as defined by their IEP or service contracts) and students who just worked slowly may have required extended time. Special assessment situations were arranged for these students. When all students in a testing session indicated that they had finished an assessment section, test administrators ended the section and began the next section or allowed the students to return to regular activities.

Scheduled extended time was provided by a test administrator, and students were allowed to request extended time if they indicated that they had not completed the task. Such requests were granted if the test administrator found the request to be educationally valid. Test administrators were advised that not permitting ample time for students to complete the assessment might impact the students' and school's performance.

As a general guideline, however, when all students indicated that they had finished a section, that section was closed. Students requiring time beyond the majority of the student population were allowed to continue immediately following the regularly scheduled session in another setting. When such accommodations were made, school personnel ensured that students were monitored at all times to prevent sharing of information. Students were not permitted to continue a section of the assessment after a significant lapse of time from the original session.

TESTING WINDOW

The testing window for the 2024 operational assessments were as follows:

- English Language Arts: April 22–26, 2024
- Mathematics, Science, and Make-ups: April 29–May 10, 2024

SHIPPING, PACKAGING, AND DELIVERY OF MATERIALS

Sites receive the *Handbook for Assessment Coordinators*, the *Directions for Administration Manual*s, the administrative materials (e.g., Return Shipping labels, District/School labels, Do Not Score labels, Student Precode labels) and secure materials (e.g., consumable test/answer books) for each grade tested at a school participating in the English Language Arts, Mathematics, and Science assessments. All materials arrive at least two weeks prior to the start of the testing window.

DRC ensured that all assessment materials were assembled correctly prior to shipping. DRC operations staff used the automated Operations Materials Management System (Ops MMS) to assign secure materials to a school at the time of ship out. This system used barcode technology to provide an automated quality check between items requested for a site and items shipped to a site. A shipment box manifest was produced for and placed in each box shipped. DRC operations staff double-checked all box contents with the box manifest prior to sealing the box for shipping to ensure accurate delivery of materials. DRC operations staff performed lot acceptance sampling on both shipments. Districts and schools were selected at random and examined for correct and complete packaging and labeling. This sampling represented a minimum of 10 percent of all shipping sites.

DRC's materials management system, along with the systems of shippers, allowed DRC to track materials from DRC's warehouse facility to receipt at the district, school, or testing site. All DRC shipping facilities, materials processing facilities, and storage facilities are secure. Access is restricted by security code. Non-DRC personnel are escorted by a DRC employee at all times. Only DRC inventory control personnel have access to stored secure materials. DRC employees are trained in and made aware of the high level of security that is required.

DRC used United Parcel Service (UPS) to deliver the secure materials to the testing sites.

ONLINE TESTING

Online administration is managed through the DRC INSIGHT Portal that provides tiered, secure access to all required administrative functions. Within the DRC INSIGHT Portal, users manage student information and create test sessions.

Student information from the Pennsylvania Information Management System (PIMS) is imported into the DRC INSIGHT Portal Test Setup application via file transfer. If a record was not transferred via the PIMS file, LEAs also have the opportunity to upload a student(s) directly into the DRC INSIGHT Portal so the student can be included in a test session.

Once the student data is loaded into Test Setup, users organize students into test sessions. Test sessions can be created by class, grade, or school. Through Test Setup, users can also update student accommodation information, print test tickets, and monitor student testing status.

The student login ticket contains unique login credentials used by the student to access the testing software. For a selected test session, users can download and print a PDF document containing instructions, a roster of student tickets being printed, and the actual test tickets. Student test tickets are considered secure materials and LEAs are required to keep printed tickets in a predetermined, locked, secure storage area.

The web-based test engine, DRC INSIGHT Online Learning System, is downloaded onto computers that students will access during the assessment. Test items and forms can only be accessed using a valid test ticket. During testing, responses are sent to a DRC server each time the student navigates away from an item or clicks the *Next* button to submit an answer. The system is configured to allow students to review answers before submitting their test.

TEST SECURITY MEASURES

Test security is essential to obtaining reliable and valid scores for accountability purposes. Test Security Certifications were required to be signed by each building Principal, School Assessment Coordinator, District Assessment Coordinator, Test Administrator, and Proctor after the assessment is administered. All signed Certifications were returned to the Chief School Administrator who must retain the Certifications for three years. The purpose of the Certifications was to serve as a tool to document that the individuals responsible for administering the assessments both understood and acknowledged the importance of test security and accountability. The Certifications attested that all security measures were followed concerning the handling of secure materials. Additional details can be found in the *Handbook for Assessment Coordinators*. A screen shot of the Test Administrator Certificate is provided in Figure 7–1.

Figure 7–1. Test Administrator and Proctor PSSA Test Security Certification

PSSA Test Security Certification

(Test Administrator and Proctor)

District: _____

School: _____

AUN: _____

Maintaining the security and integrity of all assessment materials, preventing any dishonest or fraudulent behavior in the administration and handling of the assessment, and promoting a fair and equitable testing environment are essential in order to obtain reliable and valid student scores. In that regard, I certify the following:

Prior to the administration of the assessment, I completed the Pennsylvania State Test Administration Training, and I understand that the assessment materials are secure, confidential, and proprietary documents owned by the Pennsylvania Department of Education.

I have not reviewed, discussed, disseminated, described, or otherwise revealed the contents of the assessment to anyone. I have not removed any assessment materials from the school building unless I was specifically authorized to administer the assessment to a student on homebound instruction. I have not kept, copied, reproduced, released, or used any assessment, assessment question, specific assessment content, or examinee response to any item or any section of the secure assessment in any manner that is inconsistent with the instructions provided by or through the Pennsylvania Department of Education. I have not provided any examinee with an answer to an assessment question or in any way influenced an examinee's response to any assessment question. I have not in any manner altered or caused the alteration of any examinee response, assessment booklet, or papers used by examinees.

I understand that any breach in assessment security could result in the invalidation of assessment results, professional discipline, and/or criminal prosecution.

I understand that false statements herein are made subject to the penalties of 18 Pa.C.S. § 4904.

Administrator/Proctor Name	Administrator/Proctor Signature	Date of Signature

SAMPLE MANUALS

Copies of the *Handbook for Assessment Coordinators* and the *Directions for Administration Manual*s can be found on the PDE website at www.education.pa.gov.

TESTING WINDOW ASSESSMENT ACCOMMODATIONS

PDE develops an *Accommodation Guidelines* handbook for use with the PSSA administration. This manual can be found on the PDE website at www.education.pa.gov. Additional information regarding assessment accommodations can be found in Chapter Four and Six of this report.

CHAPTER EIGHT: PROCESSING AND SCORING

RECEIPT OF MATERIALS

Receipt of PSSA test materials began on May 1, 2024, and concluded by June 7, 2024. DRC's Operations Materials Management System (Ops MMS) was utilized to receive assessment materials securely, accurately, and efficiently. This system features innovative automation and advanced barcode scanners. Captured data were organized into reports, which provided timely information with respect to suspected missing material.

The first step in the Ops MMS was the Box Receipt System. When a shipment arrived at DRC, the boxes were removed from the carrier's truck and passed under a barcode reader, which read the barcode printed on the return label and identified the district and school. The number of boxes was immediately compared to what was picked up at the district. The data collected in this process were stored in the Ops MMS database. After the barcode data were captured, the boxes were placed on a pallet and assigned a corresponding pallet number.

Once the box receipt process was completed, the materials separation phase began. Warehouse personnel opened the boxes and sorted materials by grade, subject, and status (used or unused booklets) into scanning boxes. Every booklets' security barcode and precode barcode were hand-scanned to link each document to the original box. As the booklets were sorted, the Ops MMS system guided the floor operator to which box to place the document. The Ops MMS system kept count and record of the materials placed in each box. This count remained correlated to the box as an essential quality-control step throughout the secure booklet processing and provided a target number for all steps of the check-in process. Once a box was closed, an MMS Processing Label was placed on that box.

Once labeled, the sorted and counted boxes proceeded to the Quality Assurance process, where a secure booklet check-in operator used a hand scanner to scan the MMS Processing Label. This procedure identified the material type and quantity parameters for what the Ops MMS should expect within a box. The box contents were then loaded into the streamfeeder.

The documents were fed past oscillating scanners that captured both the security code and precode from the booklets. A human operator monitored an Ops MMS screen that displayed scan errors, an ordered accounting of what was successfully scanned, and the document count for each box. The system ensured that each material within the box matched the information obtained from the original hand-scanning process.

When all materials were scanned and the correct document count was confirmed, the box was sealed and placed on a pallet. If the correct document count was not confirmed, or if the operator encountered difficulties with material scanning, the box and its contents were delivered to an exception handling station for resolution.

This check-in process occurred immediately upon receipt of materials; therefore, DRC provided feedback to districts and schools regarding any missing materials based on actual receipt versus expected receipt. Sites that had 100 percent of their materials missing after the date they were due to DRC were contacted, and any issues were resolved.

Throughout the process of secure booklet check-in, DRC project management ran a daily missing materials report. Every site that was missing any number of booklets was contacted by DRC. Results of these correspondences were recorded for inclusion in the final Missing Materials Report if the missing booklets were not returned by the testing site. DRC produced the Missing Materials Report for PDE upon completion of secure booklet check-in. The report listed all schools in each participating district along with security barcodes for any booklets not returned to DRC.

After scannable materials (used answer booklets) were processed through booklet check-in, the materials became available to the DRC Document Processing log-in staff for document log-in. The booklets were logged-in using the following process:

- A DRC scannable barcode batch header was scanned, and a batch number was assigned to each box of booklets.

- The DRC box label barcode was scanned into the system to link the box and booklets to the newly created batch and to create a Batch Control Sheet.
- The DRC box label barcode number, along with the number of booklets in the box, was printed on the Batch Control Sheet for document tracking purposes. All booklets that were linked to the box barcode were assigned to the batch number and tracked through all processing steps. As booklets were processed, DRC staff dated and initialed the Batch Control Sheet to indicate that proper processing and controls were observed.

Before the booklets were scanned, all batches went through a quality inspection to ensure batch integrity and correct document placement.

After a quality check-in at the DRC Document Processing log-in area, the spines were cut off the scannable documents, and the pages were sent to DRC's Imaging and Scoring System.

SCANNING OF MATERIALS

Customized scanning programs for all scannable documents were prepared to read the booklets and to format the scanned information electronically. Before materials arrived, all image scanning programs went through a quality review process that included scanning of mock data from production booklets to ensure proper data collection.

DRC's image scanners were calibrated using a standard deck of scannable pages with 16 known levels of gray. On a predefined page location, the average pixel darkness was compared to the standard calibration to determine the level of gray. Marks with an average darkness level of 4 or above on a scale of 16 (0 through F) were determined to be valid responses, per industry standards. If multiple marks were read for a single item and the difference of the grayscale reads was greater than four levels, the lighter mark was discarded. If the multiple marks had fewer than four levels of grayscale difference, the response was flagged systematically and forwarded to an editor for resolution.

DRC's image scanners read selected-response, demographic, and identification information. The image scanners also used barcode readers to read pre-printed barcodes from a label on the booklets.

The scannable documents were automatically fed into the image scanners where predefined processing criteria determined which fields were to be captured electronically. Open-ended response images were separated out for image-based scoring.

During scanning, a unique serial number was printed on each sheet of paper. This serial number was used for document integrity and to maintain sequencing within a batch of booklets.

A monitor randomly displayed images, and the human operator adjusted or cleaned the scanner when the scanned image did not meet DRC's strict quality standards for image clarity.

All images passed through a software clean-up program that despeckled, deskewed, and desmeared the images. A random sample of images was reviewed for image quality approval. If any document failed to meet image quality standards, the document was returned for rescanning.

Page-scan verification was performed to ensure that all predefined portions of the booklets were represented in their entirety in the image files. If a page was missing, the entire booklet was flagged for resolution.

After each batch was scanned, booklets were processed through a computer-based editing program to detect potential errors as a result of smudges, multiple marks, and omissions in predetermined fields. Marks that did not meet the predefined editing standards were routed to editors for resolution.

Experienced DRC Document Processing editing staff reviewed all potential errors detected during scanning and made necessary corrections to the data files. The imaging system displayed each suspected error. The editing staff then inspected the image and made any needed corrections using the unique serial number printed on the document during scanning.

Upon completion of editing, quality control reports were run to ensure that all detected potential errors were reviewed again and a final disposition was determined.

Before batches of booklets were extracted for scoring, a final edit was performed to ensure that all requirements for final processing were met. If a batch contained errors, it was flagged for further review before being extracted for scoring and reporting.

During this processing step, the actual number of documents scanned was compared to the number of booklets assigned to the box during book receipt. Count discrepancies between book receipt and booklets scanned were resolved at this time.

Once all requirements for final processing were met, the batch was released for scoring and student level processing.

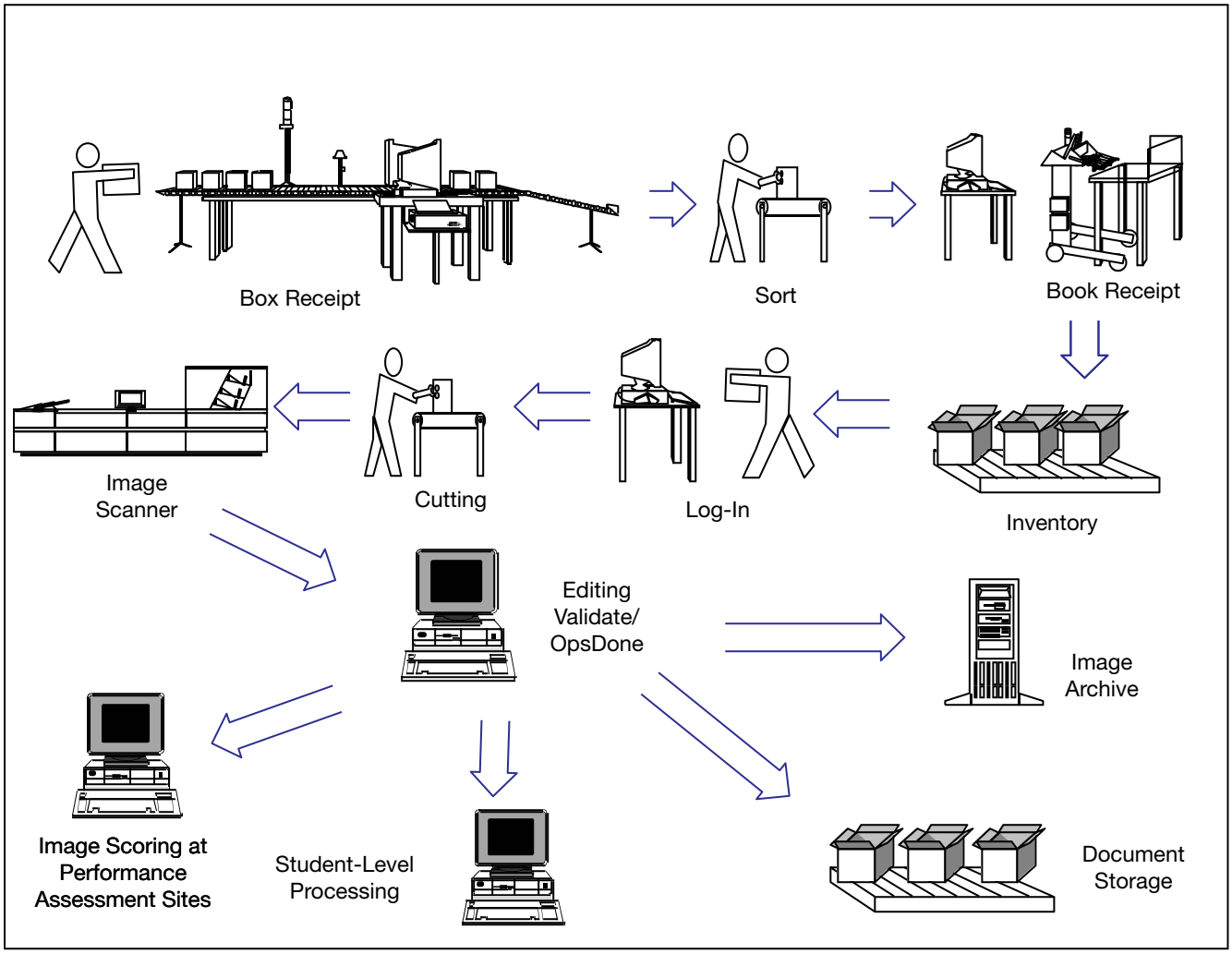
Table 8–1 shows the number of answer booklets received through booklet check-in, the number of booklets that contained student responses that were scanned and scored, the number of test booklets received, and the total number of booklets received for the English Language Arts assessment (ELA), the Mathematics assessment, and the Science assessment.

Table 8–1. Counts of 2024 PSSA Materials Received: Grades 3–8

Subject	Grade	Answer Booklets Received	Used Answer Booklets Received	Test Booklets Received	Total Booklets Received	Total Booklets Shipped
Mathematics	3	120,835	91,502	NA	120,835	120,843
Mathematics	4	122,299	92,758	122,295	244,594	244,602
Mathematics	5	119,740	90,341	119,743	239,483	239,494
Mathematics	6	109,552	82,892	109,548	219,100	219,108
Mathematics	7	110,932	83,282	110,907	221,839	221,892
Mathematics	8	111,172	82,900	111,166	222,338	222,406
ELA	3	120,035	89,990	NA	122,299	120,040
ELA	4	121,364	90,854	NA	119,740	121,365
ELA	5	118,916	88,770	NA	109,552	118,930
ELA	6	109,721	82,291	NA	110,932	109,725
ELA	7	111,126	83,983	NA	111,172	111,135
ELA	8	111,700	83,687	NA	120,035	111,711
Science	4	119,170	88,515	NA	121,364	119,175
Science	8	107,815	77,916	NA	118,916	107,832

Figure 8–1 illustrates the production workflow for DRC's Ops MMS and Image Scanning and Scoring System from receipt of materials through all processing of materials and the presentation of scanned images for scoring.

Figure 8–1. Workflow System



MATERIALS STORAGE

Upon completion of processing, student response documents were boxed for security purposes and final storage:

- Project-specific box labels were created containing unique customer and project information, material type, batch number, pallet/box number, and the number of boxes for a given batch.
- Boxes were stacked on pallets that were labeled with the project information and a list of the pallet's contents before delivery to the Materials Distribution Center for final secure storage.
- Materials will be destroyed one year after contract year ends, with PDE written approval.

ONLINE TESTING

The DRC INSIGHT test engine runs on a custom web browser that is designed to ensure a fully secure environment during testing. The secure browser "locks down" the student's testing device, preventing the student from accessing the desktop, the Internet, and other external programs. For non-secure testing such as practice and training sessions, students can use the Online Tools Training (OTT) environment, which runs on a standard web browser.

The custom browser software is downloaded from the DRC INSIGHT Portal and installed onto student testing devices. The secure browser can be installed on computers individually, or it can be downloaded to a central location, copied, and distributed to multiple computers simultaneously using common network distribution tools. Everything needed for testing is found within the secure browser, eliminating the need for districts to coordinate updates to third-party software.

Prior to operational use, DRC's quality assurance staff will perform full system-level tests in an independent test environment that simulates the production configuration. Tests are run on all supported computer platforms and browsers and include comprehensive review of system functionality, usability, reliability, security, and overall performance. Test content is also validated during this process.

Multiple methods are used to ensure secure data transfer, including encryption technologies and Secure Sockets Layer (SSL) protocol through Hypertext Transfer Protocol Secure (HTTPS). Test content is encrypted at the host server, and remains encrypted throughout all network transmissions; content is decrypted only once the student login is validated. Decrypted test content on the student workstation is stored only in memory during each test session. Once the session is ended (the test is completed or the student logs out), computer memory is purged to ensure security of test content is maintained.

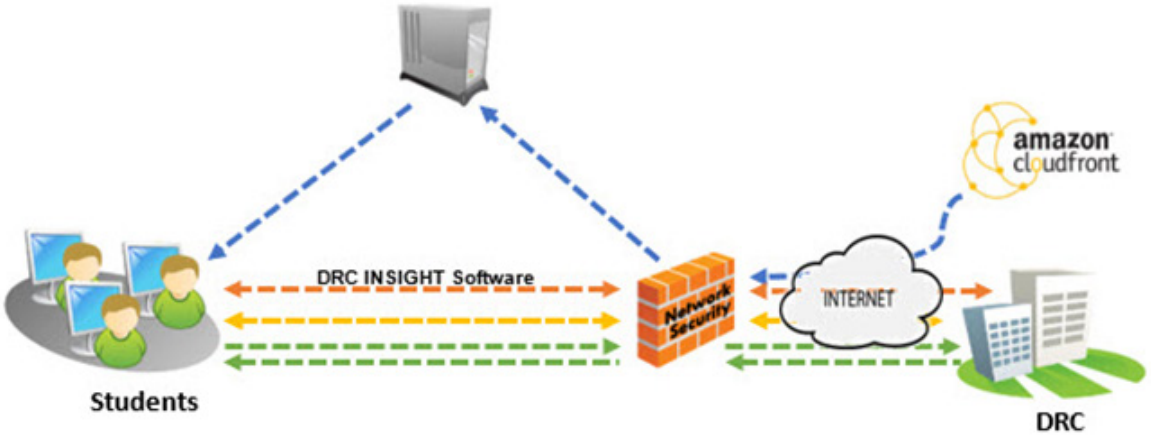
Responses are saved automatically every 45 seconds during testing, or when the student navigates away from an item or answers a selected-response item (whichever comes first). If a particular question takes the student longer than 45 seconds to answer, then the partial, incomplete responses are submitted at 45-second intervals until the student completes the item. This auto-save helps safeguard against students losing their work on longer items, such as constructed-response items. When the student returns to the test after a break or interruption, the student is returned to the point that they left off without having to navigate through all previously answered questions.

Table 8–2. Counts of 2024 PSSA Online Assessments: Grades 3–8

Subject	Grade	Total Online Assessments Completed
Mathematics	3	28,054
Mathematics	4	31,395
Mathematics	5	33,718
Mathematics	6	40,553
Mathematics	7	40,834
Mathematics	8	41,715
ELA	3	27,169
ELA	4	30,246
ELA	5	33,005
ELA	6	40,896
ELA	7	42,461
ELA	8	43,471
Science	4	33,639
Science	8	47,253

Figure 8–2 illustrates the secure transfer of online test responses between the student and DRC.

Figure 8–2. Architecture of the Student Testing Experience



SCORING MULTIPLE-CHOICE ITEMS

The scoring process included the scoring of multiple-choice items against the answer key and the aggregation of raw scores from the open-ended responses. A student's raw score is the actual number of points achieved by the student for tested elements of an assessment. From the raw scores, the scale scores were calculated.

The student file was scored against the final and approved multiple-choice answer key. Items were scored as right, wrong, omitted, or double-gridded (more than one answer was bubbled for an item). Sections of the test were evaluated as a whole and an attempt status was determined for each student for each subject. The score program defined all data elements at the student level for reporting.

RANGEFINDING

After student answer documents were received and processed, DRC's Performance Assessment Services (PAS) staff assembled groups of responses that exemplified the different score points for each subject. The score point ranges were represented by the following scoring guidelines:

- 0–3 item-specific scoring guidelines for ELA: reading (short-answer)
- 1–4 holistic scoring guideline for ELA: text-dependent analysis
- 0–4 item-specific scoring guidelines for math
- 0–3 item-specific scoring guidelines for science

  Note: For English language arts and mathematics at all grade levels (3–8), Pennsylvania Core Standards (PCS) items were rangefound and field tested. ELA rangefound/field tested 9 forms per subject, per grade. Mathematics rangefound/field tested 9 forms per subject, per grade. Science rangefound/field tested 12 forms per subject, per grade level tested (4 and 8), aligned to the STEELS standards. All items were embedded in the 2024 operational PSSA.

Responses were pulled from the embedded field test portion of the PSSA for each subject. Once examples covering the range of score points were selected for each item, sets were assembled for rangefinding, and copies were made for each rangefinding participant. Rangefinding committees consisted of Pennsylvania educators, PDE staff members, DRC Test Development staff, and DRC Performance Assessment Services staff. The rangefinding meetings were as follows:

- ELA: Text-Dependent Analysis (TDA) Field Test Rangefinding (grades 4–8), June 3–7, Lancaster Marriott at Penn Square in Lancaster, PA
- Reading Field Test Rangefinding (grade 3), June 3–5, Lancaster Marriott at Penn Square in Lancaster, PA
- Math Field Test Rangefinding (grades 6–8), June 3–5, Lancaster Marriott at Penn Square in Lancaster, PA
- Math Field Test Rangefinding (grades 3–5), June 5–7, Lancaster Marriott at Penn Square in Lancaster, PA
- Science Field Test Rangefinding (grades 4 and 8), June 3–5, Lancaster Marriott at Penn Square in Lancaster, PA

Each rangefinding meeting began in a joint session with a review of the history of the assessment as well as a discussion of the purpose of the rangefinding meeting and the role rangefinding plays within the item development process. The session then broke into subject/grade-specific committees. Sets of student responses were presented to the committees, one item at a time. Each committee initially reviewed and scored student responses as a group to ensure consistency in the interpretation of the scoring guidelines. Committee members then went on to score responses independently. For each student response, committee members' scores were discussed until a consensus was reached. Only those responses for which there was strong agreement among committee members were chosen for inclusion in training materials for DRC raters.

Discussions of student responses included the mandatory use of scoring guideline language. This ensured that committee members remained focused on the specific requirements of each score level. DRC PAS staff took notes addressing how and why the committees arrived at score point decisions, and this information was used by the scoring directors in rater training.

DRC and PDE discussed scoring guideline edits suggested by the rangefinding committees. Changes approved by PDE were then incorporated into the scoring guidelines by DRC Test Development staff. The edited scoring guidelines were used in the preparation of materials and the training of raters.

RATER RECRUITMENT/QUALIFICATIONS

DRC retains a number of raters from year to year; the overall return rate in 2024 was 45%. This pool of experienced raters was drawn from to staff the scoring of the 2024 PSSA. To complete the rater staffing, applications for rater positions were screened by DRC's recruiting staff and one-on-one interviews were scheduled. Candidates were personally interviewed by DRC staff. In addition, each candidate was required to provide a writing sample, a math sample, references, and proof of a four-year college degree. In this screening process, preference was given to candidates with previous experience scoring large-scale assessments and degrees emphasizing expertise in mathematics, English language arts, or science. Staffing partners were used to augment hiring using the same practices as those employed by DRC. The rater pool consisted of educators and other professionals with content-specific backgrounds. These individuals were valued for their content-specific knowledge, but they were required to set aside their own biases about student performance and accept the scoring standards outlined in the PSSA.

LEADERSHIP RECRUITMENT/QUALIFICATIONS

Scoring directors and team leaders were selected from a pool of employees who displayed expertise as raters and leaders on previous DRC projects. These individuals had strong backgrounds in mathematics, English language arts, or science, and demonstrated organizational, leadership, communication, and management skills. All scoring directors had previous leadership experience working on large scale assessments. All scoring directors, team leaders, and raters were required to sign confidentiality agreements before handling secure materials.

Each group of raters was assigned a scoring director. All handscoring activities were led by a scoring director for the duration of the project. Scoring directors assisted in rangefinding, worked with supervisors to create training materials, conducted team leader training, and were responsible for training the raters. The scoring director made sure that reports were available and interpreted those reports for the raters. The scoring director also supervised the team leaders. Scoring directors were monitored by the project managers throughout the project.

Team leaders assisted the scoring director with rater training by answering individual questions that raters may not have felt comfortable asking in a large group. Once raters were qualified, team leaders were responsible for monitoring and maintaining the accuracy and workload of each team member. Ongoing monitoring identified those individuals having difficulty scoring accurately. These raters received one-on-one retraining from the team leader or scoring director. Any rater who could not be successfully retrained had his/her scores purged and was released from the project.

TRAINING

As part of preparation for the 2024 ELA, mathematics, and science PSSA assessments, DRC's PAS staff assembled the PDE-approved scoring guidelines and scored student responses approved by rangefinding committees into sets used for training raters. The item-specific scoring guidelines for mathematics, science and ELA: reading (short-answer), as well as the focused holistic scoring guidelines for TDAs served as the raters' constant reference. Responses that were relevant in terms of the scoring concepts they illustrated were annotated and included in an anchor set. The full range of each score point was clearly represented and annotated in the anchor set, which was used for reference by raters throughout the project.

Training sets and qualifying sets contained student responses consensus-scored by rangefinding committee members. Raters were instructed on how to apply the scoring guidelines and were required to demonstrate a clear comprehension of each anchor set by performing well on the associated training materials. Responses were selected for training to show raters the range of each score point (e.g., high, mid, and low 2s). Examples of 0s were also included for all mathematics, reading, and science items. This process helped raters recognize the various ways that a student could respond in order to earn each score point outlined and defined in the scoring guidelines.

The scoring director conducted a team leader training session before training the raters. This session followed the same procedures as rater training but was more rigorous and in-depth due to the extra responsibilities required of team leaders. During team leader training, all pertinent materials were reviewed and discussed. Team leaders were given access to fully annotated training materials with committee justifications from the rangefinding meetings. To facilitate scoring consistency, it was imperative that all team leaders imparted the same rationale for each response. Once the team leaders were qualified, leadership responsibilities were reviewed and team assignments were given. A ratio of one team leader per 7–10 raters ensured sufficient monitoring rates for team members.

Rater training began with the scoring director providing an intensive review of the scoring guidelines and anchor responses. Next, raters practiced by independently scoring the responses in the training sets. After each training set was taken, the scoring director led a thorough discussion of the responses.

Once the scoring guidelines, anchor sets, and training sets were thoroughly discussed, each rater was required to demonstrate understanding of the scoring criteria by qualifying (i.e., scoring with acceptable agreement to the true scores) on at least one of the qualifying sets. Raters who failed to achieve at least 70 percent exact agreement on the first qualifying set were given additional training, either individually or in a small group setting. Raters who did not perform at the required level of agreement by the end of the qualifying process were not allowed to score any student responses. These individuals were removed from the pool of potential raters in DRC's imaging system and released from the project.

DRC's remote scoring is designed to very closely emulate the work that was done in our physical scoring locations. The platform, content, and expectations for quality remain the same, and interactive technology and content training and discussions are conducted live (virtually). The differences come with the method through which training is delivered (online), and in the modes of communication that are used (web screen sharing, webcast, video chat, and chat). Our scoring leaders are equipped with a variety of tools to ensure every scorer is successful in understanding and applying scoring criteria to student responses.

The 2024 assessment included the opportunity for students to respond in Spanish to mathematics and science items. Rater training for the Spanish language response scoring was conducted by Tri-Lin Integrated Services in San Antonio, Texas, and was overseen by a DRC project manager, who is a Spanish language speaker with a strong handscoring background. All Spanish raters were bilingual and hired specifically to score the Spanish portion of the assessment and were required to meet the same standards set for raters of the English language version of the assessment.

Table 8–3. Qualification Rates for 2024 PSSA Open-Ended Response Items

Subject	% Qualifying	% That Did Not Qualify
Math	96	4
ELA	99	1
Science	99	1

HANDSCORING PROCESS

Student responses were scored independently. All responses were scored once, and ten percent of the responses were scored a second time. The data collected from the ten-percent double-read portion was used to calculate the exact and adjacent agreement rates in the Scoring Summary Reports. The responses that were used for the ten percent read behind were randomly chosen by the imaging system at the item level. Additional read behinds by the team leaders and scoring directors were done to further ensure reliability.

Raters scored the imaged student responses at the Cincinnati, OH location and remotely. Raters working remotely scored student responses on either laptop or desktop computers.

For on-site scoring, raters were seated at tables with individual imaging stations. In the case of remote scoring, raters worked in a secure location in their homes. Image distribution was controlled, ensuring that student images were sent only to designated groups of raters qualified to score those items. Imaged student responses were electronically separated for routing to individual raters by item. Raters were only provided with student responses for items that they were qualified to score. Scores were keyed into DRC's imaging system.

To handle possible alerts (i.e., student responses indicating potential issues related to students' safety and well-being that sometimes require attention at the state or local level), DRC's imaging system allows raters to forward responses needing attention to the scoring director. These alerts are reviewed by project management, who then notifies the students' schools and PDE of the occurrences. PDE does not receive any identifying information about the students. At no time in the alerts process do raters, or other DRC handscoring staff, acquire any knowledge concerning a student's personal identity.

HANDSCORING VALIDITY PROCESS

One of the training tools PAS utilized to ensure rater accuracy was the validity process. The goal of the validity process is to ensure that scoring standards are maintained. Specifically, the objective is to make sure that raters score student responses in a manner consistent with statewide standards both within a single administration of the PSSA and across consecutive administrations. During the scoring of the 2024 PSSA, scoring consistency was maintained, in part, through the validity process.

The validity process began with the selection of scored responses. Forty validity responses were selected for each core open-ended (OE) item. These 40 responses were drawn from a pool of exemplars (responses that are representative of a particular score point and have been verified by the scoring director). The scores on validity responses are considered true scores.

The validity responses were then implemented to test rater accuracy. The responses were selected within the imaging system and dispersed intermittently to the raters. By the end of the project, raters had scored all 40 validity responses for any items they were qualified to score. Raters were unaware when they were being dealt pre-scored validity responses and assumed that they were scoring live student responses. This helped bolster the internal

validity of the process. All raters who received validity responses had already successfully completed the training/qualifying process.

The scores that the raters assigned to the validity responses were compared to the true scores in order to determine the validity of the raters' scores. For each item, the percentage of exact agreement as well as the percentage of high and low scores was computed. This data was accessed through the Validity Item Detail Report. The same sort of data was also computed for each specific rater. This data was accessed through the Validity Reader Detail Report. Both of these may be run as daily or cumulative reports.

The Validity Reader Detail Report was used to identify particular raters for retraining. If a rater on a certain day generated a lower rate of agreement on a group of validity responses, it was immediately apparent in the Validity Reader Detail Report. A lower rate of agreement was defined as anything below 70 percent exact agreement with the true scores. Any time a rater's validity agreement rate fell below 70 percent, the scoring director was cued to examine that rater's scoring. First, the scoring director attempted to ascertain what kind of validity responses the rater was scoring incorrectly. This was done to determine whether there was any sort of a trend (e.g., trending low on the 1–2 line). Once the source of the low agreement rate was determined, the rater was retrained. If it was determined that the rater had been scoring live responses inaccurately, then his/her scores were purged for that day, and the responses were re-circulated and scored by other raters.

The cumulative Validity Item Detail Report was utilized to identify potential group-wide trends in need of correction. For instance, if a particular validity response with a true score of 3 was given a score of 2 by a significant number of raters within the group, that trend would be revealed in the Validity Item Detail Report. To correct a trend of this sort, the scoring director would look for student responses similar to the validity paper being scored incorrectly. Once located, these responses would be used in group-wide re-training, usually in the form of an annotated handout or a short set of responses without printed scores given to raters as a recalibration test.

Validity was employed on all operational mathematics, ELA: reading, and science OE items, as well as on all operational TDAs. Each 40-response validity set was formulated to mirror the score point distribution that the item generated during its previous administration. Each validity set included at least five examples of each score point. Examples of different types of responses were included to ensure that raters were tested on the full spectrum of response types.

The exact rater agreement rate generated during the validity process is sometimes higher than the inter-rater agreement rate for the same item. The reason for this sort of difference often has to do with how validity sets are formulated. The 40 validity responses for each item are intended to cover the full breadth of each score point. For example, each validity set contains examples of high, mid, and low 2s. This sort of scope ensures that the validity process is truly valid in terms of addressing the complete spectrum of response types. However, certain types of responses are generally not included in validity sets. These include line responses (i.e., examples of score points that are so close to the adjacent score point that raters are instructed to consult with a supervisor before assigning a score) and responses that, because of poor word choice/writing, are difficult to understand. The reason for these exclusions is that confusing/line/illegible responses often do not impart a teachable lesson. Since these types of responses are generally unique, any potential lesson the response might teach would apply only to that particular response. Conversely, responses in validity sets are selected because they represent common response-types and teach lessons that can be applied to other similar responses. Due to this distinction, validity sets sometimes generate a slightly higher agreement rate than is generated during operational scoring.

QUALITY CONTROL

Rater accuracy was monitored throughout the scoring session by means of daily and on-demand reports. These reports ensured that an acceptable level of scoring accuracy was maintained throughout the project. Interrater reliability was tracked and monitored with multiple quality control reports that were reviewed by quality assurance analysts. These reports and other quality control documents were generated at the scoring centers, where they were reviewed by the scoring directors, team leaders, and project managers. The following reports and documents were used during the scoring of the open-ended items:

The Scoring Summary Report (includes two related reports)

1. The Reader Monitor Report monitored how often raters were in exact agreement with one another and ensured that an acceptable agreement rate was maintained. This report provided daily and cumulative exact and adjacent inter-rater agreement on the ten percent that was double read.
2. The Score Point Distribution Report monitored the percentage of responses given each of the score points. For example, the mathematics daily and cumulative reports showed what percentage of 0s, 1s, 2s, 3s, and 4s a rater – or group of raters - had given to all the responses scored at the time the report was produced. It also indicated the number of responses read by each rater so that production rates could be monitored.

The Item Status Report monitored the progress of handscoring. This report tracked each response and indicated the status (e.g., not read, complete, awaiting supervisor review, etc.). This report ensured that all responses were scored by the end of the project.

The Reader Score Report identified all responses scored by an individual rater. This report was useful if any responses needed rescoring due to possible rater drift.

The Validity Reports (addressed in detail on previous pages) tracked how raters performed by comparing pre-scored responses to raters' scores for the same responses. If a rater's scoring fell below the 70 percent determined agreement rate, remediation occurred. Raters who did not retrain to the required level of agreement were released from the project.

Read Behinds were used by the team leader/scoring director to monitor individual rater reliability. Team leaders read randomly selected, scored responses from each team member on a daily basis. If the team leader disagreed with a rater's score, remediation occurred. This proved to be a very effective type of feedback because it was performed in real time with live student responses scored by each rater.

Recalibration Sets were used throughout the scoring sessions to ensure accuracy by comparing each rater's scores with the true scores on a pre-selected set of responses. Recalibration sets helped to refocus raters on Pennsylvania scoring standards. These checks made sure there was no change in the scoring pattern as the project progressed. Raters failing to achieve 70 percent agreement with the recalibration true scores were given additional training to achieve the highest degree of accuracy possible. Raters who were unable to recalibrate were released from the project. The process for creating and administering recalibration sets was similar to the one employed for creating and administering training sets.

Table 8–4. Inter-rater Agreement for 2024 PSSA Mathematics Grades 3–8 Open-Ended Response Items and Validity

Mathematics	Common Item	% Exact Agreement	% Adjacent Agreement	% Exact + Adjacent Agreement	% Exact Validity Agreement
Grade 3	1	92	8	100	95
Grade 3	2	92	8	100	91
Grade 3	3	79	21	100	87
Grade 4	1	83	17	100	93
Grade 4	2	88	12	100	93
Grade 4	3	85	15	100	92
Grade 5	1	87	13	100	95
Grade 5	2	84	16	100	92
Grade 5	3	83	17	100	82
Grade 6	1	86	14	100	93
Grade 6	2	88	12	100	94
Grade 6	3	78	21	99	85
Grade 7	1	82	18	100	88
Grade 7	2	92	8	100	94
Grade 7	3	82	18	100	83
Grade 8	1	90	10	100	91
Grade 8	2	88	12	100	92
Grade 8	3	89	11	100	86

Note. 0–4 possible score points

Table 8–5. Percentages Awarded for Each Possible Score Point 2024 PSSA Mathematics Grades 3–8

Mathematics	Common Item	%0	%1	%2	%3	%4	%B/NS*
Grade 3	1	9	18	27	36	7	3
Grade 3	2	23	24	20	19	12	4
Grade 3	3	11	20	26	26	13	4
Grade 4	1	20	24	22	23	7	3
Grade 4	2	24	38	17	12	4	4
Grade 4	3	19	25	24	19	7	6
Grade 5	1	17	20	19	21	19	4
Grade 5	2	22	33	22	10	7	5
Grade 5	3	16	22	21	21	17	3
Grade 6	1	12	27	33	18	5	4
Grade 6	2	30	35	16	9	4	6
Grade 6	3	23	24	18	17	13	5
Grade 7	1	27	15	19	24	9	6
Grade 7	2	38	29	15	9	3	7
Grade 7	3	26	29	23	11	4	7
Grade 8	1	12	33	32	4	13	6
Grade 8	2	41	18	11	12	6	11
Grade 8	3	34	20	15	14	9	7

Note. *B=blank and NS=non-scoreable

Table 8–6. Inter-rater Agreement for 2024 PSSA Reading Grade 3 Open-Ended Response Items and Validity

Reading	Common Item	% Exact Agreement	% Adjacent Agreement	% Exact + Adjacent Agreement	% Exact Validity Agreement
Grade 3	1	84	16	100	87
Grade 3	2	79	20	99	86

Note. 0–3 possible score points

Table 8–7. Percentages Awarded for Each Possible Score Point 2024 PSSA Reading Grade 3

Reading	Common Item	%0	%1	%2	%3	%B/NS*
Grade 3	1	12	45	28	5	11
Grade 3	2	23	32	29	6	10

Note. *B=blank and NS=non-scoreable

Table 8–8. Inter-rater Agreement for 2024 PSSA ELA Grades 4–8 Text-Dependent Analysis Items and Validity

TDA	Common Item	% Exact Agreement	% Adjacent Agreement	% Exact + Adjacent Agreement	% Exact Validity Agreement
Grade 4	1	90	10	100	93
Grade 5	1	84	16	100	91
Grade 6	1	86	14	100	91
Grade 7	1	86	14	100	86
Grade 8	1	83	17	100	91

Note. 1–4 possible score points

Table 8–9. Percentages Awarded for Each Possible Score Point 2024 PSSA TDA items Grades 4–8

TDA	Common Item	%1	%2	%3	%4	%B/NS*
Grade 4	1	31	32	13	2	22
Grade 5	1	20	41	22	2	14
Grade 6	1	14	51	19	3	11
Grade 7	1	25	41	18	3	12
Grade 8	1	13	42	27	6	11

Note. *B=blank and NS=non-scoreable

Table 8–10. Inter-rater Agreement for 2024 PSSA Science Grades 4 and 8 Open-Ended Response Items and Validity

Science	Common Item	% Exact Agreement	% Adjacent Agreement	% Exact + Adjacent Agreement	% Exact Validity Agreement
Grade 4	1	92	8	100	96
Grade 4	2	88	12	100	90
Grade 4	3	90	10	100	95
Grade 4	4	94	6	100	94
Grade 4	5	80	20	100	73
Grade 8	1	82	17	99	78
Grade 8	2	90	10	100	94
Grade 8	3	95	5	100	89
Grade 8	4	89	11	100	93
Grade 8	5	92	8	100	89

Note. 0–2 possible score points

Table 8–11. Percentages Awarded for Each Possible Score Point 2024 PSSA Science Grades 4 and 8

Science	Common Item	%0	%1	%2	%B/NS*
Grade 4	1	16	29	50	4
Grade 4	2	17	60	17	5
Grade 4	3	16	34	45	6
Grade 4	4	15	34	46	5
Grade 4	5	27	41	24	8
Grade 8	1	38	36	17	9
Grade 8	2	40	33	17	10
Grade 8	3	49	22	16	14
Grade 8	4	15	28	46	11
Grade 8	5	27	33	30	9

Note. *B=blank and NS=non-scoreable

CHAPTER NINE: DESCRIPTION OF DATA SOURCES AND SAMPLING ADEQUACY

This chapter describes the data sources (e.g., *n*-counts, characteristics of students) used for the various analysis procedures discussed in the remaining chapters of this technical report. Psychometric analyses are conducted at several points for the PSSA: 1) early analyses for quality control purposes and key validation; 2) analyses associated with the pre-equating validation; 3) analyses used for item banking; and 4) analyses for the technical report. Detailed information regarding the attributes of students is provided in Chapter Ten.

PRIMARY STUDENT FILTERING CRITERIA

For many data files, the primary means of filtering students for inclusion/exclusion from any data analysis are based on the state reporting criteria which are outlined below. Within the state reporting rules are separate attempt criteria for individual subject areas. The attempt criteria are discussed more fully below.

STATE REPORTING CRITERIA

The state reporting criteria are as follows:

- The student must be enrolled for the full academic year.
- The student must be attributed to a public district/school (state).
- The student must receive a score (i.e., met the subject attempt logic—see additional information below).
- The student is not a homeschool student.
- The student is not a foreign exchange student.
- The student is not a first year EL student (mathematics/ELA only).

PSSA ATTEMPT CRITERIA

For all data sources, only students who meet the attempt criteria are included. For mathematics, ELA, and science, the attempt criteria required students to complete a minimum of five items (multiple-choice (MC) or open-ended (OE)) in each respective subject area section of the test booklets. All subject counts were based on operational and nonoperational items.

KEY VALIDATION DATA

These data are only mentioned for the sake of completeness, as no formal results from these data are provided in this technical document. An analysis on all operational Selected Response (SR) items is conducted early in the scoring process to ensure that the items are performing as expected. This is an important quality check that is always done for the PSSA. This analysis is usually (but not always) done using all students from early-return schools. The sample does not need to be representative of the entire state for these quality checks. Available student data typically suffices if there is reasonable variability in total test scores.

Key validation data included all public-school students who had their SR items scanned and scored by early May and met preliminary attempt criteria (i.e., attempt was determined based on SR items only). Note that the full state reporting criteria were not in effect for this file (only attribution to a public school based on tested site and preliminary attempt criteria were used to filter students).

PRE-EQUATING VALIDATION DATA

Data used for pre-equating validation included students who met the preliminary state reporting criteria (including attempt criteria) by May 24. The state reporting criteria were preliminary, meaning that attributions and final PIMS[1] information were not complete by this time. No sampling was undertaken in this data (i.e., it included all students who met the above criteria with operational test scores up to this point[2]). This data file was used to analyze differences in the pre-equated solutions and post-equated solutions to make the final decision to proceed with the pre-equated solution.

ITEM BANK DATA

The item bank data included students who met the state reporting criteria by July 5th. No sampling was undertaken in this data (i.e., it included all students who met the above criteria, were administered either paper-pencil or computer-based tests with scored field- test data up to this point). The data banked for field-test items as well as the updates for operational item parameters were based on this data file.

FINAL DATA

The final datafile included all students who met state reporting criteria by September 19th for all subject areas. The final data reflects update by schools for correction of certain fields (e.g., student ethnicity). All other files contained preliminary data. Most of the results included in this technical report were derived using the final data file.

FINAL *N*-COUNTS FOR ALL DATA SOURCES

The *n*-counts for all data sources are provided in Table 9–1. The pre-equating validation count includes students who met the preliminary state reporting criteria, while the final count includes students who met the final state reporting criteria. Computer-based test (CBT) forms were offered for all subjects. Final data shows the number of students in both modes. Students administered a mixed-mode test are counted as CBT administrations. Data from both paper-based tests and CBT were used for item banking.

Table 9–1. Data Source *N*-Counts

Subject	Grade	Key Validation (Paper)	Key Validation (CBT)	Pre-equating Validation (Paper/CBT)	Item Bank (Paper/CBT)	Final (Paper/CBT)
Mathematics	3	27231	27430	78393	114229	112845
Mathematics	4	28977	30622	81871	118075	116862
Mathematics	5	25914	32746	83698	117918	116834
Mathematics	6	22235	39112	83500	117312	116358
Mathematics	7	20444	39175	81580	118272	117279
Mathematics	8	20896	39590	80686	117344	116468
ELA	3	66925	26419	98212	113956	112499
ELA	4	68131	29393	101739	117797	116411
ELA	5	64622	31988	100837	118076	116698
ELA	6	56485	39407	100379	117751	116426
ELA	7	55438	40793	100568	118900	117431
ELA	8	54632	41327	99162	118041	116655
Science	4	8553	32824	59216	117846	116630
Science	8	7146	44898	66954	116948	116048

[1] Pennsylvania Information Management System

[2] Historically, PSSA has retained all students who met the stated criteria in the calibration data set, even those who had testing accommodations.

COMPUTER-BASED TEST (CBT)

Table 9–2 displays the count of students who took the 2024 PSSA broken out by subject, grade, and mode (e.g., paper, CBT) with the final data. The proportion of CBT administrations was between 24% and 38% of all administrations and increased from the proportion of CBT administrations in 2023 (between 20% and 34%). Consistent with previous administrations, CBT administrations for lower grade levels tended to be slightly lower than higher grade levels.

Table 9–2. Final *N*-Counts and Proportion by Mode

Subject	Grade	*N*-Counts Paper	*N*-Counts CBT	Proportion (%) Paper	Proportion (%) CBT
Mathematics	3	85850	26995	76.08	23.92
Mathematics	4	86698	30164	74.19	25.81
Mathematics	5	84574	32260	72.39	27.61
Mathematics	6	77732	38626	66.80	33.20
Mathematics	7	78563	38716	66.99	33.01
Mathematics	8	77275	39193	66.35	33.65
ELA	3	86307	26192	76.72	23.28
ELA	4	87303	29108	75.00	25.00
ELA	5	85047	31651	72.88	27.12
ELA	6	77351	39075	66.44	33.56
ELA	7	76968	40463	65.54	34.46
ELA	8	75628	41027	64.83	35.17
Science	4	84332	32298	72.31	27.69
Science	8	71616	44432	61.71	38.29

SPIRALING OF FORMS

PSSA forms were spiraled during test administration for all grades and subjects. Appendix H provides summary statistics for scaled scores disaggregated by mode, test form, for each subject and grade. The mean scaled scores across forms are similar, indicating the student populations taking each form are of approximately equal ability and item scrambling are appropriate. This equivalence of ability distributions across forms is the desired outcome of spiraling and allows for optimum analysis of the embedded field-test items.

SCRAMBLING OF FORMS

PSSA forms were scrambled during form construction in response to test security issues raised in prior PSSA administrations. Eight scrambled patterns of operational forms were constructed for each mathematics, ELA and science assessment. The core form was constructed following the prior test development and psychometric guidelines and will be referred to as the Master Core throughout the remainder of this document. Based on previous TAC recommendation, the Master Core is the pattern of the test that would have been administered to all students in the absence of scrambling.

Once the Master Core was constructed and approved, DRC and PDE content specialists built seven scrambled patterns of the Master Core for each grade and subject. OE items were not scrambled, meaning each operational OE item appeared in the same position on every form. Some MC items also appeared in the same position on multiple forms due to content constraints. In some subjects and grades the number of field-test forms was greater than the number of scrambled patterns. In these instances, the Master Core and scrambled patterns were repeated with no specific pattern appearing more than two times. Prior to 2023, only three forms were offered for CBT due to the low CBT administration volume; however starting in 2023, all forms were offered both as a paper-pencil form and as a CBT.

The Master Core was used at least as often, or more often, than any scrambled version of the core form. Since form 1 was used for all accommodated forms (e.g., Braille, Large Print, Audio, and Spanish) it was never designated as a Master Core. The specific forms presenting the Master Core vary across grades within each content area. Given that all forms were spiraled at the student level, the distribution of forms is reasonably uniform. The exception is Form 1, which had higher participation since it is the only form used for accommodations.

Based on TAC recommendations to minimize possible item position effects, each section of the Master Core was divided into blocks of non-overlapping MC and EBSR items. Recall that other item types were not part of the scrambling. The blocks typically contained six to seven items (or one passage), but the block sizes varied depending on the content and section. Within each block, items were scrambled following general psychometric and content guidelines to create up to five versions of the block in addition to the Master Core sequencing. The blocks were assembled to create seven scrambled versions of the Master Core (named A, B, C, D, E, F, and G) in addition to the Master Core.

Prior to scrambling the Master Core, DRC and PDE content specialists developed the following general psychometric and content guidelines:

- Items cannot move between blocks.
- DRC and PDE content specialists will work to ensure that the scrambling does not result in making content more difficult than the Master Core item sequence. For example, items of similar cognitive complexity will be swapped rather than random scrambling.
- A block scramble pattern is only valid if it does not contain an invalid key distribution within the block. Additional checks for an invalid key distribution across blocks must be made when combining block scramble patterns to create forms. For example, scrambling must not create more than three (3) of the same key positions in a row.
- A block scramble pattern is only valid if it does not contain an invalid standard (AA/EC) distribution within a block. Additional checks for standard distribution across blocks must be made when combining block scramble patterns to create forms. An exception was made for one mathematics scramble for each grade which ordered items within block by eligible content per PDE request.
- Scrambling should not place a difficult item as the first item in a section or a passage set; however, the first item in a block that does NOT begin a section may be a difficult item since blocks are invisible to the student.
- For subjects with passage-based items, a block scramble pattern is only valid if it does not create dissonance between the items and passage(s).
- Within a set of items connected to a paired set of passages, an item associated with both passages can be swapped only with another item associated with both passages. (These items must remain at the end of the set of items associated with the passage set.)

Table 9–3 shows a summary of the scrambling strategy employed for the PSSA. Each grade and subject used a total of eight different patterns of the core including the Master Core.

Table 9–3. Form Scrambling

Subject	Grade	Forms	Total Patterns	Master Cores
Mathematics	3	9	8	2
Mathematics	4	9	8	2
Mathematics	5	9	8	2
Mathematics	6	9	8	2
Mathematics	7	9	8	2
Mathematics	8	9	8	2
ELA	3	9	8	2
ELA	4	9	8	2
ELA	5	9	8	2
ELA	6	9	8	2
ELA	7	9	8	2
ELA	8	9	8	2
Science	4	12	8	2
Science	8	12	8	2

An important assumption for effectively collapsing forms into pattern groups is that the form spiraling yielded randomly equivalent groups. Table 9–4 provides the count of paper-pencil and online administrations, the mean raw score, the standard deviation by each scramble pattern, form, and mode. Please note that online Form 1 is used for all accommodated administrations and as such reflects different performance than performance on other forms.

Table 9–4M. Mathematics Mean Scores by Form

Subject	Grade	Form	Count (Paper)	RS Mean (Paper)	RS SD (Paper)	Count (CBT)	RS Mean (CBT)	RS SD (CBT)
Mathematics	3	01A	9966	26.70	11.74	6870	21.08	11.07
Mathematics	3	02M	9531	27.10	11.67	2515	29.04	11.20
Mathematics	3	03B	9478	27.20	11.73	2537	28.74	11.10
Mathematics	3	04C	9495	27.21	11.76	2506	29.08	11.04
Mathematics	3	05D	9446	27.13	11.71	2520	28.96	11.26
Mathematics	3	06E	9488	27.17	11.65	2508	28.85	11.16
Mathematics	3	07M	9463	27.20	11.63	2530	28.74	11.23
Mathematics	3	08F	9484	27.11	11.64	2493	29.14	11.07
Mathematics	3	09G	9499	27.33	11.60	2516	28.84	11.15
Mathematics	4	01D	10152	26.79	11.52	7934	22.01	10.69
Mathematics	4	02M	9632	27.34	11.42	2810	29.59	11.05
Mathematics	4	03A	9510	27.34	11.55	2769	29.82	11.01
Mathematics	4	04B	9534	27.35	11.52	2756	29.63	10.96
Mathematics	4	05C	9557	27.35	11.50	2771	29.82	10.96
Mathematics	4	06E	9590	27.42	11.51	2770	29.75	11.04
Mathematics	4	07F	9537	27.34	11.55	2770	29.79	11.09
Mathematics	4	08M	9599	27.51	11.52	2812	29.44	10.86
Mathematics	4	09G	9587	27.75	11.46	2772	29.78	10.99
Mathematics	5	01A	9905	25.27	11.53	8101	20.16	10.45
Mathematics	5	02M	9315	25.80	11.37	2984	27.59	10.94
Mathematics	5	03B	9405	26.15	11.35	2991	27.59	10.89
Mathematics	5	04C	9290	26.05	11.32	3048	27.61	10.93
Mathematics	5	05D	9314	25.87	11.41	3018	27.54	10.91
Mathematics	5	06E	9343	26.20	11.41	3068	27.70	10.94
Mathematics	5	07F	9369	26.09	11.36	3055	27.59	11.06
Mathematics	5	08G	9287	26.13	11.37	3002	27.61	10.90
Mathematics	5	09M	9346	26.17	11.50	2993	27.90	10.94
Mathematics	6	01D	9222	24.63	11.85	9031	21.26	11.14
Mathematics	6	02M	8551	25.50	11.72	3714	27.89	11.57
Mathematics	6	03A	8614	25.43	11.77	3667	27.84	11.36
Mathematics	6	04B	8636	25.72	11.76	3652	28.01	11.60
Mathematics	6	05M	8574	25.62	11.76	3688	27.84	11.42
Mathematics	6	06C	8554	25.39	11.69	3718	27.84	11.46
Mathematics	6	07E	8483	25.49	11.81	3693	27.84	11.52
Mathematics	6	08F	8536	25.57	11.78	3722	27.71	11.47
Mathematics	6	09G	8562	25.60	11.77	3741	27.84	11.68

Table 9–4M (continued). Mathematics Mean Scores by Form

Subject	Grade	Form	Count (Paper)	RS Mean (Paper)	RS SD (Paper)	Count (CBT)	RS Mean (CBT)	RS SD (CBT)
Mathematics	7	01E	9350	22.77	11.77	8340	19.38	10.79
Mathematics	7	02M	8677	23.55	11.46	3821	25.14	11.11
Mathematics	7	03A	8633	23.69	11.60	3776	25.63	11.75
Mathematics	7	04M	8674	23.74	11.67	3821	25.29	11.38
Mathematics	7	05B	8633	23.51	11.65	3790	25.34	11.40
Mathematics	7	06C	8652	23.74	11.66	3815	25.33	11.44
Mathematics	7	07D	8683	23.83	11.64	3792	25.21	11.32
Mathematics	7	08F	8613	23.73	11.76	3805	25.01	11.26
Mathematics	7	09G	8648	23.76	11.73	3756	25.24	11.35
Mathematics	8	01C	9281	23.46	11.72	7924	20.36	10.83
Mathematics	8	02M	8494	24.41	11.83	3926	25.42	11.31
Mathematics	8	03A	8521	24.44	11.87	3917	25.66	11.53
Mathematics	8	04B	8465	24.48	11.82	3871	26.09	11.37
Mathematics	8	05D	8520	24.66	11.89	3914	25.73	11.42
Mathematics	8	06M	8525	24.54	11.82	3906	25.76	11.48
Mathematics	8	07E	8512	24.36	11.75	3911	25.65	11.45
Mathematics	8	08F	8509	24.61	11.77	3913	25.46	11.53
Mathematics	8	09G	8448	24.50	11.60	3911	25.78	11.54

Table 9–4E. ELA Mean Scores by Form

Subject	Grade	Form	Count (Paper)	Raw Score Mean (Paper)	Raw Score SD (Paper)	Count (CBT)	Raw Score Mean (CBT)	Raw Score SD (CBT)
ELA	3	01A	9640	22.31	8.73	6468	17.29	8.02
ELA	3	02M	9595	22.34	8.80	2477	22.89	8.16
ELA	3	03B	9618	22.40	8.90	2510	23.24	8.15
ELA	3	04M	9549	22.55	8.70	2463	23.11	8.47
ELA	3	05C	9600	22.40	8.84	2463	22.78	8.30
ELA	3	06D	9647	22.42	8.72	2465	22.80	8.28
ELA	3	07E	9584	22.63	8.78	2438	22.76	8.31
ELA	3	08F	9563	22.68	8.62	2439	22.72	8.33
ELA	3	09G	9511	22.80	8.71	2469	22.83	8.06
ELA	4	01A	9735	31.50	12.28	7384	24.05	11.33
ELA	4	02M	9682	31.85	12.23	2712	32.76	11.07
ELA	4	03B	9690	32.13	12.35	2699	33.31	11.42
ELA	4	04C	9677	31.97	12.15	2740	33.03	11.27
ELA	4	05D	9694	31.51	12.40	2720	32.74	11.34
ELA	4	06M	9709	31.66	12.21	2688	32.96	11.17
ELA	4	07E	9676	31.85	12.41	2732	33.04	11.46
ELA	4	08F	9707	32.02	12.24	2716	33.54	11.38
ELA	4	09G	9733	32.04	12.32	2717	32.92	11.24
ELA	5	01A	9498	32.92	11.96	7698	25.83	12.00
ELA	5	02M	9459	32.75	12.03	3013	34.16	11.31
ELA	5	03B	9468	33.07	11.73	3001	34.35	11.10
ELA	5	04C	9505	33.15	12.13	2982	35.19	11.40
ELA	5	05D	9415	33.04	11.91	2994	34.26	11.43
ELA	5	06E	9461	33.18	12.06	2984	34.57	11.46
ELA	5	07M	9426	32.84	12.00	2990	34.61	11.71
ELA	5	08F	9431	33.06	11.95	2986	34.46	11.53
ELA	5	09G	9384	33.19	11.92	3003	34.43	11.75
ELA	6	01A	8646	32.40	11.35	8977	27.42	10.97
ELA	6	02M	8593	32.19	11.31	3767	33.46	10.46
ELA	6	03B	8586	32.67	11.49	3763	33.96	10.68
ELA	6	04C	8588	32.53	11.30	3790	33.78	10.56
ELA	6	05M	8588	32.47	11.28	3759	33.52	10.49
ELA	6	06D	8596	32.78	11.51	3786	33.89	10.92
ELA	6	07E	8562	32.46	11.31	3720	33.66	10.75
ELA	6	08F	8615	32.76	11.17	3784	33.87	10.41
ELA	6	09G	8577	32.58	11.61	3729	33.77	10.69

Table 9–4E (continued). ELA Mean Scores by Form

Subject	Grade	Form	Count (Paper)	Raw Score Mean (Paper)	Raw Score SD (Paper)	Count (CBT)	Raw Score Mean (CBT)	Raw Score SD (CBT)
ELA	7	01A	8618	33.98	12.61	8548	27.99	12.48
ELA	7	02M	8544	33.73	12.39	3970	34.73	11.88
ELA	7	03B	8544	33.53	12.50	4001	34.08	12.03
ELA	7	04C	8529	33.67	12.42	3990	34.42	11.97
ELA	7	05D	8520	33.62	12.46	4003	34.73	12.04
ELA	7	06E	8558	33.82	12.49	3997	34.58	12.16
ELA	7	07F	8546	34.04	12.53	4000	34.93	12.23
ELA	7	08G	8567	33.58	12.48	3976	34.72	12.04
ELA	7	09M	8542	33.81	12.59	3978	34.46	12.06
ELA	8	01A	8532	34.51	11.74	8110	29.22	12.30
ELA	8	02M	8365	34.37	11.47	4068	34.67	11.21
ELA	8	03B	8419	34.56	11.52	4116	35.16	11.26
ELA	8	04C	8410	34.74	11.56	4109	35.57	11.35
ELA	8	05D	8368	34.70	11.54	4121	35.17	11.41
ELA	8	06E	8362	34.75	11.65	4104	35.65	11.37
ELA	8	07F	8397	34.56	11.62	4112	35.19	11.45
ELA	8	08M	8425	34.40	11.43	4130	34.99	11.38
ELA	8	09G	8350	34.92	11.52	4157	35.48	11.53

Table 9–4S. Science Mean Scores by Form

Subject	Grade	Form	Count (Paper)	RS Mean (Paper)	RS SD (Paper)	Count (CBT)	RS Mean (CBT)	RS SD (CBT)
Science	4	01A	7508	25.45	9.49	7543	21.96	8.99
Science	4	02M	7016	26.39	9.33	2250	28.11	8.65
Science	4	03B	6925	26.38	9.19	2255	28.07	8.79
Science	4	04C	6977	26.48	9.35	2243	28.31	8.78
Science	4	05D	6971	26.48	9.34	2264	27.94	8.80
Science	4	06E	6963	26.31	9.37	2259	28.29	8.80
Science	4	07F	7015	26.42	9.34	2247	28.22	8.89
Science	4	08G	7022	26.48	9.28	2229	28.00	8.87
Science	4	09M	6965	26.45	9.30	2258	28.16	8.65
Science	4	10B	6963	26.55	9.18	2254	28.00	8.79
Science	4	11C	7016	26.50	9.34	2278	28.19	8.76
Science	4	12D	6991	26.35	9.27	2218	28.32	8.66
Science	8	01A	6657	23.75	10.46	7701	21.11	10.08
Science	8	02M	5891	24.49	10.35	3322	26.67	10.04
Science	8	03B	5939	24.96	10.34	3337	26.70	10.08
Science	8	04C	5883	24.83	10.32	3338	26.56	10.06
Science	8	05D	5877	24.66	10.34	3357	26.36	10.10
Science	8	06E	5902	24.74	10.38	3286	26.71	10.05
Science	8	07F	5855	24.84	10.40	3319	26.54	9.92
Science	8	08G	5955	24.96	10.25	3333	26.81	9.83
Science	8	09M	5909	24.89	10.34	3347	26.34	9.96
Science	8	10B	5904	25.05	10.30	3362	26.68	10.01
Science	8	11C	5896	25.05	10.26	3368	26.49	9.93
Science	8	12D	5948	24.87	10.36	3362	26.44	10.05

Table 9–5 shows the number of students who took each form pattern (recall that pattern M is the Master Core version), and Table 9–6 shows the form to scramble pattern conversion.

Table 9–5. Form Pattern Administration Counts

Subject	Grade	A	B	C	D	E	F	G	M
Mathematics	3	16836	12015	12001	11966	11996	11977	12015	24039
Mathematics	4	12279	12290	12328	18086	12360	12307	12359	24853
Mathematics	5	18006	12396	12338	12332	12411	12424	12289	24638
Mathematics	6	12281	12288	12272	18253	12176	12258	12303	24527
Mathematics	7	12409	12423	12467	12475	17690	12418	12404	24993
Mathematics	8	12438	12336	17205	12434	12423	12422	12359	24851
ELA	3	16108	12128	12063	12112	12022	12002	11980	24084
ELA	4	17119	12389	12417	12414	12408	12423	12450	24791
ELA	5	17196	12469	12487	12409	12445	12417	12387	24888
ELA	6	17623	12349	12378	12382	12282	12399	12306	24707
ELA	7	17166	12545	12519	12523	12555	12546	12543	25034
ELA	8	16642	12535	12519	12489	12466	12509	12507	24988
Science	4	15051	18397	18514	18444	9222	9262	9251	18489
Science	8	14358	18542	18485	18544	9188	9174	9288	18469

Note. Final data was used.

Table 9–6. Form to Pattern Conversion Table

Subject	Grade	1	2	3	4	5	6	7	8	9	10	11	12
Mathematics	3	A	M	B	C	D	E	M	F	G			
Mathematics	4	D	M	A	B	C	E	F	M	G			
Mathematics	5	A	M	B	C	D	E	F	G	M			
Mathematics	6	D	M	A	B	M	C	E	F	G			
Mathematics	7	E	M	A	M	B	C	D	F	G			
Mathematics	8	C	M	A	B	D	M	E	F	G			
ELA	3	A	M	B	M	C	D	E	F	G			
ELA	4	A	M	B	C	D	M	E	F	G			
ELA	5	A	M	B	C	D	E	M	F	G			
ELA	6	A	M	B	C	M	D	E	F	G			
ELA	7	A	M	B	C	D	E	F	G	M			
ELA	8	A	M	B	C	D	E	F	M	G			
Science	4	A	M	B	C	D	E	F	G	M	B	C	D
Science	8	A	M	B	C	D	E	F	G	M	B	C	D

SCRAMBLING ANALYSIS

FORM LEVEL

The test-level and item-level effects of scrambling are presented in the following section. Table 9–7 shows the mean raw score difference from the Master Core for each scramble pattern (scramble pattern mean minus Master Core mean). The highlighted mean differences are statistically significant at family-wise Type I error rate (alpha) 0.01 with two-sample t-test. For example, with grade 3 math, seven two sample t-tests were conducted (Master Core vs. A, B, C, D, E, F, and G) and each test had Type I error rate (alpha) of 0.001428571 to keep the family-wise Type I error rate 0.01. Form 1, the form designated for use with accommodations was included in these analyses and as expected, a statistically significant difference was found wherever a pattern corresponds to Form 1. This difference, however, is likely attributable to the general pattern of lower item and test level scores for examinees using accommodations, and not to scrambling effects. Form 1 for all ELA, and science grades followed pattern A, whereas math forms differed by grade level.

Table 9–7 shows that, aside from results that are likely influenced by examinees receiving accommodations, 0 of 36, 6 of 36, and 0 of 8 scramble pattern raw score means showed a statistically significant difference from the Master Core in mathematics, ELA, and science, respectively.

Table 9–7. Mean Raw Score Differences from the Master Core

Subject	Grade	A	B	C	D	E	F	G
Mathematics	3	-3.11	0.01	0.08	0.00	0.01	0.02	0.13
Mathematics	4	0.01	-0.04	0.01	-3.20	0.05	-0.01	0.31
Mathematics	5	-3.44	0.09	0.02	-0.13	0.16	0.05	0.08
Mathematics	6	-0.10	0.15	-0.12	-3.29	-0.05	-0.04	0.02
Mathematics	7	0.16	-0.06	0.10	0.12	-2.95	0.00	0.09
Mathematics	8	0.00	0.16	-2.79	0.17	-0.06	0.05	0.08
ELA	3	-2.26	0.01	-0.08	-0.06	0.10	0.13	0.24
ELA	4	-3.70	0.39	0.21	-0.22	0.12	0.36	0.24
ELA	5	-3.44	0.20	0.46	0.16	0.33	0.22	0.31
ELA	6	-2.82	0.38	0.23	0.44	0.14	0.41	0.25
ELA	7	-3.03	-0.32	-0.12	-0.06	0.03	0.30	-0.09
ELA	8	-2.60	0.23	0.48	0.32	0.51	0.23	0.57
Science	4	-3.14	0.01	0.08	0.00	-0.04	0.02	0.01
Science	8	-3.01	0.27	0.17	0.01	0.10	0.11	0.27

Note. Highlighted cells indicate the scramble pattern is statistically significantly different from the Master Core form at family-wise α = 0.01 (corrected for pairwise comparisons) for each subject and grade.

ITEM LEVEL

The item level scrambling was examined using differential item functioning (DIF) described in Chapter Five. The *Mantel-Haenszel* procedure (Mantel & Haenszel, 1959) for detecting differential item functioning is a commonly used technique for MC items in educational testing and contrasts a focal group with a reference group.

In this section, master core form is reference group and non-master core forms were the focal groups. The items are assigned a severity code based on the magnitude of the effect sizes. Items classified as A+ or A- have little or no statistical indication of DIF. Items classified as B+ or B- have some indication of DIF but may be judged to be acceptable for future use. Items classified as C+ or C- have strong evidence of DIF and should be reviewed. Table 9–8 shows the number of items with C DIF items. There was 1 item in Mathematics grade 6 that exhibited C-level DIF on one form (G).

Table 9–8. The Number of Items with C DIF for Scrambling Effect

Subject	Item Type	Grade	A	B	C	D	E	F	G
Mathematics	MC	3	0	0	0	0	0	0	0
Mathematics	MC	4	0	0	0	0	0	0	0
Mathematics	MC	5	0	0	0	0	0	0	0
Mathematics	MC	6	0	0	0	0	0	0	1
Mathematics	MC	7	0	0	0	0	0	0	0
Mathematics	MC	8	0	0	0	0	0	0	0
ELA	MC	3	0	0	0	0	0	0	0
ELA	MC	4	0	0	0	0	0	0	0
ELA	MC	5	0	0	0	0	0	0	0
ELA	MC	6	0	0	0	0	0	0	0
ELA	MC	7	0	0	0	0	0	0	0
ELA	MC	8	0	0	0	0	0	0	0
Science	MC	4	0	0	0	0	0	0	0
Science	MC	8	0	0	0	0	0	0	0

CHAPTER TEN: SUMMARY DEMOGRAPHIC, PROGRAM, AND ACCOMMODATION DATA FOR THE 2024 PSSA

ASSESSED STUDENTS

The PSSA assessed students include those from public schools who are required to participate as well as those from a small number of non-public schools (fewer than 500 students per grade level) that elected to participate. Also included were home-schooled students (fewer than 100 students per grade) and a small number of foreign exchange students (generally fewer than 30 students per grade). An exception was granted for those IEP students with quite significant cognitive impairments who met each of the following criteria, making them eligible to participate in the Pennsylvania Alternate System of Assessment (PASA) for mathematics, reading, and science: 1) was enrolled in the assessed grade level for the subject area, 2) had a very severe cognitive disability, 3) required very intensive instruction, 4) required very extensive adaptation and support to perform or participate meaningfully, 5) required very substantial modification of the general education curriculum, and 6) participated in the general education curriculum that differed markedly in form and substance from that of other students. (See the *2024 Pennsylvania System of School Assessment: Handbook for Assessment Coordinators*.)

Results for this chapter are presented in tables for the three PSSA subject areas (mathematics, ELA, and science). Accompanying each numbered table is a letter (M, E, or S) to designate the subject area. Mathematics results are indicated by "M," ELA results are indicated by "E," and science results are indicated by "S." Tables 10–1E through 10–1S provide a summary of the assessed students for each subject. The last line combines the number of paper and online tests that are processed. This number is typically less than the "Used Answer Booklets Received" column shown in Table 8–1. The reason for the difference is that completely blank answer booklets (no student name and no items responded to) are removed from the initial batch of materials scanned. See Chapter Eight for more details on processing. Some processed booklets have student identifying information but will not receive a score. These results are presented within the 10–1 tables. Explanations for non-assessed students are provided later in this chapter.

Table 10–1M. Students Assessed on the 2024 PSSA: Mathematics

Description	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
Total number of PPT processed (Number)	90,310	91,324	89,312	82,906	84,571	84,212
Total number of CBT processed (Number)	28,054	31,395	33,718	40,553	40,834	41,715
Total number of tests processed (Number)	118,364	122,719	123,030	123,459	125,405	125,927
Total number of tests processed with a score (Number)	116,137	120,208	120,088	119,608	120,609	119,557
Total number of tests processed with a score (Percent)	98.1	98	97.6	96.9	96.2	94.9
Total number of tests processed without a score (Number)	2,227	2,511	2,942	3,851	4,796	6,370
Total number of tests processed without a score (Percent)	1.9	2	2.4	3.1	3.8	5.1
Students with a Mathematics score used in state summaries (Number)	112,938	116,982	116,948	116,545	117,535	116,695

Notes. PPT = Paper/Pencil Test
CBT = Computer-Based Test

Table 10–1E. Students Assessed on the 2024 PSSA: ELA

Description	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
Total number of PPT processed (Number)	90,860	92,198	89,739	82,270	82,588	82,162
Total number of CBT processed (Number)	27,169	30,246	33,005	40,896	42,461	43,471
Total number of tests processed (Number)	118,029	122,444	122,744	123,166	125,049	125,633
Total number of tests processed with a score (Number)	114,889	118,822	119,003	118,724	119,904	118,999
Total number of tests processed with a score (Percent)	97.3	97	97	96.4	95.9	94.7
Total number of tests processed without a score (Number)	3,140	3,622	3,741	4,442	5,145	6,634
Total number of tests processed without a score (Percent)	2.7	3	3	3.6	4.1	5.3
Students with an English Language Arts score used in state summaries (Number)	112,752	116,699	116,931	116,706	117,766	117,010

Notes. PPT = Paper/Pencil Test
CBT = Computer-Based Test

Table 10–1S. Students Assessed on the 2024 PSSA: Science

Description	Gr. 4	Gr. 8
Total number of PPT processed (Number)	88,942	78,453
Total number of CBT processed (Number)	33,639	47,253
Total number of tests processed (Number)	122,581	125,706
Total number of tests processed with a score (Number)	119,970	119,103
Total number of tests processed with a score (Percent)	97.9	94.7
Total number of tests processed without a score (Number)	2,611	6,603
Total number of tests processed without a score (Percent)	2.1	5.3
Students with a Science score used in state summaries (Number)	116,728	116,247

Notes. PPT = Paper/Pencil Test
CBT = Computer-Based Test

NON-ASSESSED STUDENTS

As may be observed from Tables 10–1E through 10–1S, not all students were assessed. Although there are a variety of reasons for this, the major ones pertain to the following:

- Extended absence from school that continued beyond the assessment window.
- Failure to meet the attempt criteria on one or more subject-area test sections and no exclusion code was marked by school personnel. For mathematics, ELA, and science, the attempt criteria required a minimum of five items to be completed in each subject area section.
- EL students in their first year in U.S. schools (ELA only).
- Medical emergency.
- Parental request in which the student's parent/guardian reviewed the assessment, found it to be in conflict with his/her religious belief, and requested in writing that the student be excluded from participation.
- Parental request in which the student's parent/guardian chose to have his/her child excluded from participation based on reasons other than conflict with religious belief, even though there is no provision for this exclusion in Pennsylvania regulation.
- Other reasons.

The numbers of students without test scores for these reasons are presented in Tables 10–2E through 10–2S.

Table 10–2M. Counts of Students without Scores on the 2024 PSSA: Mathematics

Reason for Non-Assessment	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
Extended absence from school (Number)	199	238	291	475	733	920
Extended absence from school (Percent)	8.9	9.5	9.9	12.3	15.3	14.4
Non-attempt (Number)	318	340	355	592	780	880
Non-attempt (Percent)	14.3	13.5	12.1	15.4	16.3	13.8
Medical emergency (Number)	121	112	158	206	272	335
Medical emergency (Percent)	5.4	4.5	5.4	5.3	5.7	5.3
Parental request - Chapter 4 (Number)	708	854	960	1,224	1,432	2,025
Parental request - Chapter 4 (Percent)	31.8	34	32.6	31.8	29.9	31.8
Parental request - Other reasons (Number)	680	735	872	949	1,061	1,601
Parental request - Other reasons (Percent)	30.5	29.3	29.6	24.6	22.1	25.1
Other reasons (Number)	201	232	306	405	518	609
Other reasons (Percent)	9	9.2	10.4	10.5	10.8	9.6
Total not assessed (Number)	2,227	2,511	2,942	3,851	4,796	6,370

Table 10–2E. Counts of Students without Scores on the 2024 PSSA: ELA

Reason for Non-Assessment	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
Extended absence from school (Number)	158	194	237	398	647	769
Extended absence from school (Percent)	5	5.4	6.3	9	12.6	11.6
Non-attempt (Number)	811	993	799	872	1,005	1,120
Non-attempt (Percent)	25.8	27.4	21.4	19.6	19.5	16.9
EL in first year in U.S. schools (Number)	422	439	418	371	313	282
EL in first year in U.S. schools (Percent)	13.4	12.1	11.2	8.4	6.1	4.3
Medical emergency (Number)	103	103	122	174	235	284
Medical emergency (Percent)	3.3	2.8	3.3	3.9	4.6	4.3
Parental request - Chapter 4 (Number)	731	864	970	1,249	1,430	1,988
Parental request - Chapter 4 (Percent)	23.3	23.9	25.9	28.1	27.8	30
Parental request - Other reasons (Number)	666	732	848	946	1,012	1,569
Parental request - Other reasons (Percent)	21.2	20.2	22.7	21.3	19.7	23.7
Other reasons (Number)	249	297	347	432	503	622
Other reasons (Percent)	7.9	8.2	9.3	9.7	9.8	9.4
Total not assessed (Number)	3,140	3,622	3,741	4,442	5,145	6,634

Table 10–2S. Counts of Students without Scores on the 2024 PSSA: Science

Reason for Non-Assessment	Gr. 4	Gr. 8
Extended absence from school (Number)	310	1,067
Extended absence from school (Percent)	11.9	16.2
Non-attempt (Number)	340	934
Non-attempt (Percent)	13	14.1
Medical emergency (Number)	121	361
Medical emergency (Percent)	4.6	5.5
Parental request - Chapter 4 (Number)	844	2,015
Parental request - Chapter 4 (Percent)	32.3	30.5
Parental request - Other reasons (Number)	731	1,595
Parental request - Other reasons (Percent)	28	24.2
Other reasons (Number)	265	631
Other reasons (Percent)	10.1	9.6
Total not assessed (Number)	2,611	6,603

COMPOSITION OF SAMPLE USED IN SUBSEQUENT TABLES

Students included in the following demographic analyses were those who contributed to state summary statistics, using the final individual student data file provided to the Pennsylvania Department of Education in August 2024. Students not included in the state summary data were those who were 1) enrolled in a Pennsylvania school after October 1, 2023, 2) coded as EL and enrolled in a US school fewer than 12 cumulative months, 3) foreign exchange students, 4) home schooled, 5) enrolled in a non-public school, or 6) without a subject-area test score.

Demographic data for students taking the PSSA is presented separately for each subject area in Appendix I. Results for accommodations received were collected separately by subject area and are presented in separate tables as well.

COLLECTION OF STUDENT DEMOGRAPHIC INFORMATION

Data for analyses involving demographic characteristics were obtained primarily from information supplied by school district personnel through the Pennsylvania Information Management System (PIMS) and subsequently transmitted to DRC. Updates of attribution data were carried out through the DRC Attribution System. Some data such as accommodation information is marked directly on the student answer document at the time the PSSA is administered.

PARTICIPATION BY ADMINISTRATION MODE

Online (CBT) testing was available for the PSSA. As anticipated the majority of students were assessed utilizing paper/pencil tests (PPT). The bottom row of the tables presented in Appendix I present the number of students involved in the PPT and CBT administrations as well as Table 9–2 in Chapter Nine. Overall, the percent of students responding by CBT was approximately 23.28 to 38.29 percent for mathematics and ELA, and science. There was a substantial increase across each subject and grade level between 2019 and 2021. For ELA and math, higher grade levels tend to administer more computer-based tests.

DEMOGRAPHIC CHARACTERISTICS

Frequency data for each demographic category is presented in Appendix I. Percentages are based on students with scores in a subject area, which are shown at the bottom of the appropriate table. Included are students receiving education in a non-traditional setting, such as a court-agency placement.

TEST ACCOMMODATIONS PROVIDED

School personnel supplied information regarding accommodations that a student may have received while taking the PSSA. Accommodations are classified in terms of presentation, response, setting, and timing to enable students to better manage disabilities that hinder their ability to learn and respond to assessments. An accommodations manual entitled, 2024 *Accommodations Guidelines: Keystone Exams and PSSA* guides the development and analysis of the PSSA. This manual may be found on the PDE website at www.education.pa.gov. A glossary of accommodation terms as applied to the PSSA is provided in Table 10–3 at the end of this chapter.

The frequency with which accommodations were utilized for PPT and CBT formats is summarized separately for each subject area in Appendix J. Tabled values are based on all students whose score contributed to state summary statistics in a given subject area. In the tables an NA denotes those instances in which a particular accommodation does not apply to one of the testing modes.

PRESENTATION ACCOMMODATIONS RECEIVED

Presentation Accommodations are those that provide alternate ways for students to access and process printed instructional material and assessments. These include auditory, tactile, visual, and combined auditory/visual modes of presentation. The number of presentation accommodations provided in the 2024 PSSA varied by subject and testing mode and are presented in Appendix J.

As depicted in Appendix J, the actual frequencies were low, with all but the read-aloud and audio accommodations being used by less than one percent of assessed students statewide. Among accommodations specific to CBT the use of audio was the most frequent. For CBT administration, there were unique accommodations, audio, color chooser, contrasting text chooser, and refreshable Braille, available for mathematics, ELA, and science. Video sign language was also available for mathematics and science.

RESPONSE ACCOMMODATIONS RECEIVED

Response Accommodations permit students to complete assignments, tests, and activities in different ways to solve or organize problems using some type of assistive device or organizer. The number of response accommodations provided on the 2024 PSSA varied by subject and testing mode and are presented in Appendix J.

SETTING ACCOMMODATIONS RECEIVED

Setting Accommodations permit a change in location in which a student receives instruction or participates in an assessment. There were four categories of setting accommodations for mathematics, ELA, and science on the 2024 PSSA. As depicted in Appendix J, the most common accommodation across subject areas was small group setting. This was true for both PPT and CBT modes of administration.

TIMING ACCOMMODATIONS RECEIVED

Timing Accommodations involve a change in the allowable length of time to complete assignments or assessments, including the way in which time is organized. There were four categories of timing accommodations for mathematics, ELA, and science on the 2024 PSSA. As depicted in Appendix J, the most commonly used accommodation was extended time, followed by frequent breaks. One consistent finding was that students responding by CBT had a higher usage of frequent breaks and extended time than observed for students taking a PPT.

ACCOMMODATION RATE FOR NON-IEP AND IEP STUDENTS

A comparison between students without an IEP (non-IEP students) and those with an IEP (IEP students) with regard to having received an accommodation is provided in Appendix K. In this data, accommodated means that a student received one or more of the total number of accommodations available for a given subject area; however, this also varies with administration mode. The total number of available accommodations for students taking a PPT was as follows: mathematics and science, 31; and ELA, 28. The number of available accommodations for students taking a CBT was as follows: mathematics and science, 29; and ELA, 25. The category of non-accommodated indicates that a student did not receive any accommodation during testing.

As expected, the general pattern of findings reveals a consistent and substantially higher percentage of IEP students receiving an accommodation in contrast to non-IEP students. This same pattern holds true regardless of test administration mode and PSSA test.

THE INCIDENCE OF ACCOMMODATIONS AND IEP AND EL STATUS

As noted in Appendix L, students with an IEP received an accommodation of some type far more often than non-IEP students, with the exception of the extended time accommodation. As the PSSA is designed as having no time limit, any student may opt for extended time. Certain accommodations with very low frequencies are specific to particular disabilities while others, such as extended time are far more common and may also apply to any student. Accommodations having the largest frequencies can potentially supply the most stable data when separated out for subgroup analysis. Listed below are the most commonly used accommodations, which were chosen for display.

- Some test items/questions read aloud (mathematics, science)
- All test items/questions read aloud (mathematics, science)
- Small group setting (mathematics, ELA, science)
- Extended time (mathematics, ELA, science)
- Frequent breaks (mathematics, ELA, science)
- Some language questions/text-dependent analysis questions read aloud (ELA)
- All language questions/text-dependent analysis questions read aloud (ELA)

Coding for IEP is dichotomous, as students are classified IEP and non-IEP. For purposes of this analysis, an English Learner (EL) is a student classified EL and enrolled in a U.S. school fewer than 12 cumulative months. All other assessed students, including those who have exited an ESL/bilingual program and are in the first or second year of monitoring, are regarded as non-EL. Students coded as EL and enrolled in a U.S. school fewer than 12 cumulative months, are excluded from state summary statistics as stated earlier in this chapter.

Customarily, a considerably larger percentage of IEP students receive a given accommodation than non-IEP students. Although less frequent, certain accommodations also have a high frequency rate for EL students. To separate out the effect of being classified IEP or EL, four possible combinations are presented in the Appendix L. These include general education students who are neither IEP nor EL, students who are IEP but non-EL, students who are EL but non-IEP, and students who are both IEP and EL. The bottom row for each grade provides the total number of assessed students in each of the four classifications.

GLOSSARY OF ACCOMMODATION TERMS

Table 10–3 provides a brief description of accommodation terms as used in the PSSA. Accommodation data was supplied by school personnel as noted in the left column of the table. The right column contains an explanation derived from the PDE publication, 2024 *Accommodations Guidelines: Keystone Exams and PSSA*. This manual may be found on the PDE website at www.education.pa.gov.

Table 10–3. Glossary of Accommodation Terms as Applied in the 2024 PSSA

Type of Testing Accommodation	Explanation
Student used the following Presentation Accommodations	
Braille format	Students may use a Braille format of the test. Answers must then be transcribed into the answer booklet without alteration.
Large print format	Students with visual impairments may use a large print format. Answers must then be transcribed into the answer booklet without alteration.
Magnification device	Devices to magnify print may be used for students with visual impairments and/or print disabilities.
Color overlay	Students with visual impairments may place a color overlay on a printed page of the test document to make text more readable.
Computer assistive technology (e.g., electronic screen reader) (PDE approval required)	Students with severe visual disabilities that prevent them from accessing instructional material or performing the skill may use computer assistive technology; however, PDE must approve the program and functions prior to the test window.
Test items/questions/text-dependent analysis signed	Deaf/hearing impaired students may receive test directions from a qualified interpreter. Signing is also permitted for PSSA ELA writing section multiple-choice items, and text-dependent analysis questions and all items in PSSA mathematics and science and for Keystone Algebra and Biology.
Test items/questions/text-dependent analysis interpreted for EL	A qualified interpreter may translate directions or clarify instructions for the assessments. The interpreter may translate but not define specific words or test questions on the PSSA mathematics, science, ELA writing section multiple-choice items, and text-dependent analysis questions and Keystone Algebra and Biology exams.
Some or all test items/questions/text-dependent analysis read aloud	Students unable to decode text visually may have items/questions read aloud for PSSA ELA writing section multiple-choice items, and text-dependent analysis questions and all items in PSSA mathematics and science and for Keystone Algebra and Biology; however, words may not be defined. For a few students, this accommodation is available on the full ELA and Literature Exams if the student meets specified criteria listed in the *Accommodations Guidelines*.
Amplification device	In addition to using hearing aids, an amplification device to enhance clarity may be required.
Other (PDE approval required)	Other presentation accommodations indicated in the *Accommodation Guidelines* may be provided; however, PDE approval is required prior to the test window.
Spanish version for PSSA (Math and Science) and Keystone (Algebra and Biology)	Students whose first language is Spanish and who have been enrolled in U.S. schools for fewer than three years may take this version.
Student used the following Online Presentation Accommodations	
Audio	The online test form reads permissible test directions and items for a student unable to decode text. The accommodation must be marked within the test engine system. The accommodation is available on PSSA mathematics, science, ELA writing section multiple-choice items, and text-dependent analysis questions and Keystone Algebra and Biology exams.
Video sign language (per accommodations guidelines)	Eligible students who use a sign language accommodation during instructional periods may use VSL on the PSSA mathematics and science and Keystone Algebra and Biology assessments.
Color chooser or contrasting text chooser	The use of this accommodation enables a visually impaired student to change the background color or text color to make text more readable.

Type of Testing Accommodation	Explanation
Refreshable Braille	This accommodation allows students to use a screen reader to produce a Braille translation output.

Table 10–3 (continued). Glossary of Accommodation Terms as Applied in the 2024 PSSA

Type of Testing Accommodation	Explanation
Student used the following Response Accommodations	
Brailler/Note taker (per *Accommodations Guidelines*)	Students using this device as part of their regular instructional program may use it on the assessments; however, without thesaurus, spelling, or grammar checker.
Test administrator scribed **open-ended** responses at student's direction	A test administrator may record word-for-word exactly what a student dictated directly into the test booklet. This includes MC and OE responses Keystone Algebra, Biology, and Literature tests and PSSA mathematics, ELA, and science.
Test administrator marked **multiple-choice** responses at student's direction	A test administrator may mark an answer booklet at the direction of a student (e.g., a student may point to an MC answer with the test administrator marking the response in the answer booklet).
Test administrator transcribed student responses (per **Accommodations Guidelines**)	A test administrator may transcribe (copy) a student's written, typed, or keyed response into a standard answer booklet.
Qualified Interpreter translated, transcribed, and/or scribed student's **signed** responses	A qualified interpreter may interpret a student's **signed** responses into written English for Keystone Algebra and Biology exams, and PSSA mathematics and science assessments. Interpreters are not permitted to make corrections or change the meaning of the response.
Qualified Interpreter translated, transcribed, and/or scribed EL student responses	A qualified interpreter may interpret a student's non-English oral responses into written English for Keystone Algebra and Biology exams, and PSSA mathematics and science assessments. Interpreters are not permitted to make corrections or change the meaning of the response.
Mixed-mode test administration	Examinee taking the PSSA in computer-based mode provides handwritten responses to constructed-response items in paper answer booklet.
Augmentative communication device	Students with severe communication difficulties may use a special device to convey responses, which must be transcribed into the answer booklet by the test administrator.
Keyboard, word processor, or computer (per *Accommodations Guidelines*)	This is an allowable accommodation as a typing function only for students with the identified need. Supports such as dictionaries, thesauri, spell checkers, and grammar checkers must be turned off. Answers must then be transcribed into the answer booklet without alteration.
Translation dictionary for EL student	A word-to-word dictionary that translates native language to English (or vice versa) without word definitions or pictures is allowed on any portion of the Keystone Algebra and Biology exams, and PSSA mathematics and science tests.
Computer assistive technology (e.g., electronic screen reader) (PDE approval required)	Students with blindness or extremely low vision may use dictate text into a computer. Responses must be transcribed verbatim into student's regular answer booklet.
Other (per *Accommodations Guidelines* or PDE approval)	Other accommodations may be appropriate and available if they do not compromise the integrity of the assessment. Documentation must be provided to PDE.
Student used the following Setting Accommodations	
Hospital/home testing	A student who is confined to a hospital or to home during the testing window may be tested in that environment.

Table 10–3 (continued). Glossary of Accommodation Terms as Applied in the 2024 PSSA

Type of Testing Accommodation	Explanation
One-on-one setting	One-on-one settings are necessitated in certain instances, such as to reduce distraction or in the use of certain devices. A separate room may be used to reduce distraction.
Small group setting	Some students may require a test setting with fewer students or a setting apart from all other students to minimize distraction.
Smartphone or smartwatch for medical/glucose monitoring	Student had an approved electronic device on their desk to be used as a medical device.
Other (per *Accommodations Guidelines* or PDE approval)	Other accommodations may be appropriate and available if they do not compromise the integrity of the assessment. Documentation must be provided to PDE.
Student used the following Timing Accommodations	
Extended time	Extended time may be allotted for each section of the test as a planned accommodation to enable students to finish.
Frequent breaks	Frequent breaks (breaks within a test section) may be scheduled for the completion of each test section; however, a test section must be completed within one school day.
Changed test schedule	Students whose disabilities prevent them from following a regular, planned test schedule may follow an individual schedule that enables test completion.
Other (per *Accommodations Guidelines* or PDE approval)	Other accommodations may be appropriate and available if they do not compromise the integrity of the assessment. Documentation must be provided to PDE.

CHAPTER ELEVEN: CLASSICAL ITEM STATISTICS

This chapter provides an overview of the two most familiar item-level statistics obtained from any classical (traditional) item analysis: item difficulty and item discrimination. The following results were estimated using final data and pertain only to operational PSSA items (i.e., those items that contributed to a student's total test score). Rasch item statistics are discussed in Chapter Twelve and test-level statistics are found in Chapter Seventeen.

ITEM-LEVEL STATISTICS

Appendix F provides classical item statistics and Rasch parameters for all PSSA items. Results are organized by subject and grade. These statistics represent the item characteristics most often used to determine whether an item functioned properly and/or how a group of students performed on a particular item. The item statistics in the appendices include *p*-values for multiple-choice (MC) items and item means for open-ended (OE)[1] items (indicators of item difficulty); point-biserial correlations for MC items and item-test correlations for OE items (indicators of item discrimination); and the proportion of students selecting each MC item option or earning each OE item score point.

ITEM DIFFICULTY

At the most general level, an item's difficulty is indicated by its mean score in some specified group (e.g., grade level).

$$\bar{x} = \frac{1}{n} \cdot \sum_{i=1}^{n} x_i$$

In the mean score formula above, the individual item scores (x_i) are summed and then divided by the total number of students (*n*). For multiple-choice items, student scores are represented by 0s and 1s (0 = wrong, 1 = right). With 0–1 scoring, the equation above also represents the number of students correctly answering the item divided by the total number of students. Therefore, this is also the proportion correct for the item, or the *p*-value. In theory, *p*-values can range from 0.00[2] to 1.00 on the proportion-correct scale. For example, if an item has a *p*-value of 0.89, it means 89 percent of the students answered the item correctly. Additionally, this value might also suggest that the item was relatively easy and/or the students who attempted the item were relatively high achievers. In other words, item difficulty and student ability are somewhat confounded.

For OE items, mean scores can range from the minimum possible score (usually zero) to the maximum possible score (e.g., four points in the case of some mathematics, ELA, and science items). Sometimes a pseudo *p*-value is provided for an OE item. This is done by dividing the mean item score by the maximum possible item score.

The minimum and maximum extremes of the difficulty scale are typically not seen in applied practice. However, understanding the extremes helps illustrate that relatively lower values correspond to more difficult items, and that relatively higher values correspond to easier items. (As a result, some assert that this index would be more accurately referred to as the item's easiness.)

Item difficulty is an important consideration for the PSSA tests because of the ranging achievement levels of students in Pennsylvania (Below Basic, Basic, Proficient, and Advanced). Items that are either very hard or very easy provide little information about student differences in achievement. However, an item answered correctly by a high percentage of students would suggest that the knowledge or skill the item measures has been mastered by most students. Conversely, an item answered incorrectly by a low percentage of students would suggest few students have mastered the knowledge or skill the item taps. On a standards-referenced test like the PSSA, a test development goal is to include a wide range of item difficulties.

[1] OE items for ELA include Short-Answer (SA), Evidence-Based Selected-Response (EBSR), Text-Dependent Analysis (TDA).
[2] For MC items with four response options, pure random guessing would lead to an expected *p*-value of 0.25.

ITEM DISCRIMINATION

At the most general level, item discrimination[3] indicates an item's ability to differentiate between high and low achievers. It is expected that students with high ability (i.e., those who perform well on the PSSA overall) would be more likely to answer any given PSSA item correctly, while students with low ability (i.e., those who perform poorly on the PSSA overall) would be less likely to answer the same item correctly. For the PSSA tests, Pearson's product-moment correlation coefficient between item scores and test scores is used to indicate discrimination. (As commonly practiced, DRC removes the item score from the total score such that the resulting correlations will not be spuriously high.) The correlation coefficient can range from -1.0 to +1.0. If this expectation is met (high-scoring students tend to answer the item correctly while low-scoring students answer the item incorrectly), the correlation between the item score and the total test score will be both positive and noticeably large in its magnitude (i.e., well above zero), meaning the item is a good discriminator between high and low ability students. This should be the case for all PSSA operational test items.

In summary, the correlation will be positive in value when the mean test score of the students answering the item correctly is higher than the mean test score of the students answering the item incorrectly.[4] In other words, this indicates that students who did well on the total test tended to do well on the item as well. However, an interaction can exist between item discrimination and item difficulty. Items answered correctly (or incorrectly) by a large proportion of examinees (i.e., the items have extreme *p*-values) can have reduced power to discriminate, and thus, can have lower correlations.

Discrimination is an important consideration for the PSSA because the use of more discriminating items on a test is associated with more reliable test scores. This in turn means that score estimates will be more precise (i.e., there will be smaller confidence intervals around the scores) and, perhaps more importantly, that more accurate performance level placements will be made. The issues of reliability, confidence intervals, and performance level classifications are further discussed in Chapter Eighteen.

[3] As noted earlier, the discrimination index for PSSA dichotomously-scored MC items is typically referred to as the point-biserial correlation coefficient. For OE items, the term item-test correlation is sometimes used.

[4] It is legitimate to view the point-biserial correlation as a standardized mean difference. A positive value indicates students who chose that response had a higher mean score than the average student; a negative value indicates students who chose that response had a lower than average mean score.

CLASSICAL ITEM ANALYSIS RESULTS

Table 11–1 provides the summary statistics for the difficulty and discrimination with respect to each subject and grade. The spread of item difficulties and discriminations can be seen in both Table 11–1 and Figure 11–1. There is a wide range of difficulties across all subjects, where *p*-values typically range from approximately 0.30 to approximately 0.85. Average *p*-values are consistent with test specifications. The item-total correlations typically range from about 0.20 to 0.70, where higher item-total correlations are often observed for OE items (see Table 11–2).

Table 11–1. Summary Statistics of Difficulty and Discrimination by Subject and Grade

Subject	Grade	Mean *P*-val.	Min *P*-val.	Q1 *P*-val.	Median *P*-val.	Q3 *P*-val.	Max *P*-val.	Mean I-T Corr.	Min I-T Corr.	Q1 I-T Corr.	Median I-T Corr.	Q3 I-T Corr.	Max I-T Corr.
Mathematics	3	0.53	0.30	0.43	0.50	0.61	0.87	0.45	0.21	0.38	0.44	0.53	0.75
Mathematics	4	0.56	0.32	0.43	0.56	0.65	0.86	0.45	0.23	0.38	0.44	0.52	0.74
Mathematics	5	0.51	0.24	0.36	0.49	0.60	0.89	0.43	0.26	0.36	0.42	0.51	0.71
Mathematics	6	0.52	0.29	0.43	0.51	0.59	0.93	0.46	0.24	0.37	0.46	0.52	0.75
Mathematics	7	0.48	0.25	0.38	0.48	0.57	0.84	0.44	0.22	0.37	0.42	0.51	0.78
Mathematics	8	0.50	0.27	0.39	0.48	0.60	0.81	0.44	0.26	0.37	0.42	0.48	0.75
ELA	3	0.51	0.32	0.42	0.49	0.59	0.74	0.39	0.16	0.32	0.40	0.47	0.63
ELA	4	0.54	0.25	0.45	0.53	0.65	0.87	0.41	0.23	0.34	0.41	0.48	0.66
ELA	5	0.53	0.28	0.42	0.53	0.64	0.76	0.40	0.15	0.32	0.41	0.48	0.64
ELA	6	0.52	0.29	0.45	0.50	0.57	0.85	0.38	0.19	0.30	0.37	0.46	0.58
ELA	7	0.55	0.36	0.44	0.56	0.63	0.80	0.42	0.20	0.35	0.44	0.48	0.64
ELA	8	0.56	0.34	0.44	0.56	0.65	0.79	0.40	0.19	0.31	0.41	0.49	0.62
Science	4	0.55	0.36	0.43	0.53	0.65	0.84	0.37	0.20	0.29	0.36	0.44	0.64
Science	8	0.53	0.29	0.43	0.56	0.64	0.76	0.41	0.25	0.33	0.42	0.49	0.66

Note. I-T Corr. is the item-test score correlation.

Table 11–2 disaggregates results for the MC and OE items. The mean *p*-values for MC items ranged from about 0.49 to 0.57 for Mathematics and from 0.53 to 0.56 for ELA. The mean *p*-values for MC items for Science grade 4 was 0.54 and 0.55 for grade 8. On average, OE items were slightly more difficult for mathematics, where *p*-values ranged from 0.33 to 0.49. *P*-values for ELA OE items were similar to be slightly lower that of MC items. OE items were slightly easier for Grade 4 science but slightly more difficult for Grade 8 science, where the *p*-values for OE items was 0.58 and 0.43, respectively.

The mean item-test correlations ranged from roughly 0.35 to 0.43 and 0.46 to 0.74 for the MC and OE items, respectively. These are similar to historic trends. The OE correlations tended to be higher than the MC correlations, which is not surprising because the OE items include more score points. Based on the distribution of the discrimination (correlation) statistics, the overall item quality appears quite good. However, it is difficult to make global conclusions about overall test quality from these item statistics alone. With that caveat in mind, the results presented in this chapter indicate that the PSSA item difficulty and discrimination were in expected and acceptable ranges, and further evidence of the quality of the internal test structure is provided in the chapters that follow.

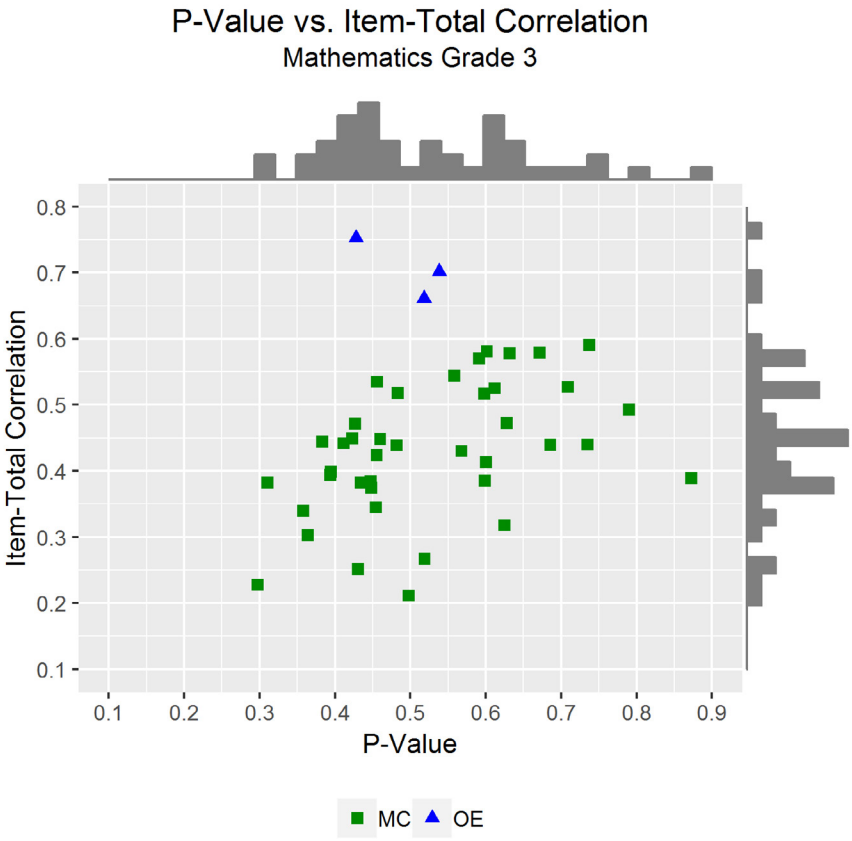
Table 11–2. Sum and Mean Statistics for MC and OE Items

Subject	Grade	MC Points	MC Sum	MC Mean *P*-val.	MC Mean I-T Corr.	OE Points	OE Sum	OE Mean P-val.	OE Mean I-T Corr.
Mathematics	3	40	21.14	0.53	0.43	12	5.94	0.49	0.71
Mathematics	4	40	22.78	0.57	0.43	12	4.66	0.39	0.71
Mathematics	5	40	20.46	0.51	0.42	12	5.45	0.45	0.69
Mathematics	6	40	21.12	0.53	0.43	12	4.60	0.38	0.73
Mathematics	7	40	19.73	0.49	0.42	12	4.00	0.33	0.74
Mathematics	8	40	20.31	0.51	0.42	12	4.15	0.35	0.73
ELA	3	29	15.25	0.53	0.37	16	7.05	0.44	0.49
ELA	4	32	17.69	0.55	0.40	19	9.33	0.49	0.47
ELA	5	32	16.87	0.53	0.38	19	10.34	0.54	0.53
ELA	6	32	16.83	0.53	0.36	19	9.62	0.51	0.48
ELA	7	32	17.53	0.55	0.39	19	10.34	0.54	0.55
ELA	8	32	18.02	0.56	0.38	19	9.95	0.52	0.46
Science	4	38	20.61	0.54	0.35	10	5.83	0.58	0.53
Science	8	38	20.78	0.55	0.39	10	4.30	0.43	0.57

Note. I-T Corr. is the item-test score correlation. OE items for ELA include SA, EBSR, and TDA.

Figure 11–1 presents scatterplots for each subject and grade and displaying each item plotted by its *p*-value on the *x*-axis and its item-total correlation on the *y*-axis. Note that pseudo *p*-values (described above) are used for OE items in these plots. These plots provide information about the distribution of item discrimination and item difficulty in a histogram along the y-axis and x-axis, respectively. Green squares indicate MC items and blue triangles indicate OE items. For ELA, OE items include SA, EBSR, and TDA item types. From the difficulty distributions illustrated in Figure 11–1, a wide range of item difficulties appeared on each exam, which was one test development goal. The bivariate relationship between item discrimination (item-test *correlations*) and difficulty (item *p-values*) shows a common trend that items with extreme difficulties can have lower discrimination values.

Figure 11–1. Discrimination and Difficulty Scatterplot



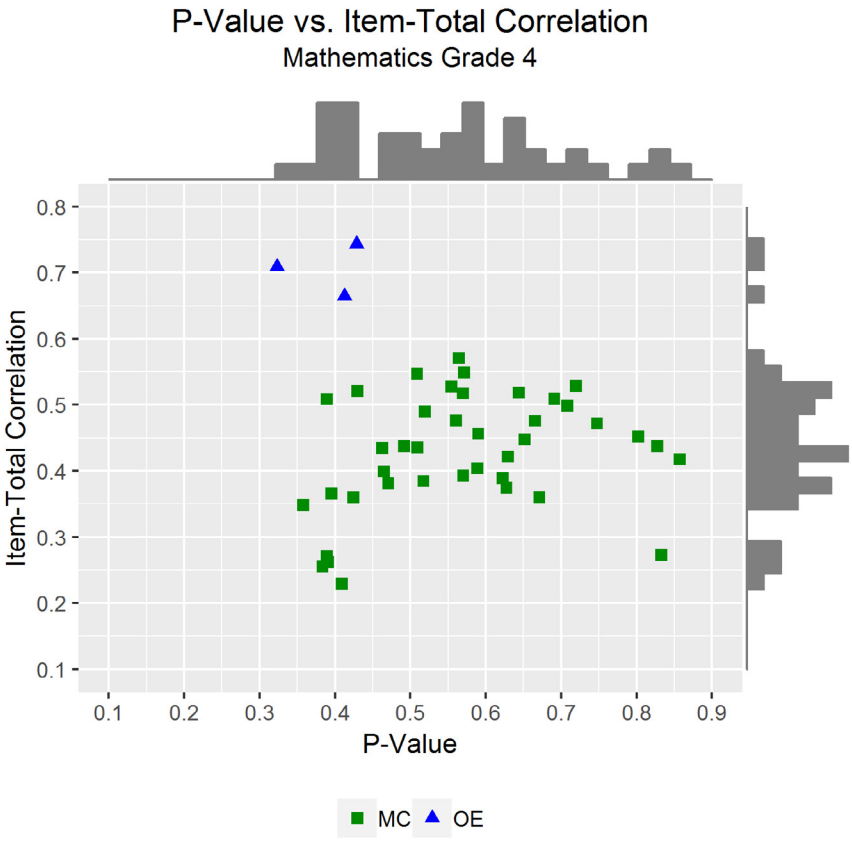
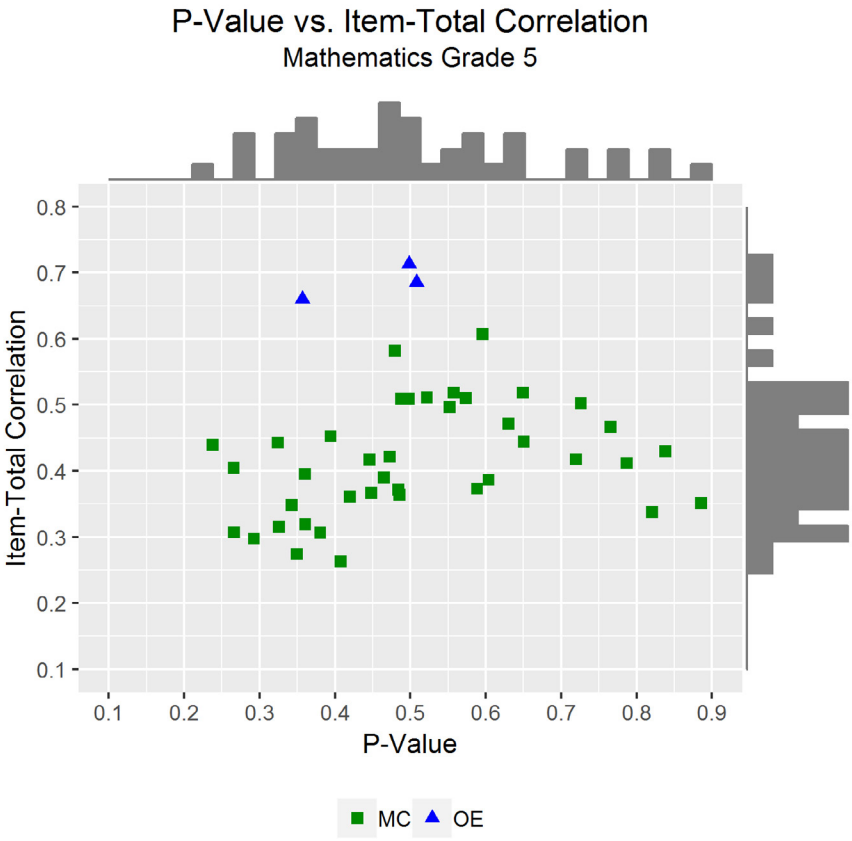


Figure 11–1 (continued). Discrimination and Difficulty Scatterplot



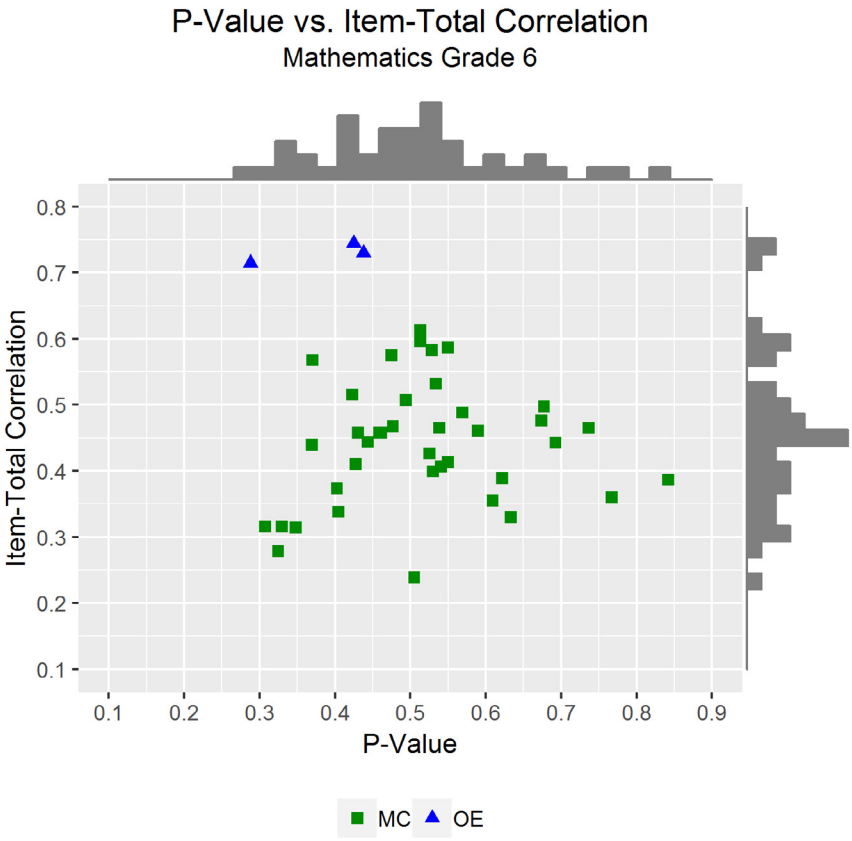
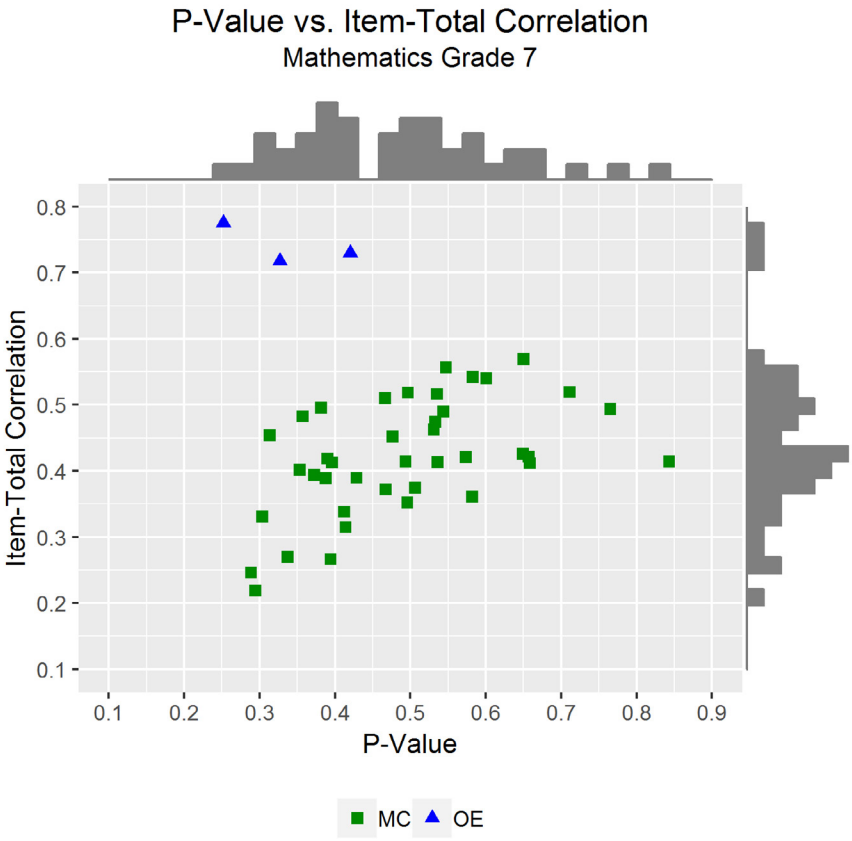


Figure 11–1 (continued). Discrimination and Difficulty Scatterplot



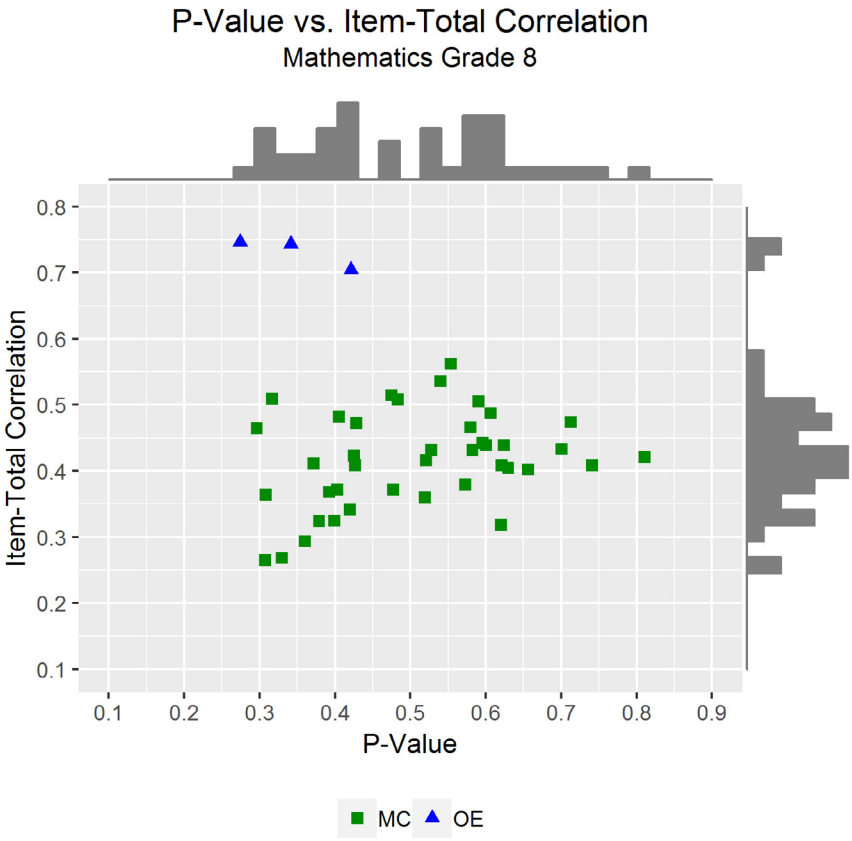
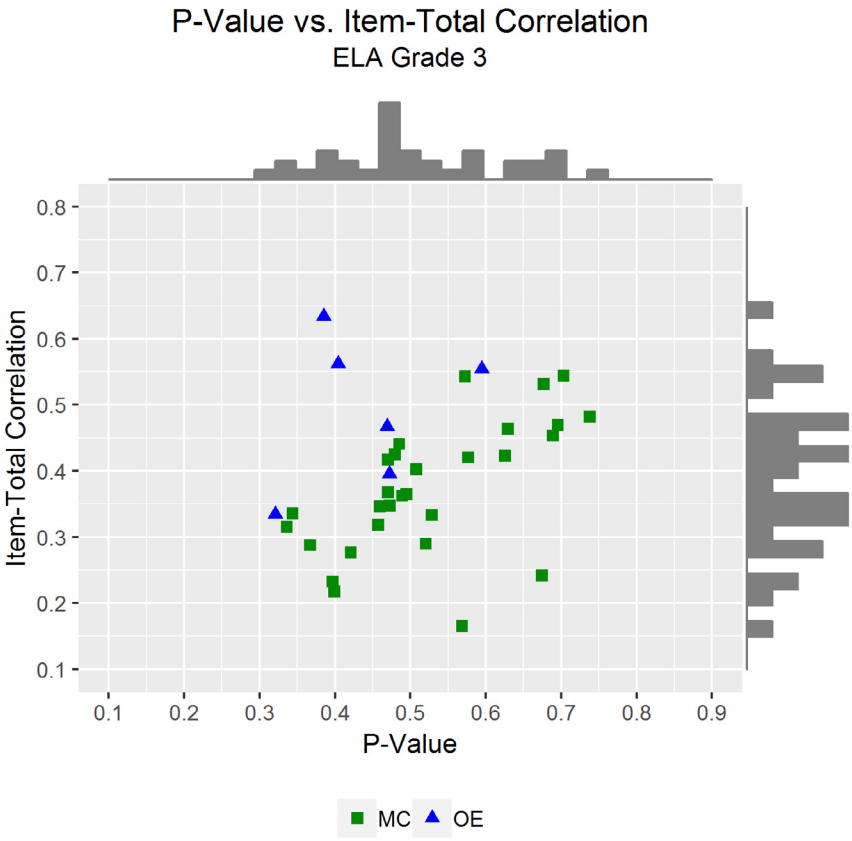


Figure 11–1 (continued). Discrimination and Difficulty Scatterplot



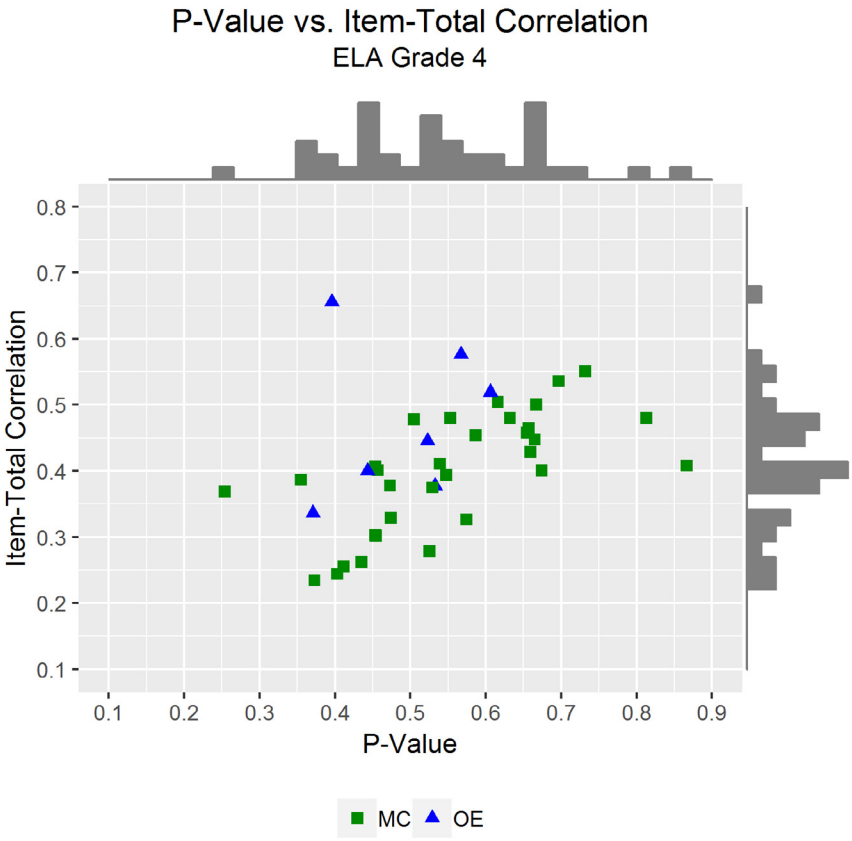
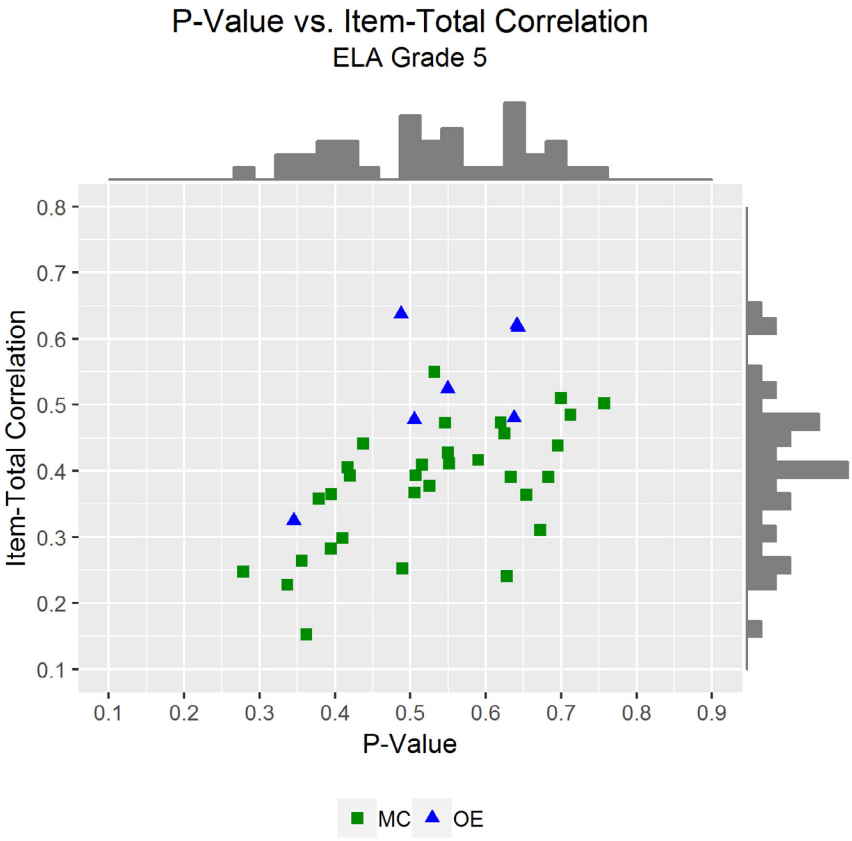


Figure 11–1 (continued). Discrimination and Difficulty Scatterplot



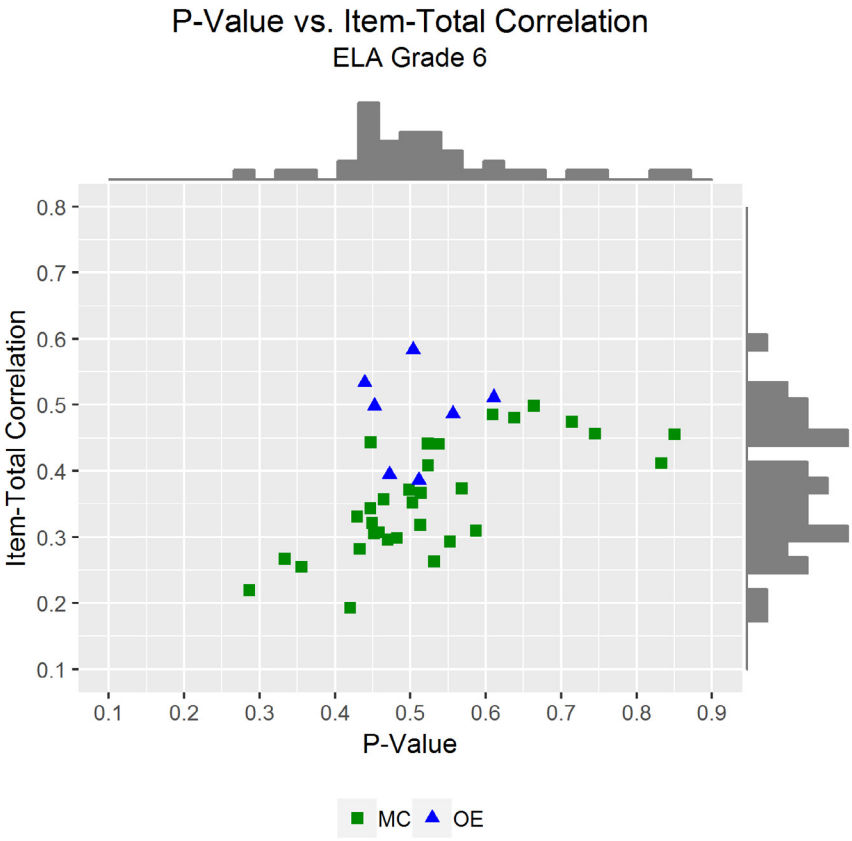
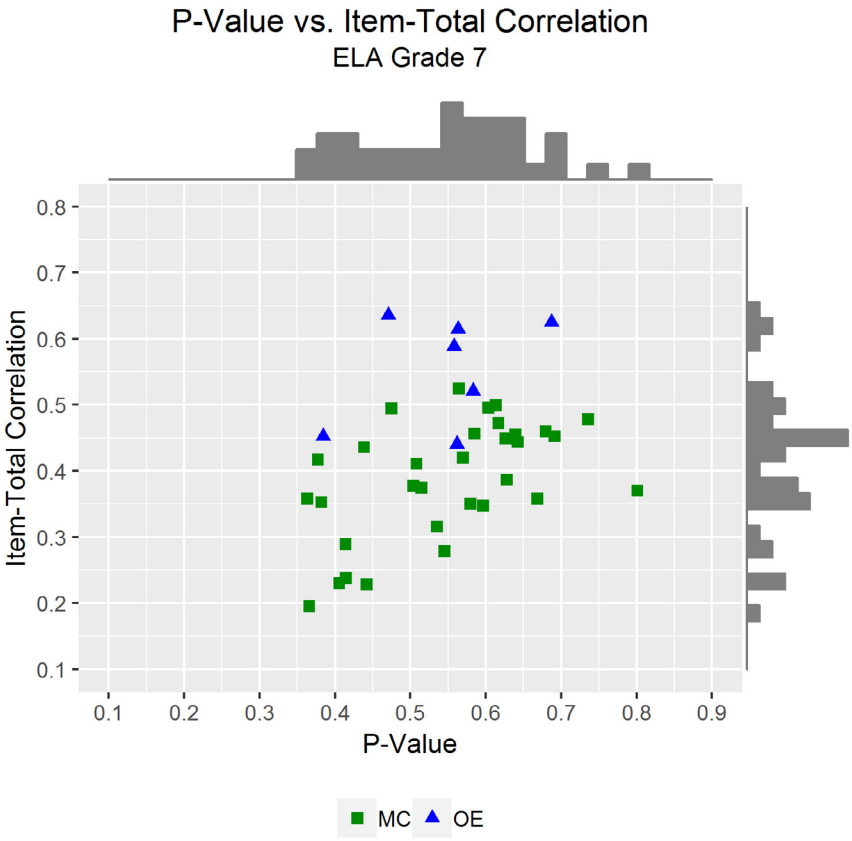


Figure 11–1 (continued). Discrimination and Difficulty Scatterplot



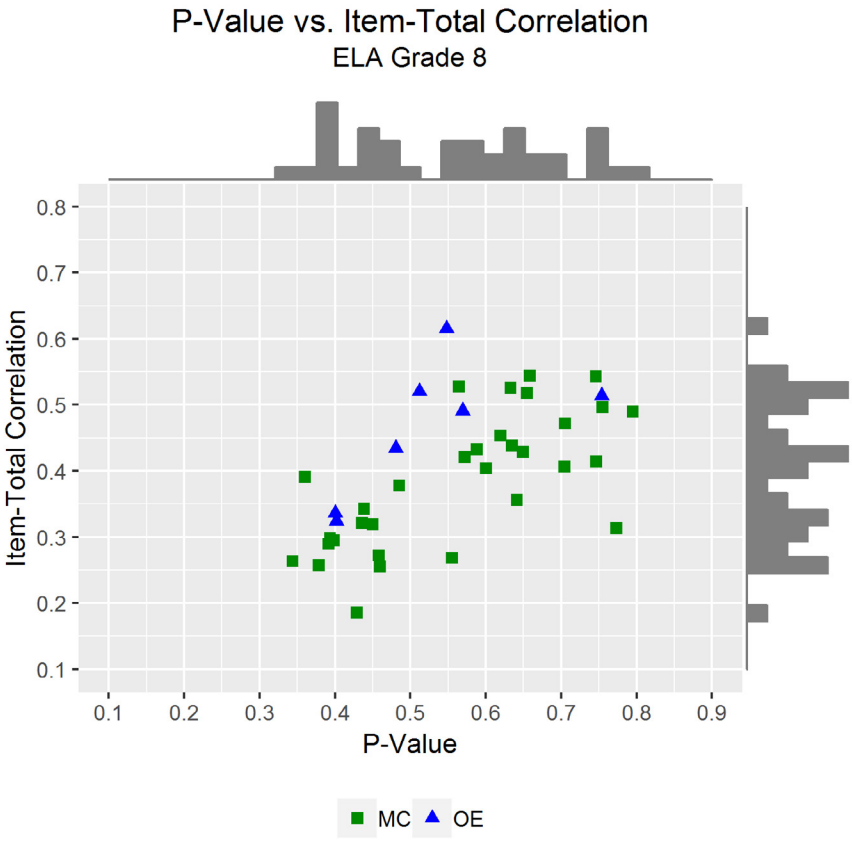
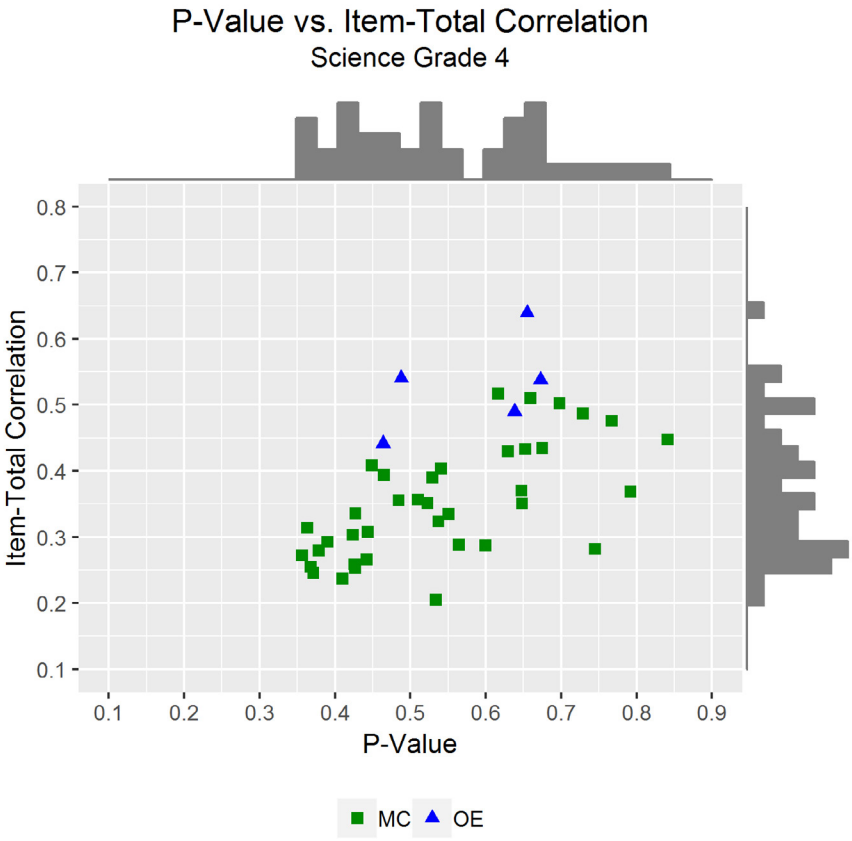
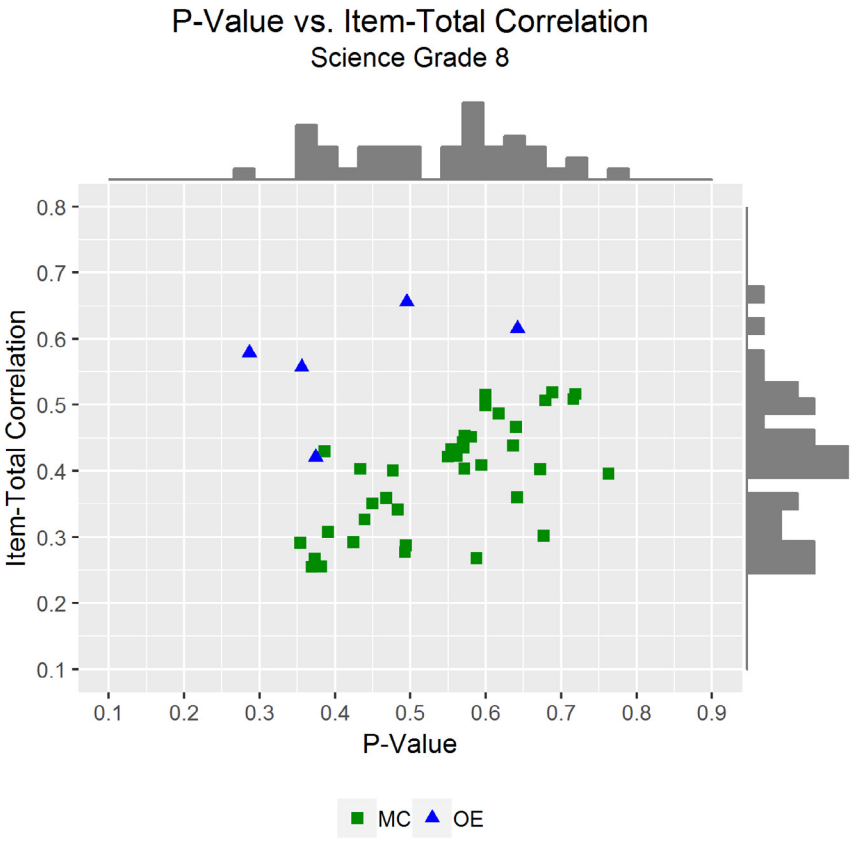


Figure 11–1 (continued). Discrimination and Difficulty Scatterplot





CHAPTER TWELVE: RASCH ITEM CALIBRATION

The item response theory (IRT) model used for the PSSA is based on the work of Georg Rasch. Rasch models have had a long-standing presence in applied testing programs and it has been the methodology continually used to calibrate PSSA data in recent history. IRT has several advantages over classical test theory, so it has become the standard procedure for analyzing item response data in large-scale assessments. However, IRT models make several strong assumptions related to dimensionality, local independence, model-data fit, and item parameter invariance. Resulting inferences derived from any application of IRT rests strongly on the degree to which the underlying assumptions are met.

This chapter outlines the procedures used for calibrating the operational PSSA items. Generally, item calibration is the process of assigning a difficulty-parameter estimate to each item on an assessment so that all items are placed onto a common scale. This chapter briefly introduces the Rasch model, reports the results from evaluations of the adequacy of the Rasch assumptions, and summarizes the Rasch item statistics for the PSSA mathematics, ELA, and science tests. Additional Rasch procedures are discussed with respect to equating in Chapter Fifteen.

DESCRIPTION OF THE RASCH MODEL

The Rasch partial credit model (RPCM; Wright & Masters, 1982) was used to calibrate PSSA items because both multiple-choice (MC) and open-ended (OE) items were part of the assessment. The RPCM extends the Rasch model (Rasch, 1960) for dichotomous (0, 1) items so that it accommodates the polytomous OE item data. Under the RPCM, for a given item *i* with m_i score categories, the probability of person n scoring x (x = 0, 1, 2,... m_i) is given by:

$$P_{ni}(X = x) = \frac{\exp\sum_{j=0}^{x}(\theta_n - D_{ij})}{\sum_{k=0}^{m_i}\exp\sum_{j=0}^{k}(\theta_n - D_{ij})},$$

where θ_n represents a student's proficiency (ability) level, and D_{ij} is the step difficulty of the j^{th} step on item i. For dichotomous MC items, the RPCM reduces to the standard Rasch model and the single step difficulty is referred to as the item's difficulty. The Rasch model predicts the probability of person n getting item i correct as follows:

$$P_{ni}(X = 1) = \frac{\exp(\theta_n - D_{ij})}{1 + \exp(\theta_n - D_{ij})}.$$

The Rasch model places both student ability and item difficulty (estimated in terms of log-odds or logits) on the same continuum. When the model assumptions are met, the Rasch model provides estimates of a person's ability which are independent of the items employed in the assessment, and conversely, estimates item difficulty independently of the sample of examinees. (As noted in Chapter Eleven, interpretation of item *p*-values confounds item difficulty and student ability.)

SOFTWARE AND ESTIMATION ALGORITHM

Item calibration was implemented via WINSTEPS 4.2 computer program (Linacre, 2019), which employs unconditional (UCON), joint-maximum-likelihood estimation (JMLE).

SAMPLE CHARACTERISTICS

The characteristics of calibration samples are reported in Chapter Nine. These samples only include the students who attempted the tests. All omits (no response) and multiple responses (more than one response selected) were scored as incorrect answers (coded as 0s) for calibration.

CHECKING RASCH ASSUMPTIONS

Since the Rasch model was the basis of all calibration, scoring, and scaling analyses associated with the PSSA, the validity of the inferences from these results depends on the degree to which the assumptions of the model were met and how well the model fits the test data. Therefore, it is important to check these assumptions. This section evaluates the dimensionality of the data, local item independence, and item fit. It should be noted that only operational items were analyzed since they are the basis of student scores.

UNIDIMENSIONALITY

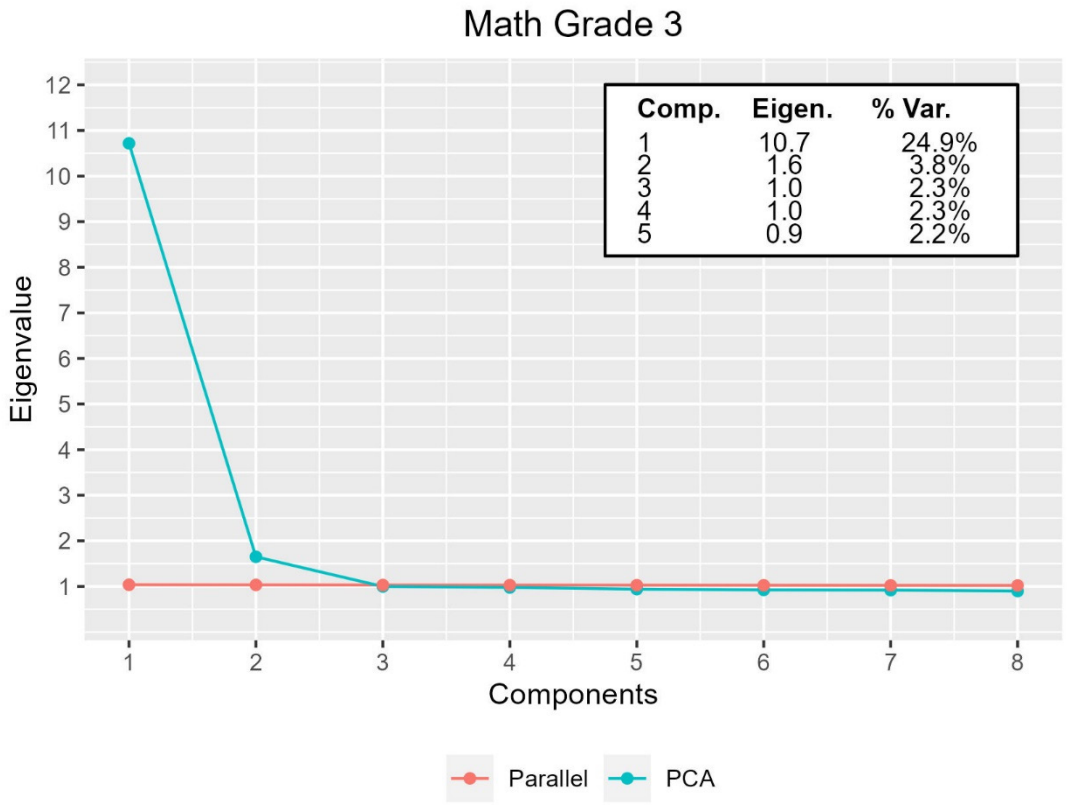
Rasch models assume that one dominant dimension determines the difference among students' performances. Principal Components Analysis (PCA) can be used to assess the unidimensionality assumption. The purpose of the analysis is to verify whether any other dominant component(s) exist among the items. If any other dimensions are found, the unidimensionality assumption would be violated.

Figure 12–1 shows the PCA results for the mathematics, ELA, and science tests. The results include the eigenvalues and the percentage of variance explained for the first five components as well as the scree plots. The scree plots show the eigenvalues plotted by component number and the results from a parallel analysis. The total number of components in PCA is same as the total number of items in a test; however, Figure 12–1 shows only the first 8 components given that beyond 8th component the additional information would be negligible.

Parallel analysis is a technique to decide how many factors exist in principal components (Horn, 1965). Parallel analysis was also conducted to help distinguish components that are real from components that are random. For the parallel analysis, 100 random data sets were created of size equal to the original data. For each random data set, a PCA was performed and the resulting eigenvalues stored. Then for each component, the upper 95th percentile value of the distribution of the 100 eigenvalues from the random data sets was plotted. Given the size of the data generated for the parallel analysis, the reference line is essentially equivalent to plotting a reference line for an eigenvalue of 1.

As can been seen in Figure 12–1, for PSSA mathematics forms the primary dimension explained between 23.3 to 25.4 percent of the total variance. The second component accounted for approximately 3.1 to 4.3 percent of the variance, with eigenvalues ranging from 1.3 to 1.8. For ELA, the primary dimension explained 19.4 to 22.4 percent and the second dimension explained 3.1 to 3.5 percent of the variance. For science, the primary dimension explained 18.5 to 21.5percent and the second dimension explained 2.9 to 3.5 percent of the variance. Although the eigenvalues for the second or third component may be greater than 1, the percent of variance explained does not support that any of the examinations measure a second or third dominant dimension. Meaning the results from the PCA suggest that there is one clear dominant dimension for all mathematics, ELA, and science tests.

Figure 12–1. Scree Plots



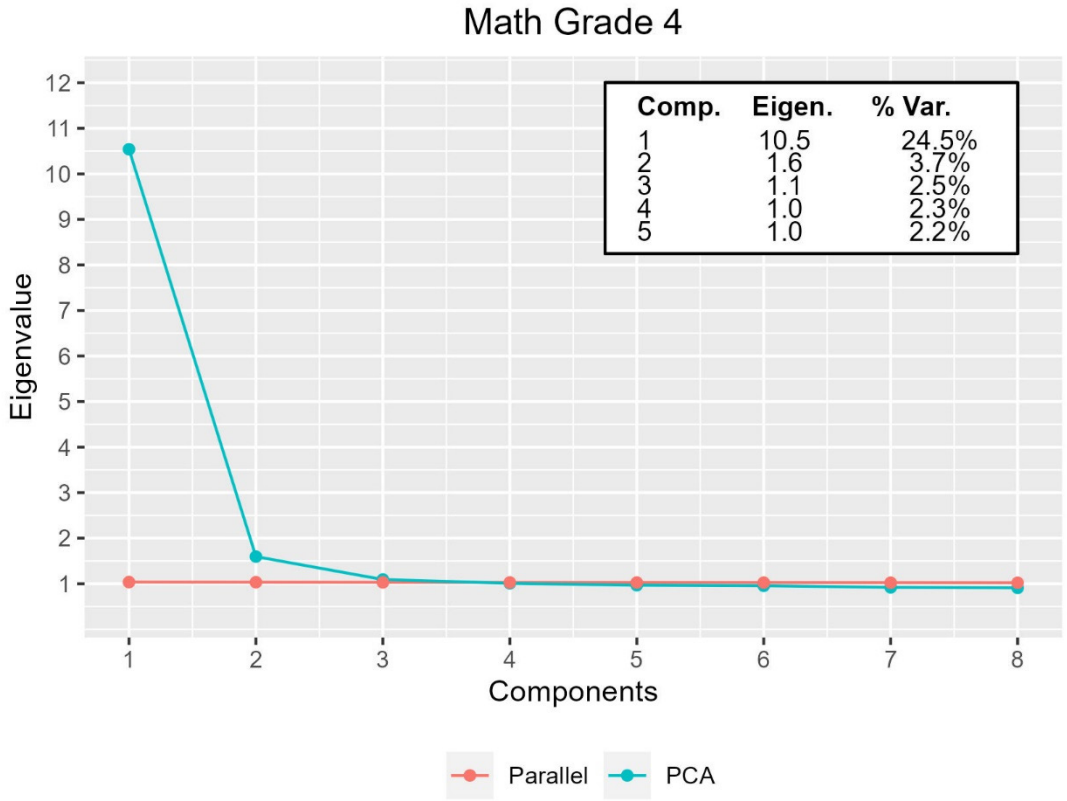
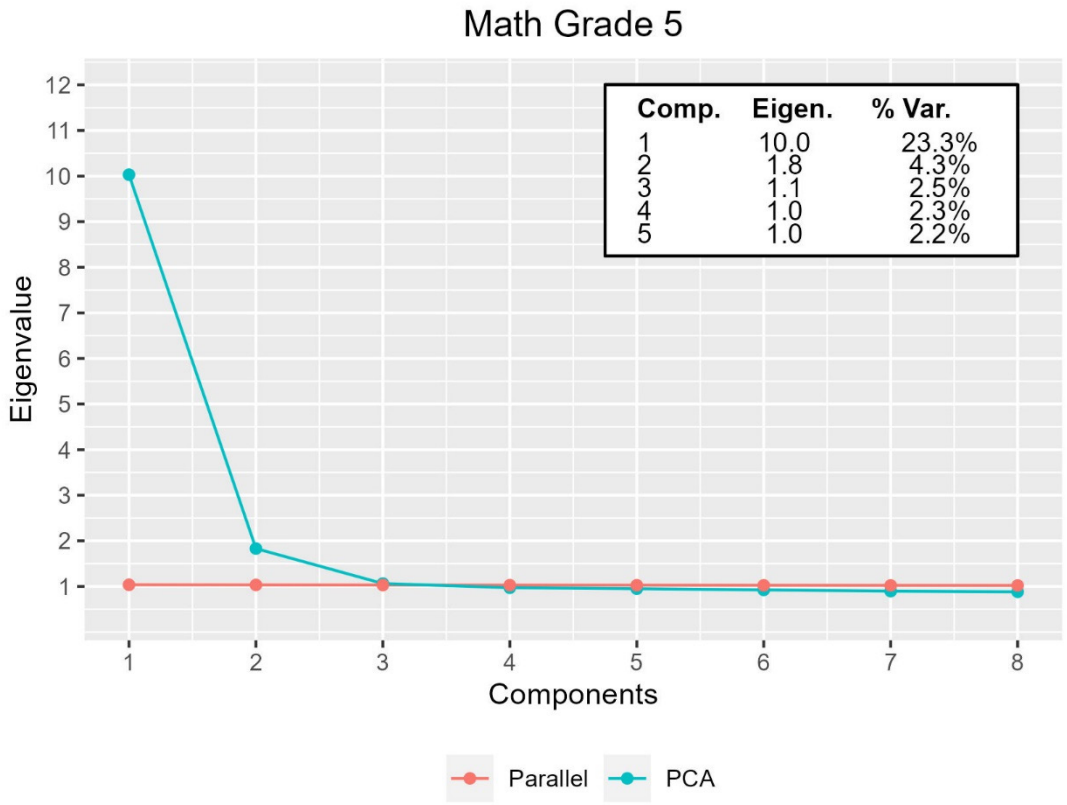


Figure 12–1 (continued). Scree Plots



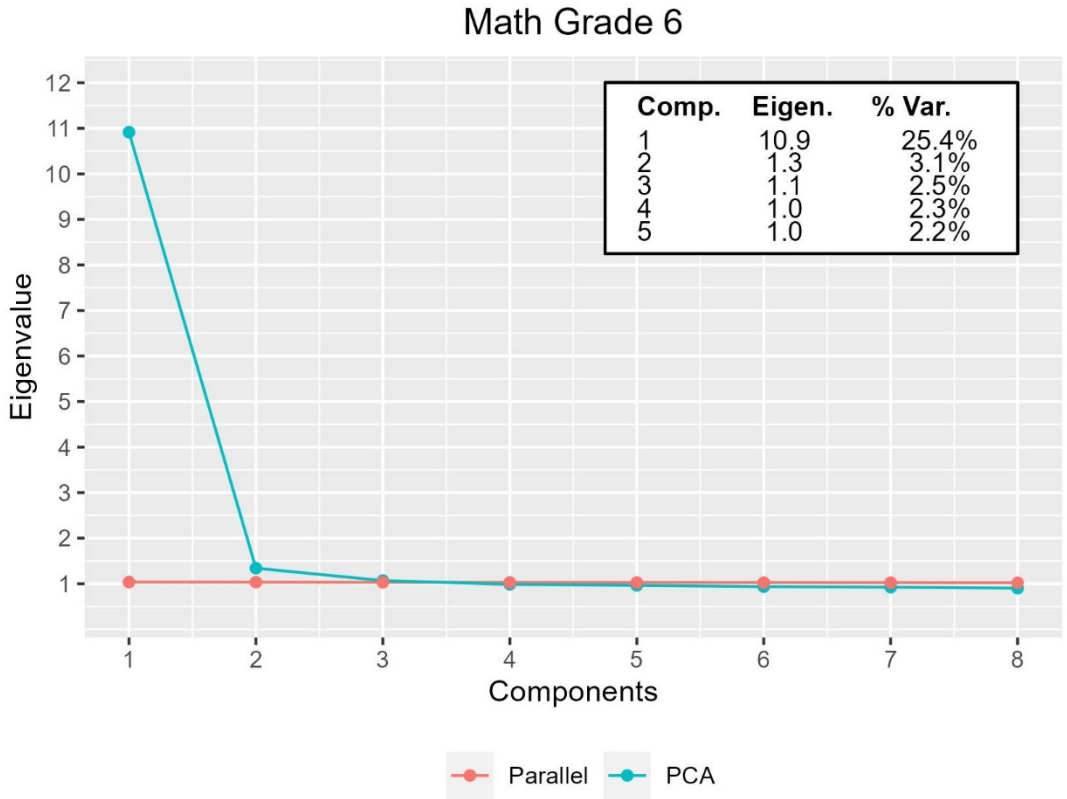
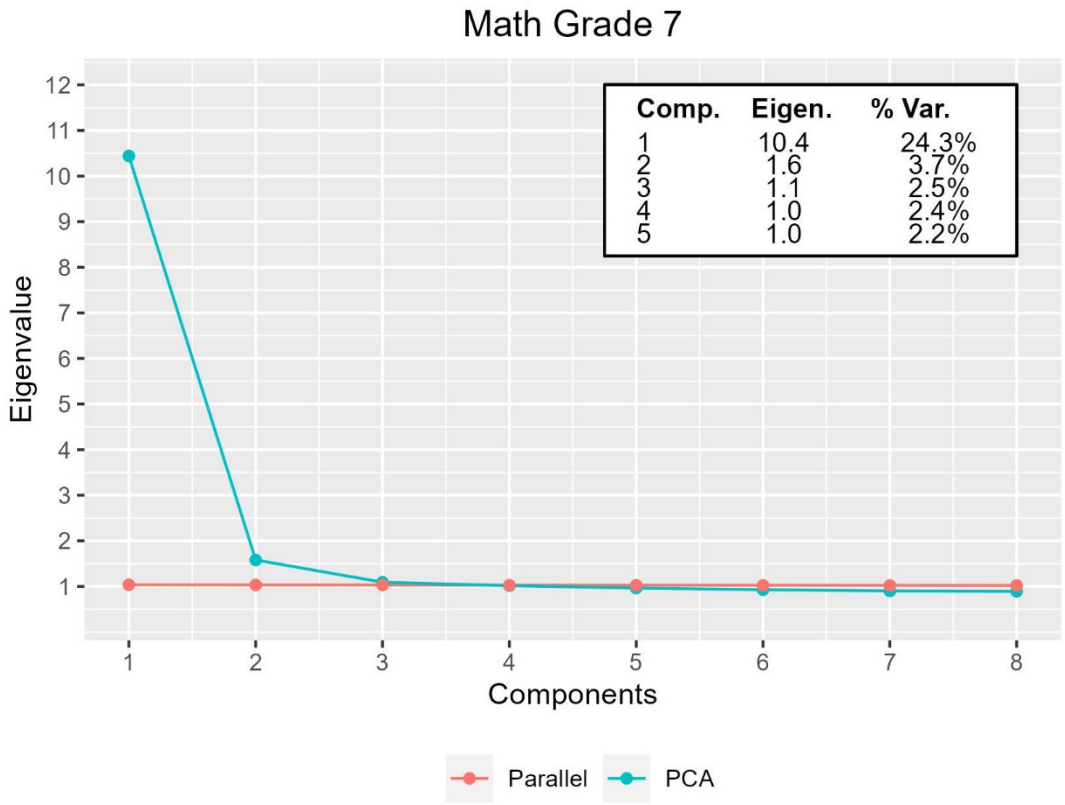


Figure 12–1 (continued). Scree Plots



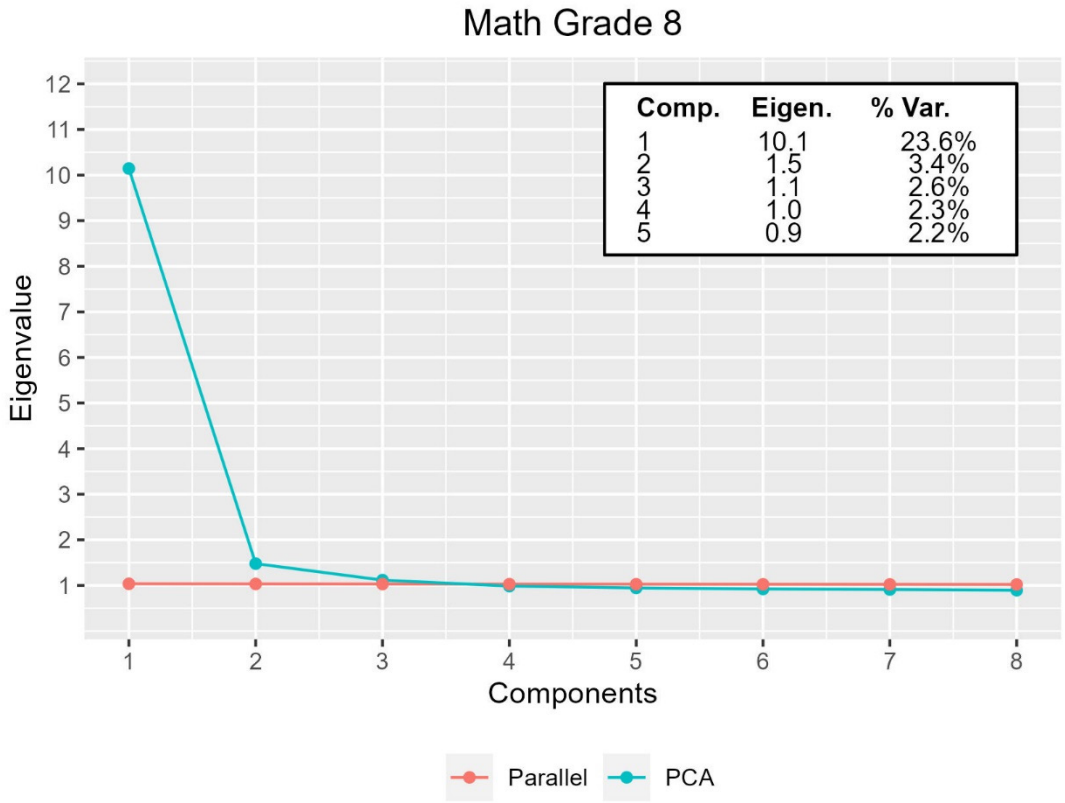
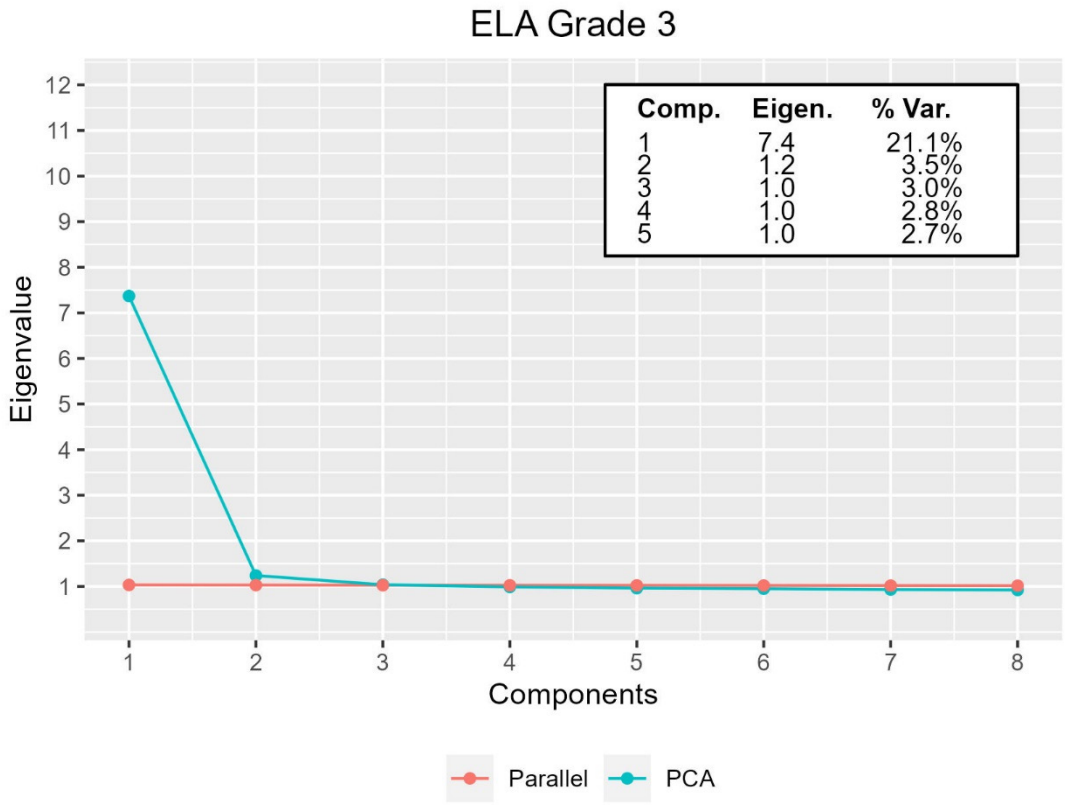


Figure 12–1 (continued). Scree Plots



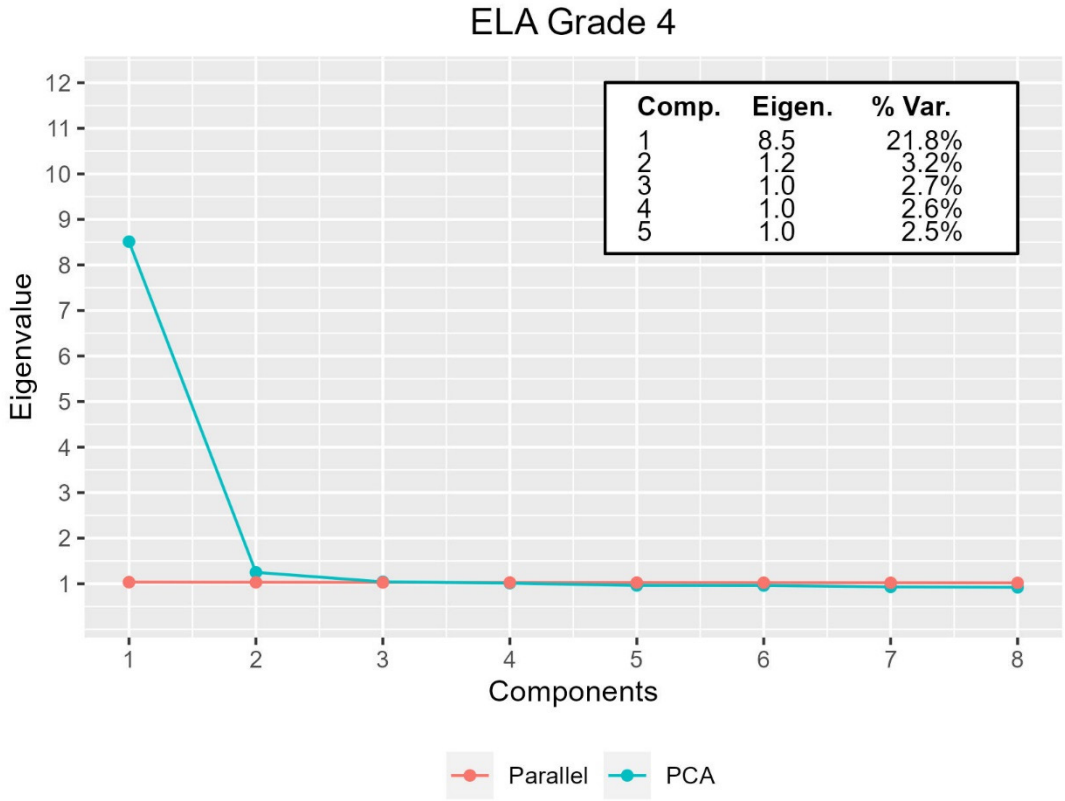
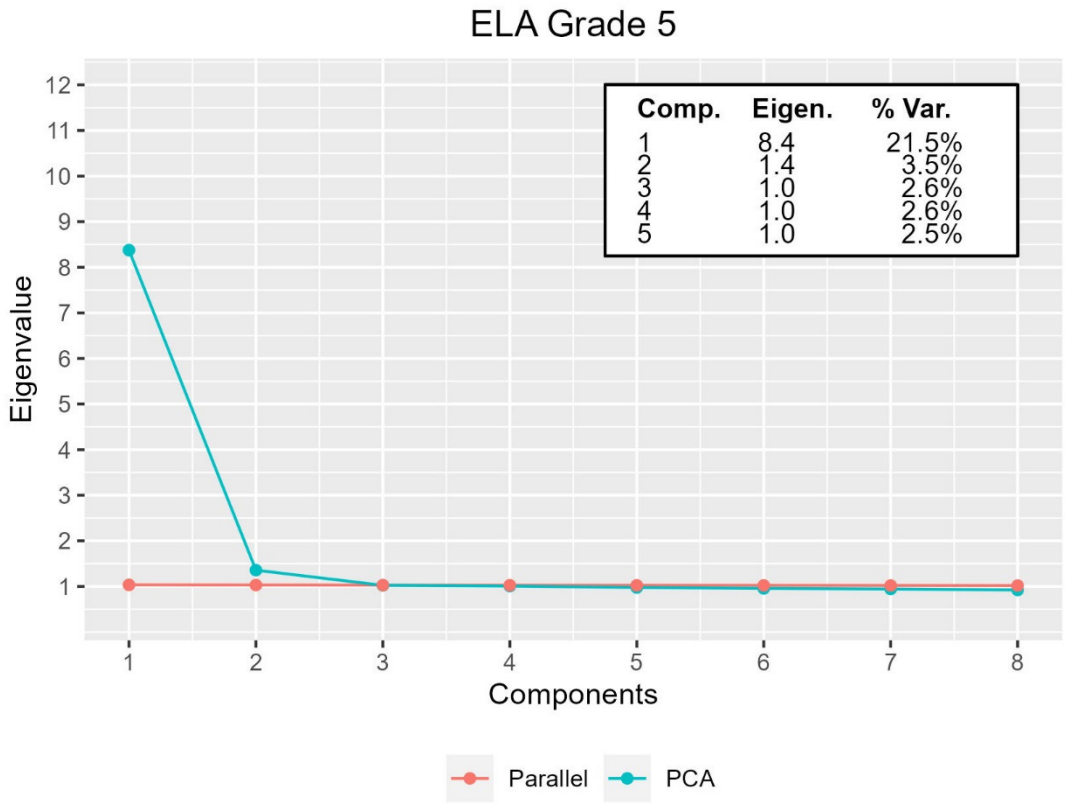


Figure 12–1 (continued). Scree Plots



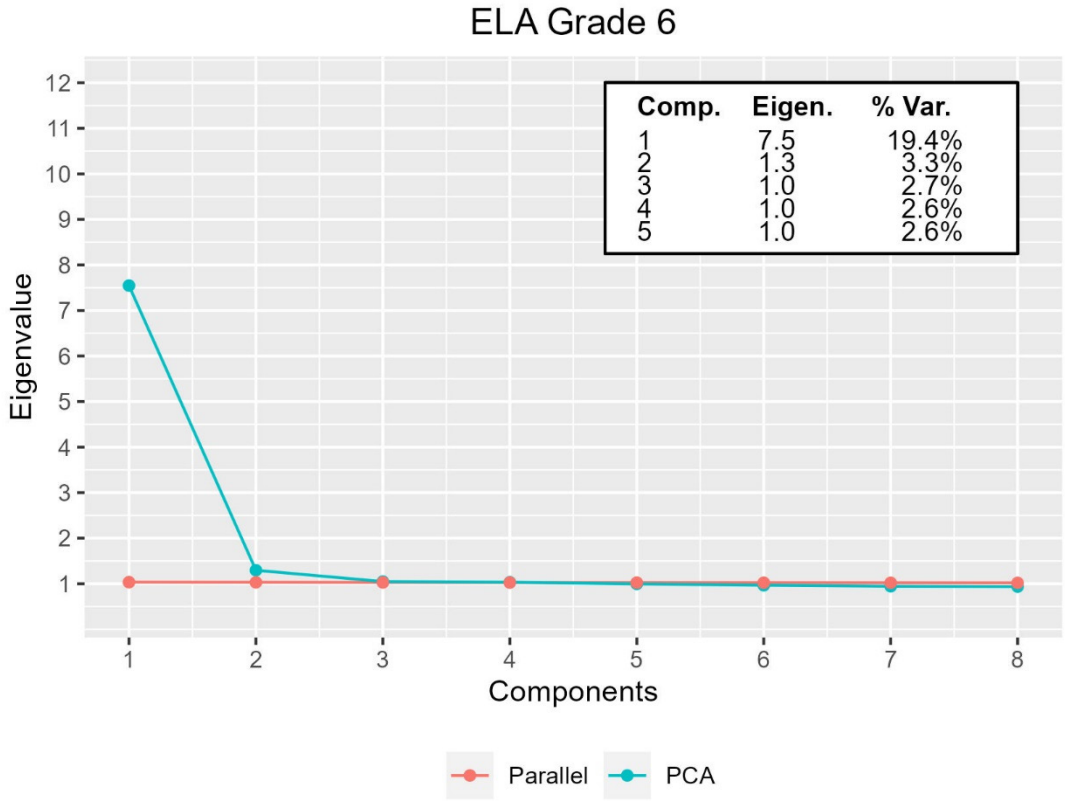
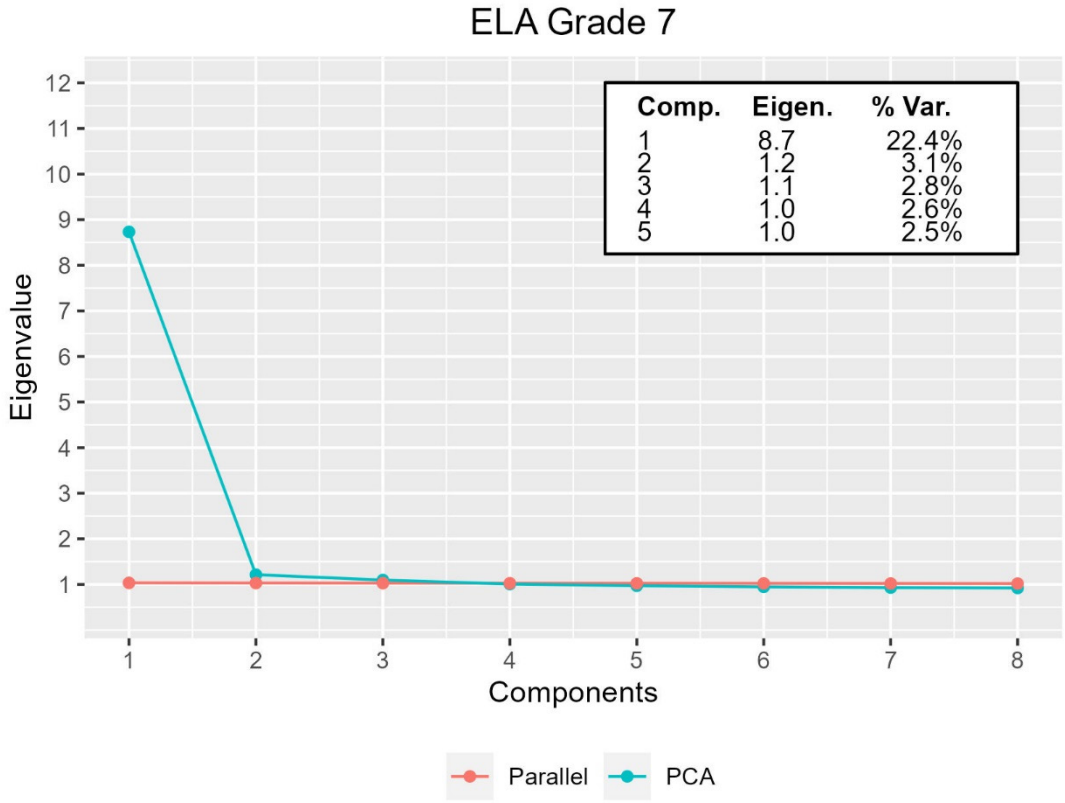


Figure 12–1 (continued). Scree Plots



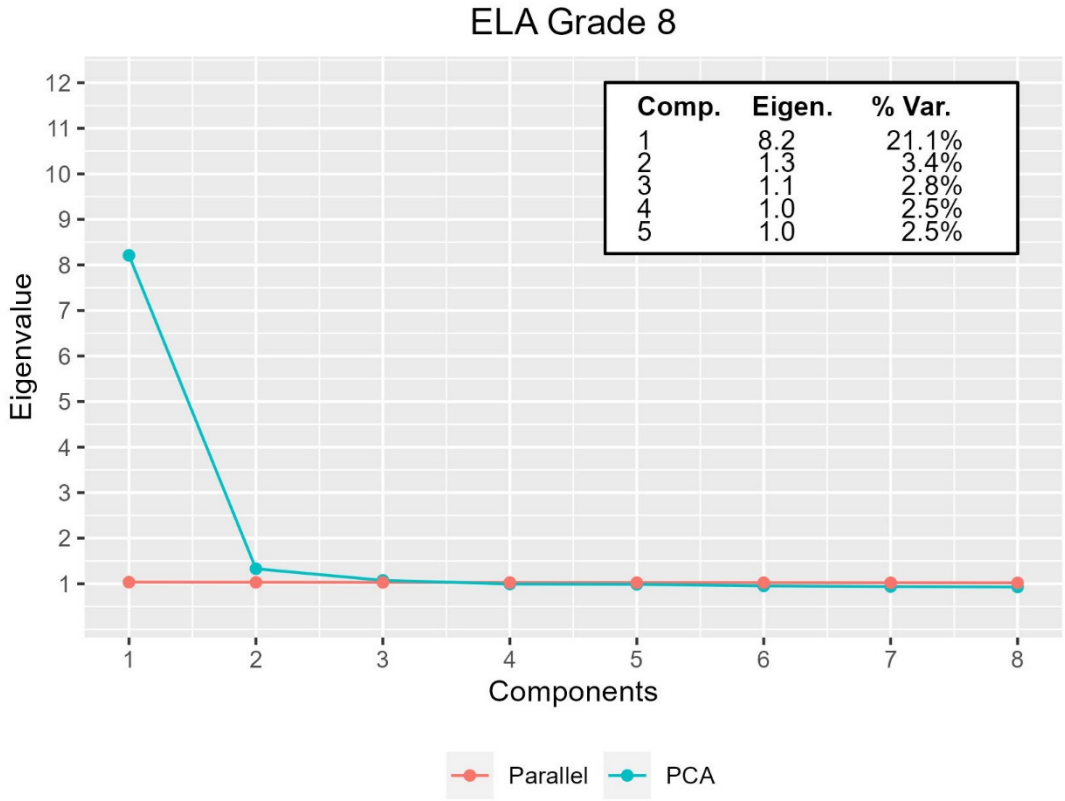
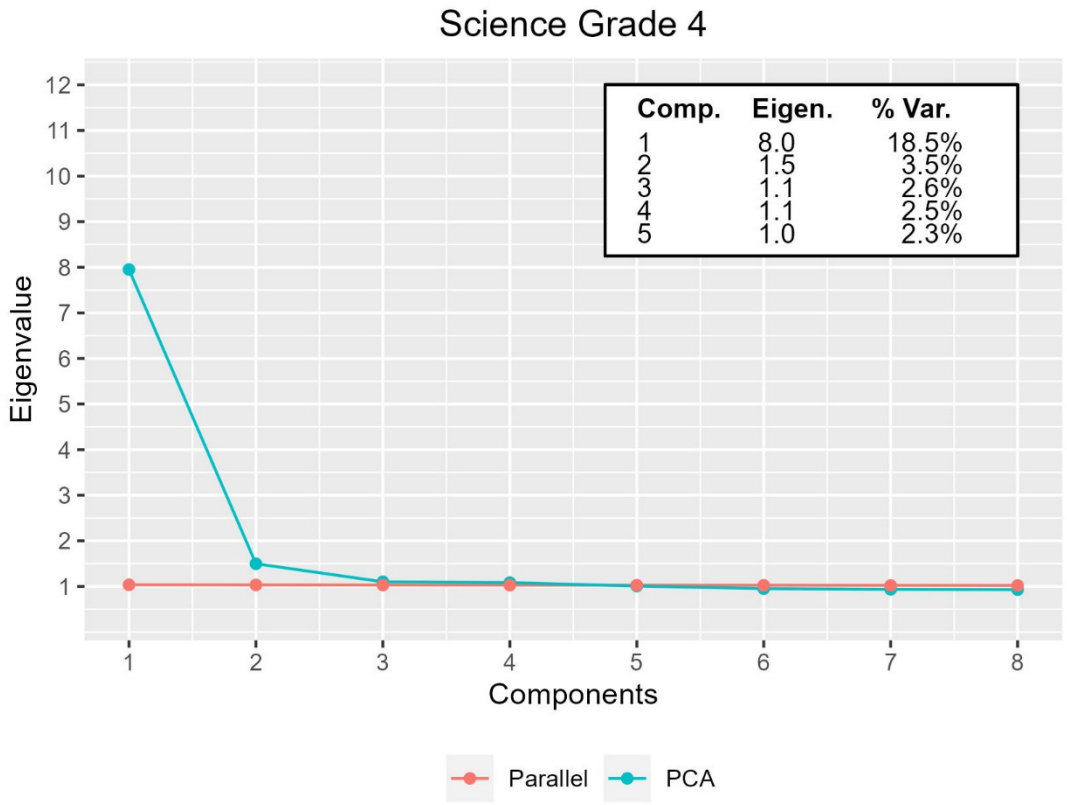
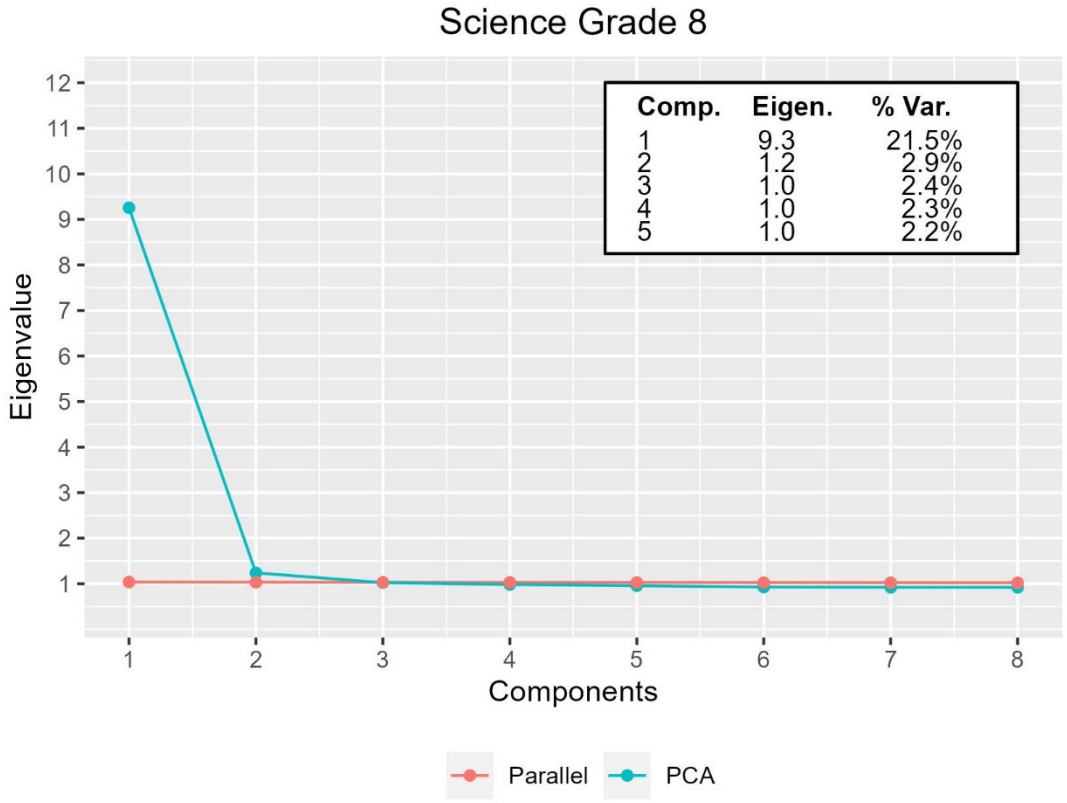


Figure 12–1 (continued). Scree Plots





ITEM INDEPENDENCE

Local independence (LI) is a fundamental assumption of IRT. No relationship should exist between examinees' responses to different items after accounting for the abilities measured by a test. In formal statistical terms, a test X that is comprised of items $X_1, X_2,\ldots X_n$ is locally independent with respect to the latent variable θ if, for all $x = (x_1, x_2,\ldots x_n)$ and θ,

$$P\left(\mathbf{X} = \mathbf{x} \mid \theta\right) = \prod_{i=1}^{I} P\left(X_i = x_i \mid \theta\right).$$

This formula essentially states that the probability of any pattern of responses across all items ($\mathbf{x}$), after conditioning on the abilities (θ) measured by the test, should be equal to the product of the conditional probabilities across each item (cf. the multiplication rule for independent events where the joint probabilities are equal to the product of the associated marginal probabilities).

The equation above shows the condition after satisfying the strong form of local independence. A weak form of local independence (LI) was proposed by McDonald (1979). The distinction is important as many indicators of local dependency are framed by LI. The requirement would be for the conditional covariances of all pairs of item responses, conditioned on the abilities, to be equal to zero. When this assumption is met, the joint probability of responses to an item pair, conditioned on abilities, is the product of the probabilities of responses to these two items, as shown below. (This is a weaker form because higher-order dependencies among items are allowed.) Based on the LI, the following expression can be derived:

$$P\left(X_i = x_i, X_j = x_j \mid \theta\right) = P\left(X_i = x_i \mid \theta\right) P\left(X_j = x_j \mid \theta\right).$$

Marais and Andrich (2008) pointed out that local item dependence in the Rasch model can occur in two ways that some may not distinguish. The first way occurs when the assumption of unidimensionality is violated. Here, other nuisance dimensions besides a dominant dimension determine student performance (this can be called "trait dependence"). The second violation occurs when responses to an item depend on responses to another. This is a violation of statistical independence and can be called response dependence. Many people treat the assumptions of unidimensionality and local independence as one phenomenon and believe that once unidimensionality holds, that local independence also holds. By distinguishing the two sources of local dependence, one can see that while local independence can be related to unidimensionality, the two are different assumptions and therefore, require different tests.

Residual item correlations provided in WINSTEPS for each item pair were used to assess the local dependence among the PSSA items. In general, these residuals are computed as follows. First, expected item performance based on the Rasch model is determined using ability and item parameter estimates. Next, deviations (residuals) between the examinees' expected and observed performance is determined for each item. Finally, for each item pair, a correlation between the respective deviations is computed.

Three types of residual correlations are available in WINSTEPS: raw, standardized, and logit. It should be noted that the raw score residual correlation essentially corresponds to Yen's Q_3 index, a popular LI statistic. The expected value for the Q_3 statistic is approximately -1/(k-1) when no local dependence exists, where k is test length (Yen, 1993). Thus, the expected Q_3 values should be approximately -0.02 for the PSSA tests (since most of the PSSA tests had close to 40 core items). Index values that are greater than 0.20 indicate a degree of local dependence that probably should be examined by test developers (Chen & Thissen, 1997).

Since the three residual correlations are very similar, the default "standardized residual correlation" in WINSTEPS was used for these analyses. Table 12–1 shows the summary statistics—mean, SD, minimum, maximum, and several percentiles (P_{10}, P_{25}, P_{50}, P_{75}, P_{90}) — for all the residual correlations for each test. The total number of item pairs (N) and the number of pairs with the residual correlations greater than 0.20 are also reported in this table. The mean residual correlations were close to Q3 index. Six item pairs in ELA and three item pairs in Mathematics showed residual correlations greater than 0.2, and all were less than 0.33, suggesting local item independence holds reasonably well for the 2024 PSSA ELA, mathematics, and science tests. Refer to Table 12–1 and 12–2 for details.

Table 12–1M. Summary of Item Residual Correlations for PSSA Mathematics

Statistic	Grade3	Grade4	Grade5	Grade6	Grade7	Grade8
N	903	903	903	903	903	903
Mean	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
SD	0.03	0.03	0.03	0.03	0.03	0.03
Minimum	-0.1	-0.11	-0.1	-0.11	-0.12	-0.11
P10	-0.06	-0.05	-0.06	-0.05	-0.06	-0.05
P25	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
P50	-0.02	-0.02	-0.02	-0.03	-0.02	-0.02
P75	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
P90	0.01	0.01	0.01	0.01	0.01	0.01
Maximum	0.16	0.33	0.14	0.33	0.2	0.11
>|0.20|	0	1	0	1	1	0

Table 12–1E. Summary of Item Residual Correlations for PSSA ELA

Statistic	Grade3	Grade4	Grade5	Grade6	Grade7	Grade8
N	595	741	741	741	741	741
Mean	-0.03	-0.02	-0.02	-0.02	-0.02	-0.02
SD	0.03	0.03	0.03	0.03	0.03	0.04
Minimum	-0.11	-0.22	-0.26	-0.2	-0.21	-0.25
P10	-0.06	-0.04	-0.04	-0.05	-0.04	-0.05
P25	-0.05	-0.03	-0.03	-0.03	-0.03	-0.03
P50	-0.03	-0.02	-0.01	-0.02	-0.02	-0.01
P75	-0.01	0	0	0	0	0
P90	0	0.01	0.01	0.01	0.02	0.02
Maximum	0.12	0.18	0.15	0.11	0.09	0.14
>|0.20|	0	1	1	0	2	2

Table 12–1S. Summary of Item Residual Correlations for PSSA Science

Statistic	Grade 4	Grade 8
N	903	903
Mean	-0.02	-0.02
SD	0.03	0.02
Minimum	-0.09	-0.09
P10	-0.05	-0.05
P25	-0.04	-0.04
P50	-0.02	-0.02
P75	-0.01	-0.01
P90	0	0
Maximum	0.17	0.1
>|0.20|	0	0

Table 12–2 lists all item pairs with absolute residual correlations greater than or equal to 0.20. In addition, the item sequence, type, and Eligible Content is also displayed. Item sequence in the table represents the master form's item sequence, but the MC items are scrambled across forms.

There were 6 item pairs in ELA and 3 item pairs in Mathematics that had absolute residual correlations greater than 0.2. The item pairs had residual correlations ranging from -0.26 to 0.33. These correlations showed that, after the relationship between the items and the ELA/Mathematics construct is accounted for, there may be small, but different factors that are contributing to examinee performance on the item pairs. This is a consistent finding with prior administrations. Test blueprints determine what Assessment Anchors, as defined by the Eligible Content, will be assessed. PDE and DRC make every effort to avoid one item cueing another through careful item selection and sequencing, so this is an unlikely source of local item dependence for PSSA.

Table 12–2. Item Pairs with Large Residual Correlations

Subject	Grade	Item 1 Seq.	Item 1 Type	Item 1 Eligible Content	Item 2 Seq.	Item 2 Type	Item 2 Eligible Content	Resid. Corr.
Mathematics	4	2	MC	A-F.2.1.6	19	MC	A-F.2.1.7	0.33
Mathematics	6	19	MC	C-G.1.1.6	37	MC	C-G.1.1.6	0.33
Mathematics	7	7	MC	C-G.1.1.2	35	MC	C-G.1.1.2	0.20
ELA	4	13	ESR	B-K.1.1.2	53	TDA	E.1.1	-0.22
ELA	5	26	ESR	B-K.1.1.3	53	TDA	E.1.1	-0.26
ELA	7	19	ESR	B-K.1.1.3	53	TDA	E.1.1	-0.21
ELA	7	20	ESR	B-C.3.1.1	53	TDA	E.1.1	-0.20
ELA	8	14	ESR	B-K.1.1.3	53	TDA	E.1.1	-0.24
ELA	8	26	ESR	B-C.3.1.1	53	TDA	E.1.1	-0.25

ITEM FIT

Additional evidence of validity related to the internal test structure is obtained through an ongoing evaluation of item fit, person fit, and test summary statistics. The item fit of the Rasch Model is routinely evaluated within field testing as well as within each operational administration. Person fit of the Rasch model is routinely evaluated and the data are expected to fit well regardless of gender, ethnicity, or level of performance (see Chapter Fifteen and Appendix T). Comparability of each test form is evaluated in terms of the test characteristics curves, test information function, and CSEM (see Chapter Eighteen). Regular maintenance of item fit, person fit, and test summary statistics within a test and across test forms provides validity evidence that supports the PSSA.

WINSTEPS provides two item fit statistics (infit and outfit) for evaluating the degree to which the Rasch model predicts the observed item responses. Each fit statistic can be expressed as a mean square (MnSq) statistic or on a standardized metric (Zstd with mean = 0 and variance = 1). MnSq values are more oriented toward practical significance, while Zstd values are more oriented toward statistical significance. Though both are informative, the Zstd values are very likely too sensitive to the large sample sizes observed on the PSSA. In this situation it is recommended that the Zstd values be ignored if the MnSq values are acceptable (Linacre, 2014).

Both infit and outfit MnSq are the average of standardized residual variance (the difference between the observed score and the Rasch estimated score divided by the square root of the Rasch model variance). The difference is that the outfit statistic gives all examinees equal weight in computing the fit and tends to be affected more by unexpected responses far from the person, item, or rating scale category measure (i.e., it is more sensitive to outlying, off-target, low-information responses). The infit statistic is weighted by the examinee locations relative to item difficulty and tends to be affected more by unexpected responses close to the person, item, or rating scale category measure (i.e., informative, on-target responses). Some feel that extreme infit values are a greater threat to the measurement process than extreme outfit since most tests intend to measure the on-target population rather than extreme outliers.

The expected MnSq value is 1.0 and can range from 0 to infinity. Deviation in excess of the expected value can be interpreted as noise or lack of fit between the items and the model. Values lower than the expected value can be interpreted as item redundancy or overfitting items (too predictable, too much redundancy), and values greater than the expected value indicate underfitting items (too unpredictable, too much noise). Rules of thumb regarding "practically significant" MnSq values vary. More conservative users might prefer items with MnSq values that range from 0.8 to 1.2. Others believe reasonable test results can be achieved with values from 0.5 to 1.5. The results shown in this section highlight values outside of a range of 0.7 to 1.3 given their practical importance.

Table 12–3 presents the summary statistics of infit and outfit mean square statistics for the PSSA mathematics, ELA, and science tests, including the mean, SD, and minimum and maximum values. The number of items within the range of [0.7, 1.3] is also reported. The mean values for both infit and outfit statistics were close to 1.00 across all subjects and grade levels. Almost all the items had infit values falling in the range of [0.7, 1.3], suggesting reasonable model infit. Slightly more outfit values fell either below 0.7 or above the 1.3 threshold. Values above 1.3 can sometimes suggest higher than normal guessing or careless mistake patterns on items, and values below 0.7 can suggest an item is over fit. The maximum outfit values noted are close to the 1.3 threshold, and the minimum values noted are very close to 0.7, which could also suggest well discriminating items. There is slightly more variability in infit and outfit for ELA tests than mathematics, indicated by the mean and distribution of infit and outfit statistics. For example, 77% of the ELA grade 4 items (M = 1.05, SD = 0.22) fit in terms of outfit, whereas 86% of the Math grade 4 items (M = 0.97, SD = 0.19) fit the model in terms of outfit.

Table 12–3. Summary of Item Infit and Outfit Mean Square Statistics by Subject and Grade

Subject	Grade	Mean*	SD*	Min*	Max*	[0.7,1.3]*	Mean†	SD†	Min†	Max†	[0.7,1.3] †
Mathematics	3	0.98	0.14	0.66	1.29	42/43	1.00	0.21	0.52	1.46	36/43
Mathematics	4	0.97	0.12	0.71	1.23	43/43	0.97	0.19	0.57	1.34	37/43
Mathematics	5	0.96	0.12	0.64	1.20	42/43	0.96	0.19	0.51	1.35	37/43
Mathematics	6	0.98	0.13	0.62	1.27	42/43	0.97	0.19	0.47	1.42	41/43
Mathematics	7	0.98	0.13	0.67	1.22	42/43	0.99	0.20	0.50	1.45	35/43
Mathematics	8	0.97	0.10	0.72	1.15	43/43	0.96	0.14	0.58	1.25	42/43
ELA	3	1.02	0.12	0.81	1.24	35/35	1.03	0.17	0.72	1.36	32/35
ELA	4	1.03	0.16	0.57	1.46	37/39	1.05	0.22	0.58	1.49	30/39
ELA	5	1.04	0.14	0.66	1.55	36/39	1.09	0.23	0.66	1.74	34/39
ELA	6	1.03	0.12	0.59	1.24	38/39	1.05	0.19	0.57	1.52	32/39
ELA	7	1.02	0.12	0.58	1.26	38/39	1.04	0.17	0.59	1.41	36/39
ELA	8	1.04	0.15	0.76	1.51	37/39	1.08	0.22	0.62	1.69	34/39
Science	4	0.99	0.11	0.67	1.26	42/43	1.01	0.16	0.56	1.35	40/43
Science	8	0.99	0.11	0.79	1.21	43/43	0.98	0.15	0.68	1.33	41/43

Notes. *Infit Mean Square
†Outfit Mean Square

RASCH ITEM STATISTICS

As noted earlier, the Rasch model expresses item difficulty (and student ability) in units referred to as logits, rather than on the percent-correct metric. The logit metric has several mathematical advantages. Logits have an interval scale, meaning that two items with logits of 0.0 and +1.0 (respectively) are the same distance apart as two items with logits of +3.0 and +4.0. Logits are not dependent on the ability level of the students. For example, a test form can have a mean logit of zero regardless of how the student sample performed on the item.

The standard Rasch calibration procedure arbitrarily sets the mean difficulty of the items on any form at zero. Under normal circumstances where all students are administered the same set of items, any item with a *p*-value lower than the average item on the form receives a positive logit difficulty and any item with a *p*-value higher than the average receives a negative logit. Consequently, the logits for any calibration, whether it is the grade 3 ELA test or the grade 8 science test, relate to an arbitrary origin defined by the center of items on that form. The average third-grade ELA item will have a logit of zero; the average grade 8 science item will have a logit of zero. Logits for both item difficulties and student abilities are placed on the same scale and relate to the same mean item difficulty.

There are a number of other arbitrary choices that could be made for centering the item difficulties. Rather than using all the items, the origin could be defined by a subset. For the PSSA, all test forms within each subject and grade level share the same operational item set. All items on each form can then be easily adjusted to a single (but still arbitrary) origin by defining the origin as the mean of the operational items. With this done, the origins for all the forms will be statistically equal. For example, items on any two forms that are equally difficult will now have statistically equal logit difficulties. This is partly how PSSA items can be placed on the same logit difficulty scale across years. Chapter Fifteen has more detailed information about the PSSA equating procedure.

Appendix F reports the item statistics including classical and Rasch logit difficulties for all operational items that were used for pre-equating (see Chapter Fifteen). Table 12–4 summarizes the Rasch logit difficulties of the operational items on each test that are on the base scale, which were set in 2015 for math and ELA, and 2008 for science. The minimum and maximum values and standard deviations suggest that the PSSA items covered a relatively wide range of difficulties. It is important to note that the logit difficulty values presented have not been linked to a common scale of measurement across grades and subjects. Therefore, the relative magnitude of the statistics across content areas and grades cannot be compared.

Table 12–4. Summary of Rasch Item Difficulties by Subject and Grade

Subject	Grade	N	Mean	SD	Min	Max
Mathematics	3	43	0.41	0.66	-1.12	1.49
Mathematics	4	43	-0.13	0.69	-1.76	1.08
Mathematics	5	43	0.22	0.75	-1.55	1.41
Mathematics	6	43	0.25	0.71	-2.15	1.36
Mathematics	7	43	0.07	0.66	-1.49	1.39
Mathematics	8	43	-0.16	0.58	-1.43	0.95
ELA	3	35	0.44	0.63	-1.16	1.42
ELA	4	39	0.22	0.69	-1.64	1.42
ELA	5	39	0.29	0.66	-1.02	1.82
ELA	6	39	0.53	0.66	-1.25	2.04
ELA	7	39	0.38	0.57	-0.73	1.36
ELA	8	39	0.13	0.68	-1.12	1.32
Science	4	43	0.84	0.65	-0.54	1.73
Science	8	43	0.40	0.50	-0.48	1.51

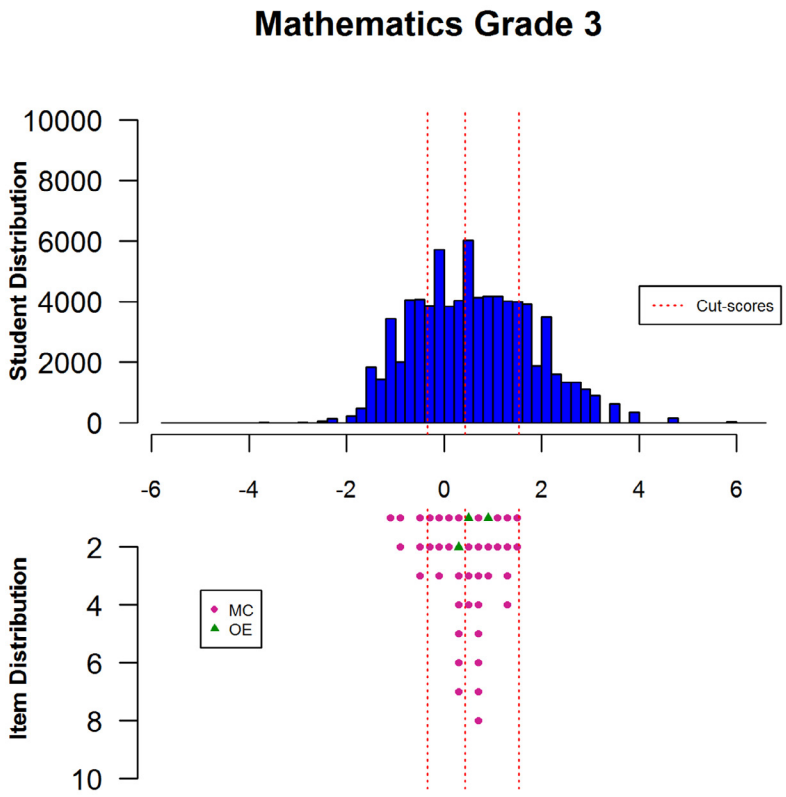
Note. The base scales were set in 2008 for science and 2015 for mathematics and ELA so the means are not expected to be zero.

ITEM DIFFICULTY-STUDENT ABILITY WRIGHT MAPS

The distributions of the Rasch item logits (item difficulty estimates) are shown on the item difficulty-student ability maps presented in Figure 12–2. In each item-student map, the top bar graph displays the student distribution on the logit scale, and the bottom displays markers of item difficulty parameter estimates. MC items are represented by a circle (all subjects), OE and TDA items are represented by a triangle (all subjects), and ESR items are represented by a square (ELA only). OE, TDA and ESR items are worth multiple points. As noted earlier, the Rasch model enables placement of both items and students on the same scale. Consequently, one can easily visualize information regarding the relationship between the distributions of item difficulty and student ability. The vertical red lines show the cut-points for each performance level. On the top plot, the logit represents lower abilities (negative values) to higher abilities (positive values), whereas on the bottom plot the logit represents easier items (negative values) to harder items (positive values). To achieve precise measures of student ability, the student distribution should mirror the item distribution.

In 2016, a pattern noted across the maps for many grades and content areas was for students to have relatively higher ability and for items to be relatively easier. Accordingly, test development for the 2017 PSSAs focused on centering the predicted test difficulties on the center of the 2016 examinee ability distribution to more closely align item difficulty with examinee performance. The same targets used to construct the 2017 PSSAs were used for future form construction. The Wright maps are presented in Figure 12–2.

Figure 12–2. Wright Maps



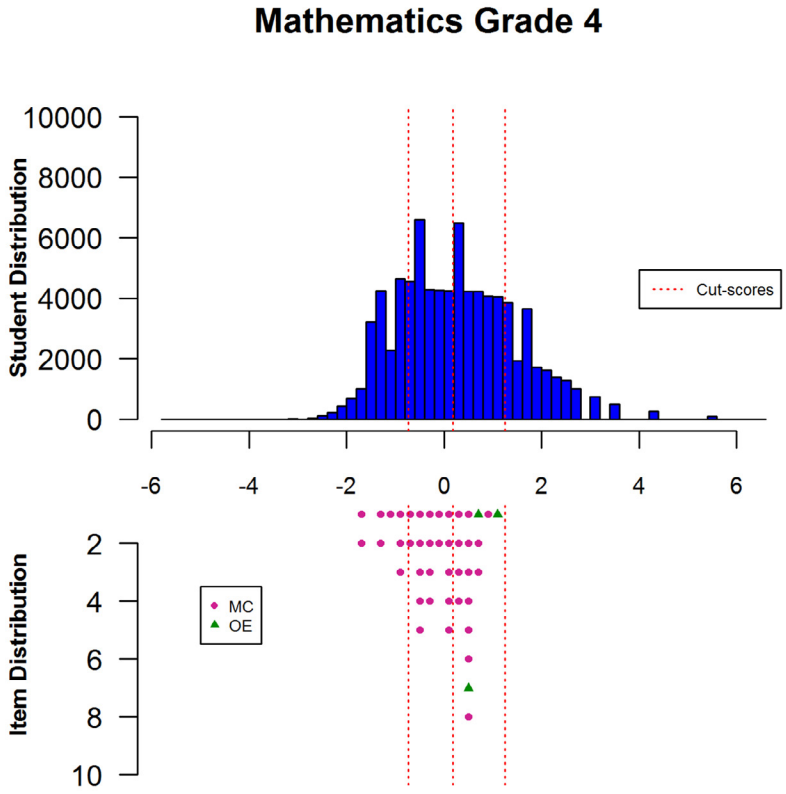
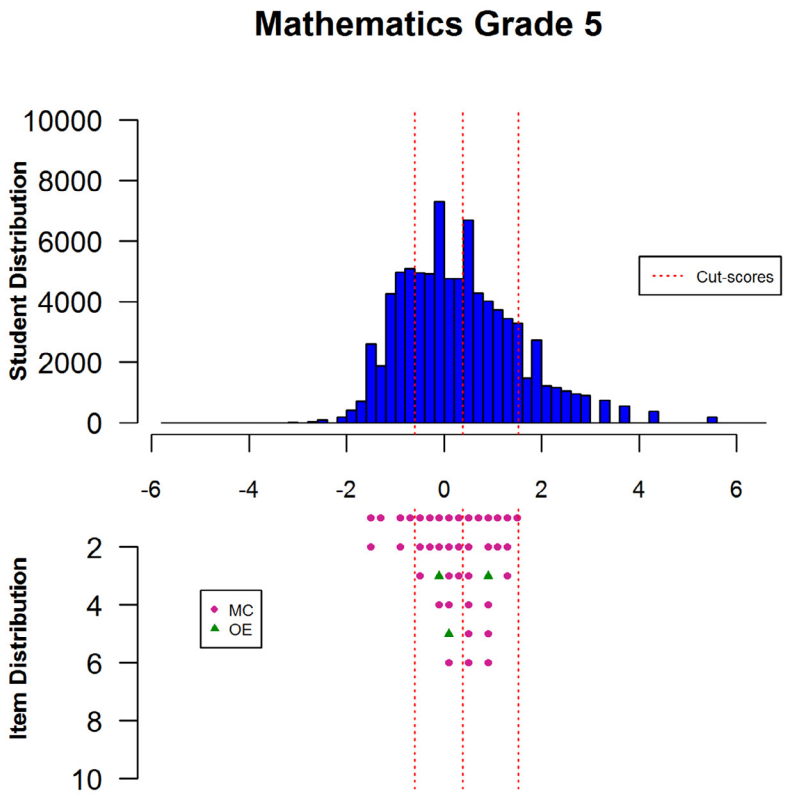


Figure 12–2 (continued). Wright Maps



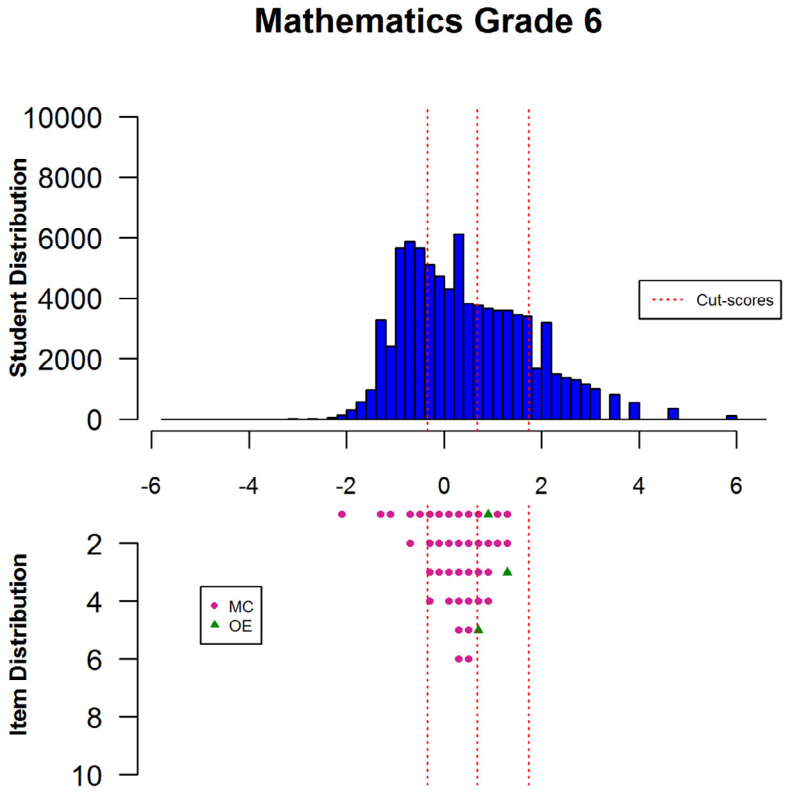
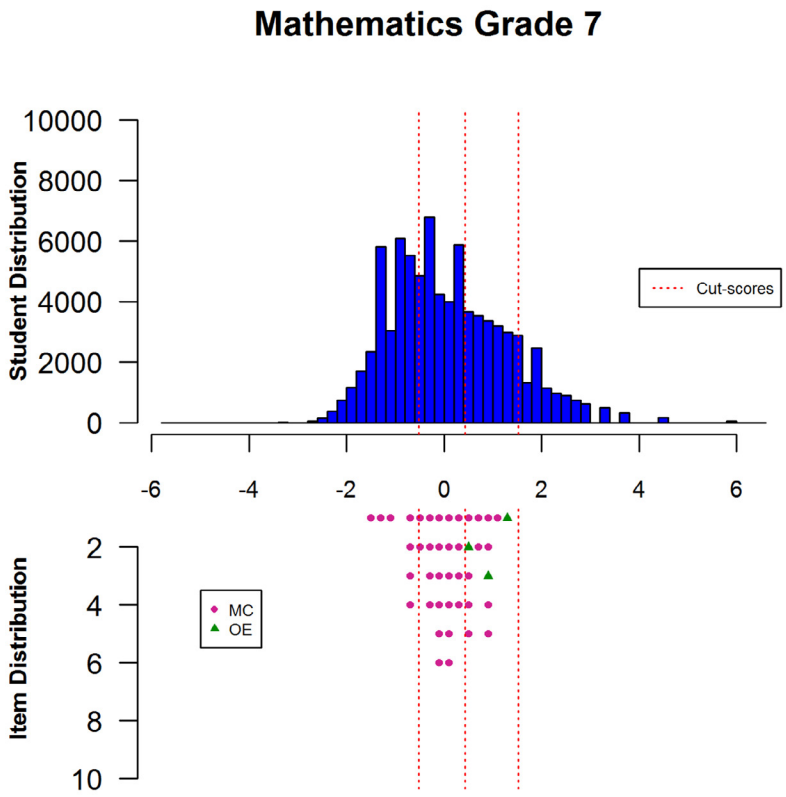


Figure 12–2 (continued). Wright Maps



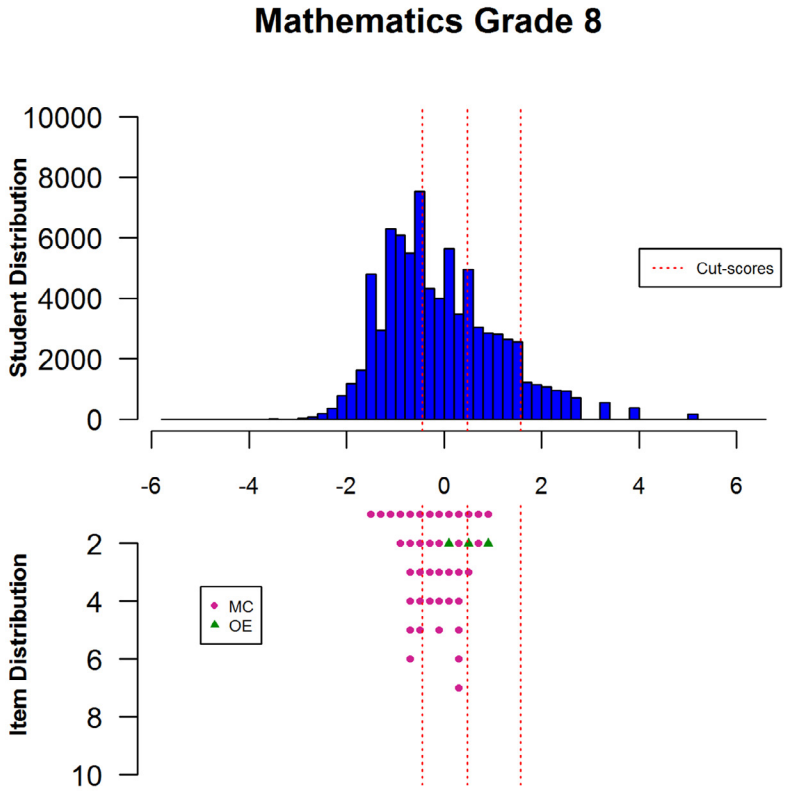
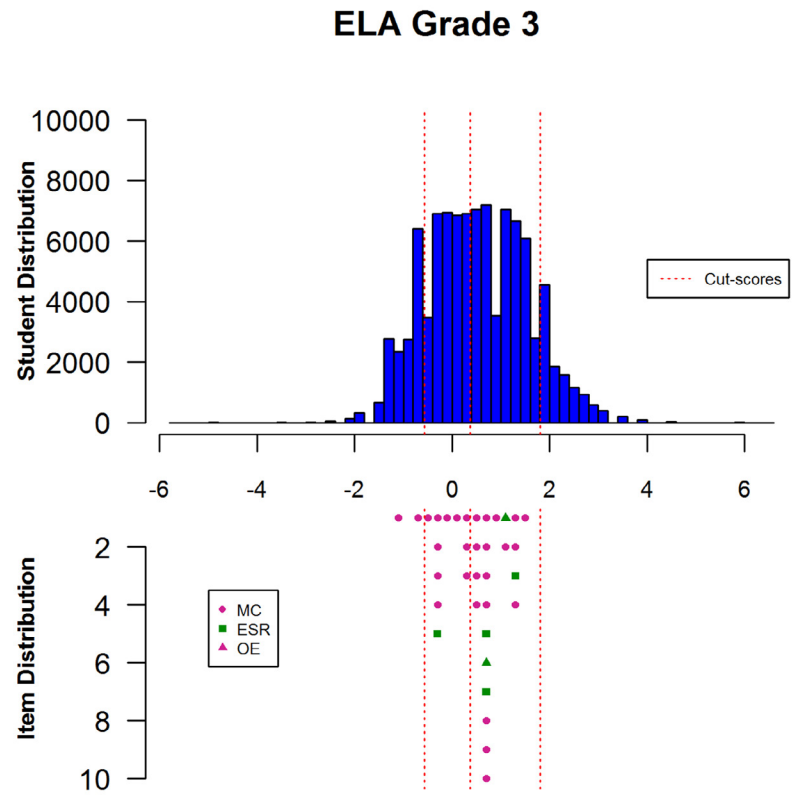


Figure 12–2 (continued). Wright Maps



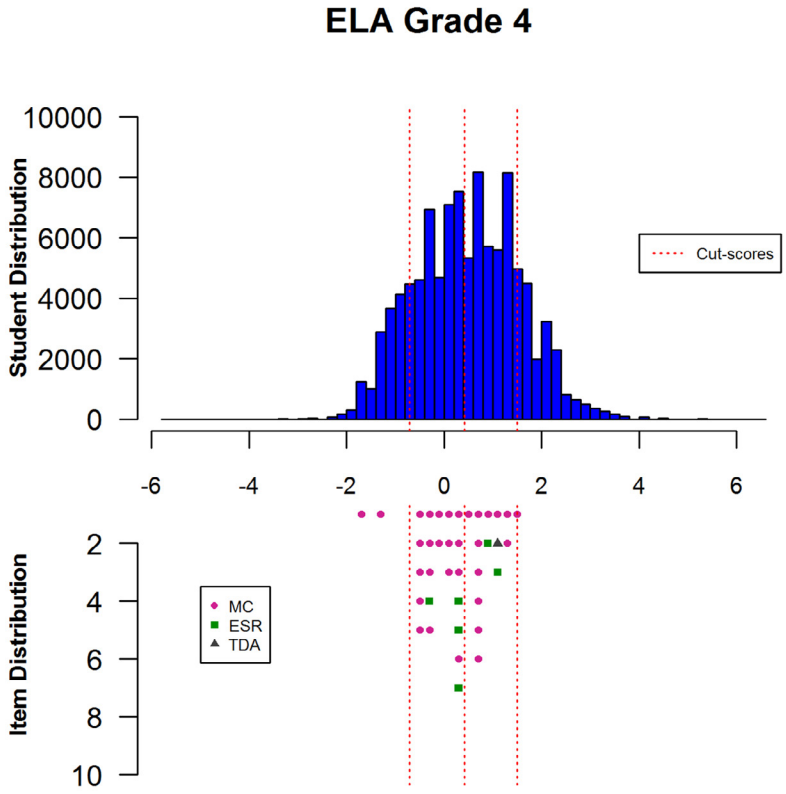
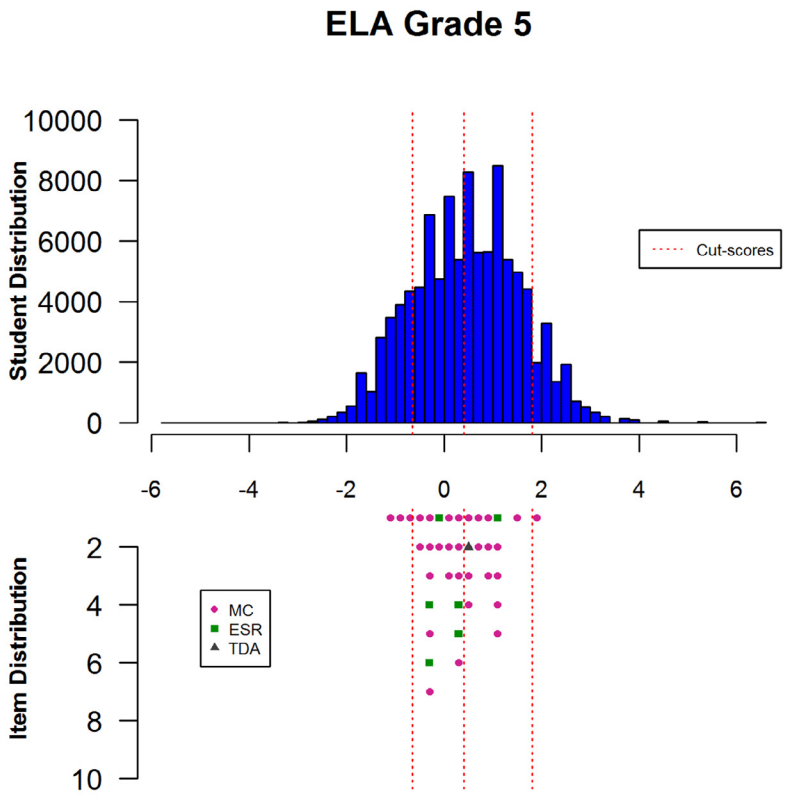


Figure 12–2 (continued). Wright Maps



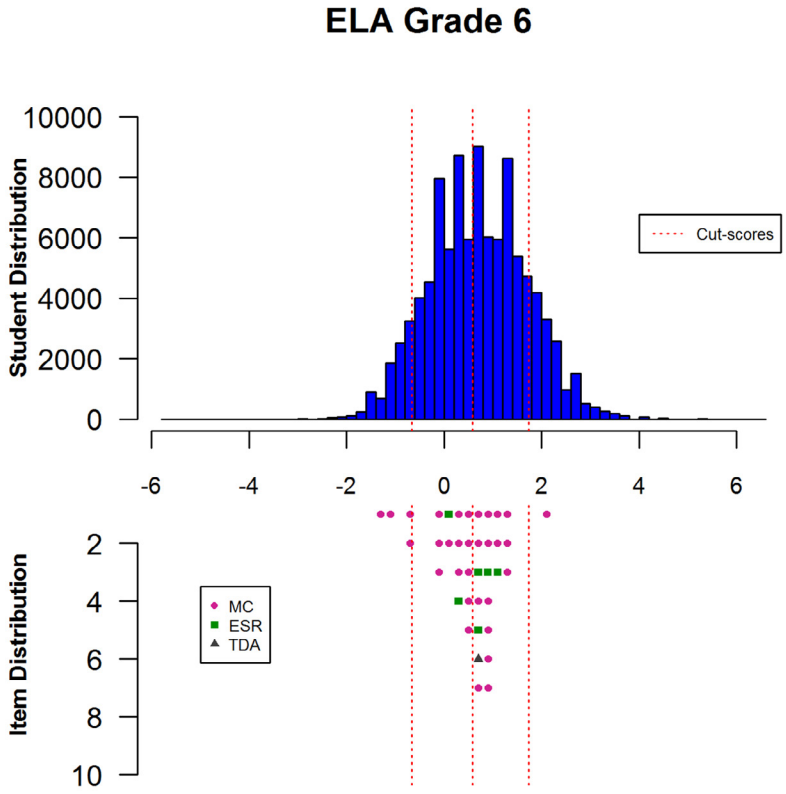
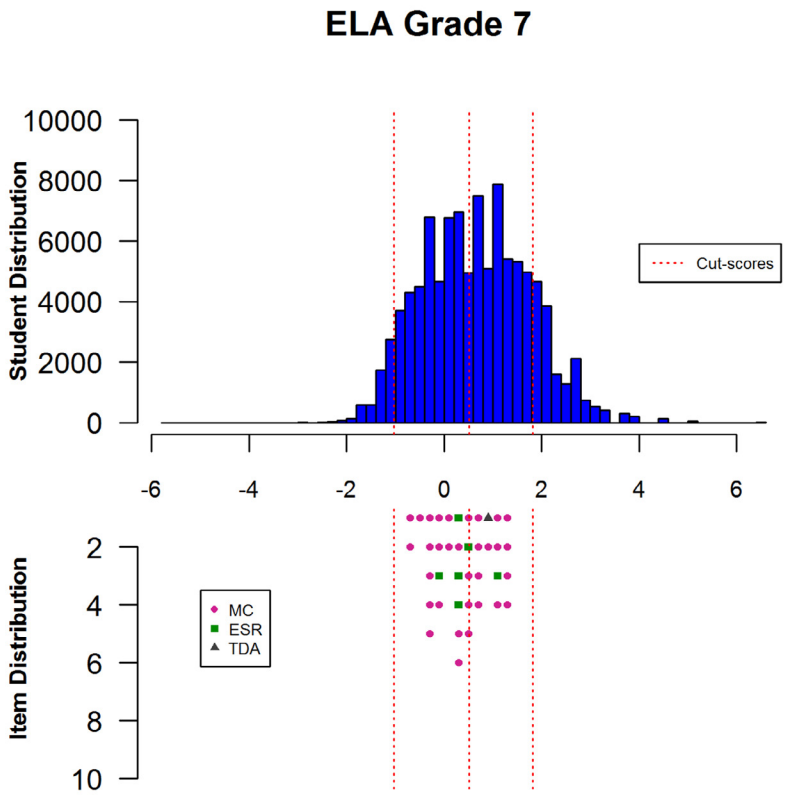


Figure 12–2 (continued). Wright Maps



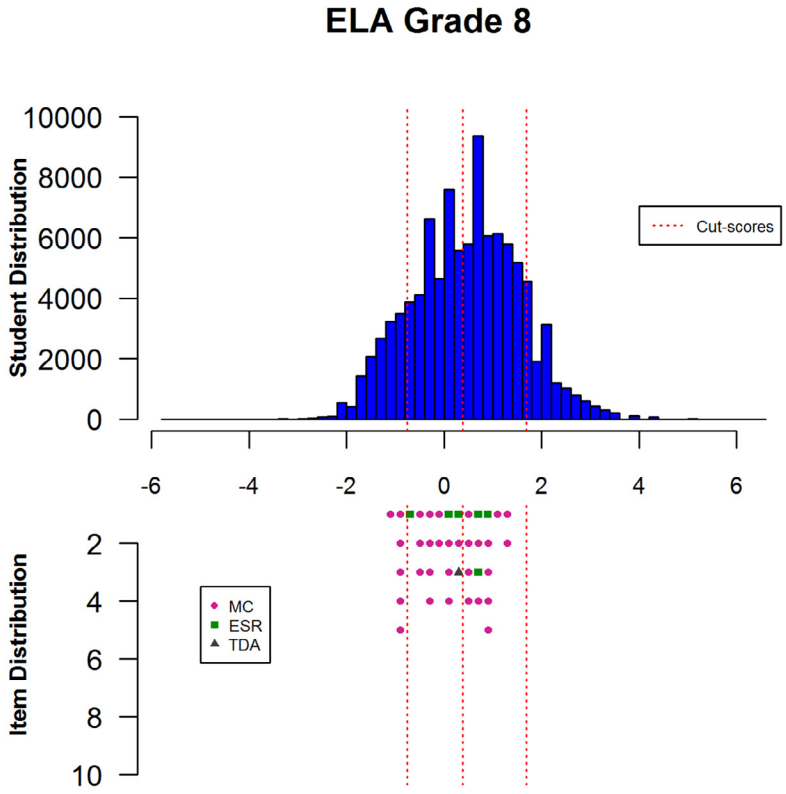
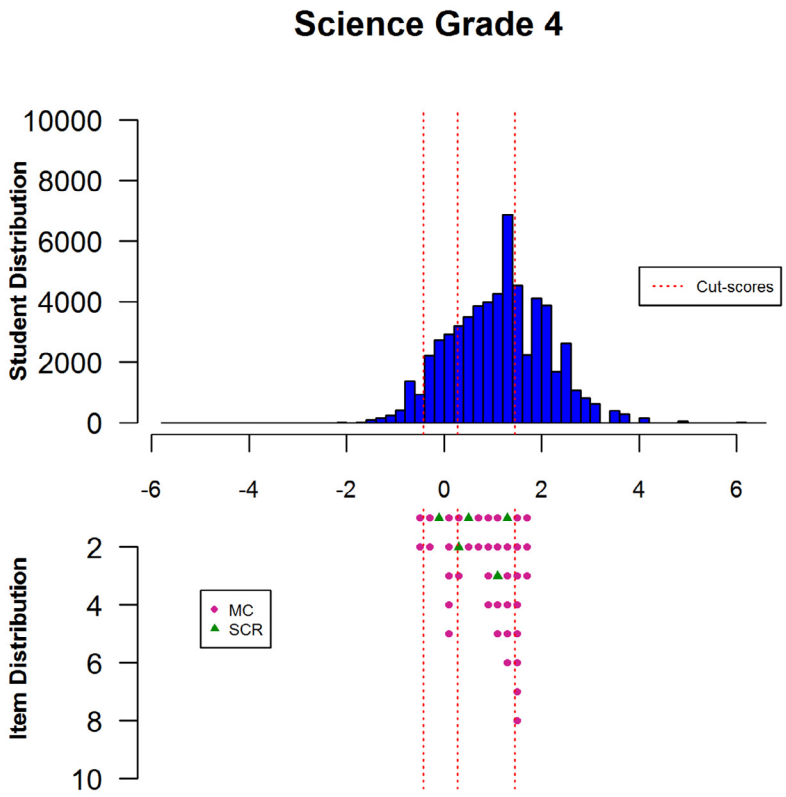
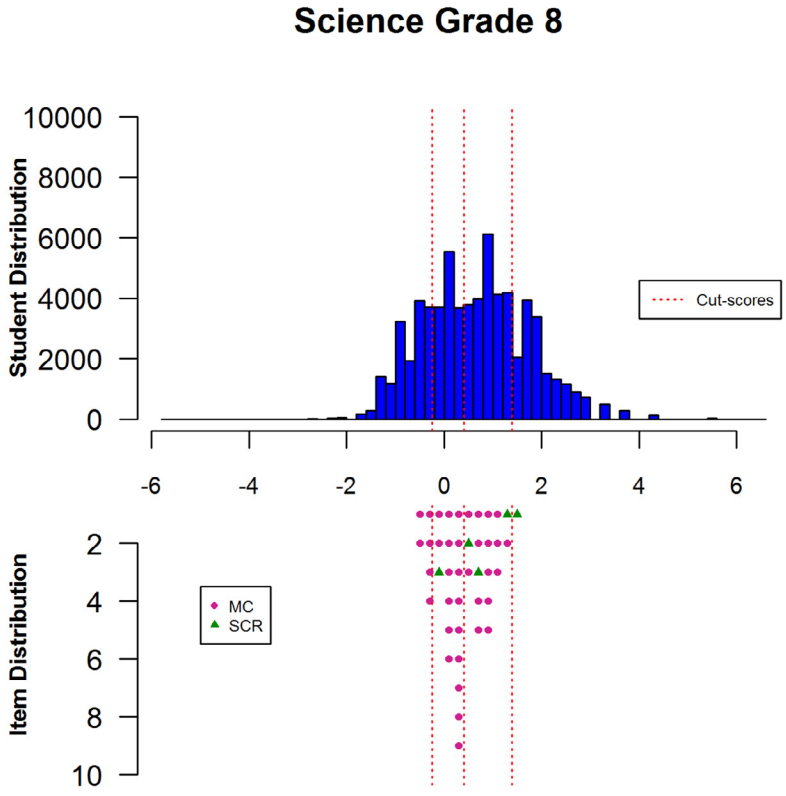


Figure 12–2 (continued). Wright Maps





CHAPTER THIRTEEN: PERFORMANCE LEVEL SETTING

Performance level setting events for grades 3 through 8 in mathematics and ELA took place June 9–12, 2015. However, no performance level setting occurred for science in 2015. A history (dates and methodology) of performance level setting events are provided in Table 13–1. The resulting cut scores from those events are provided in Table 13–2. For additional details about science standard setting event, refer to the PSSA science performance level setting technical report in 2008. For mathematics and ELA, please refer to the performance level setting report in 2015 for full details on the procedures used and the standard setting results.

Subsequent to the first administration of the reduced length tests described in detail in the Preface and Chapter Seven, the ELA cut scores reported below in Table 13–2 were validated by Pennsylvania educators during a modified Bookmark standards validation procedure in the Summer of 2018. Please refer to the standards validation report in 2018 for full details.

Table 13–1. Performance Level Setting/Validation Event Dates and Methodology

Subject	Grade	Methodology	Validation?	Event Date
Mathematics	3,4,5,6,7,8	Bookmark	No	Summer 2015
ELA	3,4,5,6,7,8	Bookmark	No	Summer 2015
Science	4, 8, 11	Bookmark	No	Summer 2008

PSSA CUT SCORES

Appendix M provides the scaled score cuts for each PSSA test. For reader convenience, these are documented next in a different format. Table 13–2 documents the cut scores on the scaled-score metric. PSSA scaling procedures are discussed further in Chapter Fourteen.

Table 13–2. PSSA Scaled-Score Metric Cut Scores by Subject and Grade

Subject	Grade	BB/B	B/P	P/A
Mathematics	3	923	1000	1110
Mathematics	4	908	1000	1107
Mathematics	5	901	1000	1113
Mathematics	6	897	1000	1105
Mathematics	7	904	1000	1109
Mathematics	8	906	1000	1108
ELA	3	905	1000	1143
ELA	4	887	1000	1107
ELA	5	893	1000	1139
ELA	6	875	1000	1115
ELA	7	845	1000	1130
ELA	8	886	1000	1130
Science	4	1150	1275	1483
Science	8	1150	1275	1464

Note. BB = Below Basic; B = Basic; P = Proficient; and A = Advanced.

CHAPTER FOURTEEN: SCALING

The purpose of a scaling analysis is to create a score scale. Scaling is used to transform test score values onto a scale more easily interpreted by users. For the PSSA, the resulting scaled scores will be used for score reporting and performance level classification. The PSSA classifies students into four achievement levels: Below Basic, Basic, Proficient, and Advanced.

The adoption of the Pennsylvania Core Standards in 2013 brought several changes to the PSSA in mathematics and ELA. In mathematics, content changed for grade levels, items involved more problem solving for deeper understanding, rulers were provided in grade 3 only, protractors were provided in grade 4, and formula sheets were provided in grades 4 through 8. In ELA, the new PSSA replaced PSSA Reading and PSSA Writing. Additional changes in ELA included reading passages that reflect the increased expectations of text complexity and new item types to reflect the emphasis on text-based answers and evidence to support claims. PSSA science continues to be aligned to the Pennsylvania Academic Standards for Science, Technology, Environment and Ecology.

The changes to mathematics and ELA necessitated performance level setting and the establishment of new score scales in 2015. Therefore, mathematics and ELA scaled scores for 2018 are not comparable to years prior to 2015. Science score scales were established in 2008 and no changes were made to science cut scores or score scales since that time. Therefore, science scaled scores are comparable to previous years back to the 2008 scores. Table 14–1 shows the scaled-score cuts for each subject and grade level.

SCALED SCORES

Individual student scores are reported as scaled scores. However, they are initially estimated as Rasch abilities (more information on the Rasch model is given in Chapter Twelve). Generally, scaled scores are preferred over Rasch ability values for reporting purposes. One issue is that Rasch ability values are on a scale that includes negative and decimal values. By transforming the Rasch ability values to scaled scores, all reported values can become positive integers. Scaled scores are usually obtained through some linear transformation of the Rasch ability values. The linear transformations used for the PSSA produce numeric values with three or four digits that are unit interval scaled scores. Each grade and subject has its own unique PSSA scaled score. Positive scores with no decimals make more sense to parents and students. Since Rasch ability values are comparative after linking to the base year, the transformed scaled scores have a common scale across years, even though the corresponding raw scores may differ. (Equating is discussed further in Chapter Fifteen.)

Essentially, PSSA scaled scores are derived through a two-step process. First, there is a nonlinear transformation that converts number correct scores to Rasch ability logits. Second, a linear transformation is used to convert logits to scaled scores. These and some additional considerations (e.g., rounding rules), are discussed further below.

DEFINITION OF SCOREABILITY

Answer documents are considered scoreable if they meet the attempt logic criterion for inclusion in the data files (see Chapter Nine).

At the item level, responses that were considered non-attempted or non-scoreable were assigned a score of zero. Details by item type are provided below.

- Multiple-choice (MC) items: All omit (no response) and multiple marks (more than one response selected without machine-discernible erasures) were scored as zeros.
- Open-ended (OE) items: All blank, copied, non-scoreable, foreign language, off-task, refusal, or unreadable responses were scored as zeros.
- Evidence-based selected-response (EBSR) items: Blank response for both parts OR part one marked with multiple marks and part two marked for all responses were scored as zeros.

WINSTEPS SCALING

Parameter estimates are derived using the WINSTEPS computer program (Linacre, 2019), which employs unconditional (UCON), joint-maximum-likelihood estimation (JMLE). WINSTEPS provides a conversion table that maps raw scores to logits (Rasch ability estimates). The logits are transformed to scaled scores as discussed below. Every year each test is scaled separately and then linked (see Chapter Fifteen).

ZERO AND PERFECT SCORES

WINSTEPS does not provide a direct ability estimate for zero (no points earned) or perfect (all points earned) raw scores. However, WINSTEPS has a default procedure for estimating such extreme scores, and this was used for the PSSA. Essentially, a fractional raw score (a value less than one) is added to zero scores and subtracted from perfect scores to determine the corresponding logit values for these extreme scores.

LINEAR TRANSFORMATION FORMULAS

PSSA scaled scores are obtained through a linear transformation of the Rasch ability estimates ($\hat{\theta}$). Specifically,

$$SS = m\hat{\theta} + b,$$

where *m* is the slope and *b* is the intercept.

For mathematics and ELA, the slope and intercept for each grade were derived by anchoring the Proficient cut score to a scaled score of 1000 and fixing the slope at 100. For science, the slope and intercept for each grade were derived by anchoring the Basic cut score at 1150 and the Proficient cut score at 1275.[1]

The slopes and intercepts for deriving PSSA scaled scores are provided in Table 14–2.

ROUNDING

The linearly transformed scaled scores are generally rounded to the nearest integer value for reporting purposes. Values greater than or equal to 0.50 are rounded up. Values less than 0.50 are rounded down.[2]

LOWEST OBTAINABLE SCALED SCORES

PSSA mathematics and ELA tests have a lowest obtainable scaled score (LOSS) of 600. For PSSA science, the LOSS values have been set to 1050 for Grade 4 and 925 for Grade 8. The selection of a LOSS is mainly based on two considerations: 1) extreme low scaled scores may have an impact on the average of the scaled scores at school/district level and 2) score truncation makes sense from a score precision perspective given measurement errors at the extremes are large. The LOSS values are documented in Table 14–1. See tables in Appendix N for LOSS *n*-counts.

HIGHEST OBTAINABLE SCALED SCORES

A highest obtainable scaled score (HOSS) is not set for the PSSA. Thus, the maximum possible scaled score value can float for each subject and grade. The upper bound varies from year to year, depending on the difficulty of the test form. Table 14–1 shows the maximum possible observed score for the current year's test. (Note: It may be that no student earned the maximum possible.) See tables in Appendix N for HOSS *n*-counts.

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[1] Anchoring two cut scores for mathematics and ELA was considered. However, this led to large variability in scaled scores across grades. Therefore, it was determined that one cut score would be anchored and the slope set at 100 for all grades.

[2] One exception to this rounding is in science where scores are rounded up (even if less than 0.50) if this action would put the rounded score into a higher performance level. This rounding rule has been in place for science since the establishment of the score scale and cut scores in 2008.

RAW-SCORE-TO-SCALED-SCORE TABLES

Full raw-to-scaled score tables can be found in Appendix N.

Table 14–1. PSSA Scaled Score Cuts for Each Performance Level by Subject and Grade

Subject	Grade	Min	BB/B[1]	B/P[1]	P/A[1]	Max[2]
Mathematics	3	600	923	1000	1110	1544
Mathematics	4	600	908	1000	1107	1533
Mathematics	5	600	901	1000	1113	1519
Mathematics	6	600	897	1000	1105	1524
Mathematics	7	600	904	1000	1109	1535
Mathematics	8	600	906	1000	1108	1466
ELA	3	600	905	1000	1143	1541
ELA	4	600	887	1000	1107	1602
ELA	5	600	893	1000	1139	1603
ELA	6	600	875	1000	1115	1583
ELA	7	600	845	1000	1130	1589
ELA	8	600	886	1000	1130	1599
Science	4	1050	1150	1275	1483	2302
Science	8	925	1150	1275	1464	2265

Notes. 1. BB = Below Basic; B = Basic; P = Proficient; and A = Advanced.
2. Scaled Score Maximum Values are unique for each year's test.

Table 14–2. PSSA Intercept and Slope by Subject and Grade

Subject	Grade	Intercept	Slope
Mathematics	3	956.31	100.00
Mathematics	4	981.92	100.00
Mathematics	5	961.69	100.00
Mathematics	6	931.41	100.00
Mathematics	7	956.16	100.00
Mathematics	8	951.76	100.00
ELA	3	962.47	100.00
ELA	4	957.49	100.00
ELA	5	958.32	100.00
ELA	6	940.78	100.00
ELA	7	947.65	100.00
ELA	8	961.11	100.00
Science	4	1225.65	176.75
Science	8	1196.64	191.54

Notes. Linear Transformation Intercepts and Slopes are used to derive the Scaled Scores.

STRAND (REPORTING CATEGORY) SCORE STRENGTH PROFILE

Strength profiles for strand (reporting category) scores have been provided since 2009. The following process was followed to derive the profile:

- The items for each strand were identified.
- WINSTEPS runs were undertaken that anchored the logit values for each strand's items to get the raw-to-logit score table for each strand. This is sometimes referred to as fixed item parameter scaling.
- The appropriate linear transformations (based on content and grade from Table 14–2) were applied to the logit values to derive strand scaled scores.

The strand scaled scores were categorized as follows: L=Low; M=Medium; H=High. The maximum possible strand scaled score was converted to H in cases where no strand scaled score equaled or exceeded the Advanced scaled score cut. Note that these designations are provided as an indication of performance levels within a strand, but as standards have not been set that describe strand performance as has been done at the overall test level, performance level descriptions for the overall test should not be used to describe strand performance. See Chapter Sixteen for information regarding strength profiles used in score reports.

CHAPTER FIFTEEN: EQUATING

Equating is a statistical process that is used to adjust scores on test forms so that scores on all forms on the test scale can be used interchangeably (Kolen & Brennan, 2004) even though the test forms consist of different items. In large-scale testing programs, it is a common practice to have different item sets appear in different test forms across administrations. Students' raw scores (or number-correct scores) cannot be directly compared between forms or administrations because they depend on the difficulty of the items on a form. The same student can score higher on an easy test than on a difficult test. Although there are various equating methods available for different psychometric paradigms (IRT and CTT), the PSSA utilizes an IRT approach aligned with the assumptions of the Rasch model, the IRT pre-equating method. The first step in any IRT equating method is to conduct scale linking, in which item difficulties from independent calibrations are transformed so that they can be placed on the same scale (Kolen & Brennan, 2014). Once scale linking is conducted, we can proceed with any IRT-based equating methods.

Prior to 2019, the PSSA employed a post-equating design with a chain-linking approach for scale linking. For the first time in 2019, a pre-equating design was implemented for PSSA due to the many advantages it offers. Specifically, employing a pre-equating method allowed for a shortened turn-around for score reporting due to the use of previously linked item parameters for test construction and development of raw-to-scaled-score tables. In this chapter, we provide a brief comparison of pre- and post-equating, the procedure implemented for the 2024 PSSA, and the evaluation of pre-equated and post-equated solutions. Summary results are also presented.

PRE- VS. POST-EQUATING

As with other Pennsylvania assessment programs, the Rasch model is used to guide the test design, form construction, calibration, scaling, and equating of the PSSA. The first step in equating test forms using the Rasch model is to place the item parameters from different administrations on the same scale, also referred to as scale linking. Once the item parameters are on the same scale, the Newton Raphson procedure can be used to convert number-correct scores to Rasch ability levels, which in turn are transformed to scaled scores, ultimately allowing for score comparability within and across administrations.

As is the case with many K–12 large-scale assessment programs, all scored items are field tested prior to operational use. In theory, once the field-test items' difficulties are placed on the base scale one should not expect their Rasch item difficulties to change, except within a reasonable range of measurement error, after they are administered in an operational test provided the Rasch model fits the data. The subsequent use of these item parameters for test scoring is referred to as pre-equating.

In contrast, post-equating requires data from the current administration to be calibrated. Then, newly estimated item parameters are linked and placed on the same scale as banked item parameters, and scores are equated. With this in mind, pre-equating is advantageous because much of the work is completed before test administration, allowing more time for quality control; whereas post-equating relies on the same given timeframe for calibration, scale linking, equating scores, and implementing quality control procedures.

As the calibration of item parameters using IRT methods assumes equivalent samples of students from the same population, the two equating approaches should, in theory, yield the same results. However, this is unlikely to be true in practice, so there are practical advantages and disadvantages of each approach. The use of pre-equating can facilitate the operational process in terms of rapid score reporting, more time for quality control, and more flexibility in the assessment. One successful application of pre-equating is for computer-adaptive tests (CAT), such as the Pennsylvania Classroom Diagnostic tools (CDT), where test questions are tailored to a student's achievement as the test progresses. The CDT is designed to provide diagnostic information about student performance and is available throughout the school year at no cost. CATs require automated scoring for all item types (including constructed-response) and allow for immediate score reporting upon completion of the test. However, a variety of issues need to be considered when using pre-equating in practice. For example, students may not be motivated to take the field tests, especially standalone field tests, which may make the items appear harder in the field test than in the operational test (Eignor, 1985; Eignor & Stocking, 1986; Stocking & Eignor, 1986; Kolen & Harris, 1990). Other concerns for the field-test items include item context, item position, and sample size. In contrast, post-equating, when applicable, does not have the same motivational concerns as pre-equating. Also, post-equating uses post-administration data and is sometimes considered to yield more accurate analysis results, given that the number of students who take the operational tests is usually large. On the other hand, when the reporting window is extremely

tight, post-equating must occur within a very short time and therefore allows less time for the equating analyses and quality control.

CONSIDERATIONS FOR IMPLEMENTING PRE-EQUATING IN PSSA

To implement the pre-equating model in PSSA, additional efforts have been made to enhance the accuracy of pre-equating results based on findings from literature. For example, to address the concerns regarding students' motivation to take field tests, stand-alone field tests were not used; field-test items were embedded throughout the test so that students would perceive no differences between field-test items and operational items. This approach allows Rasch item difficulty estimates to be used for future pre-equating purposes and is based on the assumption that students should be equally motivated to take the operational and embedded field-test items, especially when they are not aware of which items are field-test items. To minimize item context and item position effects (i.e., lack of motivation and fatigue), field-test items were interspersed within the operational sections. With this design, students have a smaller chance of knowing the field-test item positions. Fatigue effects due to field-test items being placed in the last section of the operational test can be mitigated in this design as well. To improve the accuracy of the Rasch item difficulties estimated from the field-test data, DRC scored all MC items and a large sample of CR items, given that larger sample sizes can increase the estimation accuracy. The test designs for the operational PSSA mathematics, ELA, and science assessments used multiple test forms that shared several common elements. The operational items were the same on all forms and for all students. Student total raw scores and scaled scores, as well as accountability reporting, were based exclusively on the operational items.

The primary purpose of implementing pre-equating methodologies in PSSA was to shorten the score reporting window. Although PSSA forms have always been built using previously administered FT items with estimated Rasch difficulties, item selection for assessment programs that utilize pre-equating relies heavily on data-model fit, and in turn, the form construction process relies on items' statistical properties. Once items were selected for forms, approved by DRC staff and PDE, raw-to-scaled score tables were built using the same statistical properties.

SCALE LINKING

PSSA utilizes a chained scale linking design to conduct pre-equating verification, to obtain item parameters for field-tested items, and to update item parameters for operational items. Results from scale linking are item parameters (Rasch difficulties and thresholds) for field-tested (FT) items that are on the base scale. The chain originates from a scale of measurement defined for each test's base form, which is used as the reference for calibrating all items in the item pool. The base form is usually the form upon which the cut scores were established (see Chapter Thirteen). In the case of the PSSA, scales and cut scores were established for Science in 2008 and for ELA and mathematics in 2015. Therefore, the 2024 mathematics and ELA tests are chain linked to the scales set in 2015 and the science tests are chain linked to the scales set in 2008.

The Rasch Partial Credit Model (RPCM) is used for the calibrating data for the PSSA, given its flexibility for dichotomously scored (i.e., MC) and polytomously scored (i.e., CR, EBSR) item types (Masters, 1982). The RPCM is discussed in detail in Chapter Twelve. Without employing scale linking, Rasch difficulties for the field-tested items would not be directly comparable to other items on the base scale. A partially anchored calibration was employed to estimate all item parameters for each test on its respective base scale. First, all OP item parameters were evaluated for model fit to ensure that previously estimated (banked) item parameters were still reasonable and appropriate. If misfitting items were identified, their parameters were re-estimated (see Appendix O for OP item difficulties). Then OP item parameters were anchored and FT item parameters were freely estimated for each subject and grade level. This allowed for the estimation of FT item parameters on the baseline scale (see Appendix F for all item statistics).

For the pre-equating verification, we evaluated the differences between the fully anchored pre-equated solution and the partially anchored pre-equated solution (if misfitting items were identified). Both sets of item parameters were then used to estimate student abilities, which were then transformed to scaled scores. (Transformation formulas are provided in Chapter Fourteen.) The following steps outline the scale linking procedure used for PSSA. All calibration was conducted using WINSTEPS (Linacre, 2019).

1. Calibrate operational (OP) items in a fully anchored design.
    a. Exclude FT items.
    b. Identify include only students that have completed the test.
2. Identify misfitting items from Step 1 using the following criteria.
    a. Identify items with infit mean-square values greater than 1.3 or items with absolute displacement greater than 0.5 logits.
3. For any item identified in Step 2 due to infit issues, allow OP item parameters to be freely calibrated in a partially-anchored design. This allows for item parameters to be updated for misfitting items[1].
    a. Exclude FT items.
    b. Include only students that have completed the test.
4. Calibrate OP and auto-scored FT items in a partially-anchored concurrent design.
    a. Anchor OP item parameters to the banked values (used in Step 1) or the updated values (estimated in Step 3).
    b. Include all operational (OP) and auto-scored (MC or EBSR) FT items.
    c. Include only students that have completed the test.
5. Calibrate OP and FT items in a partially-anchored concurrent design.
    a. Anchor OP item parameters to the banked values (used in Step 1) or the updated values (estimated in Step 3).
    b. Anchor FT autoscored item parameters to those estimated in Step 4.
    c. Include all operational (OP) and field-test (FT) items.
    d. Include only students with scores for FT CR items.
    e. The resulting item parameters are banked for future use.

[1] Step 3 is part of the scale maintenance plan discussed later in this chapter.

PRE-EQUATING VERIFICATION

Although extra care has been taken to guarantee the success of pre-equating during the test design, form construction, and calibration of embedded field-test items, DRC ensured that the pre-equated results had reasonable data-model fit during the pre-equating verification process. Once sufficient data was available, pre-equating verification was conducted to assess data-model fit and allow the parameters of any misfitting items to be freely calibrated. Any misfitting item was identified, and parameters were freely estimated in a subsequent calibration (using a partially anchored design) to improve data-model fit. The data and results presented in this section refer to misfitting items as those in which infit mean-square values exceeded a criterion of 1.3. The number of items identified during pre-equating verification for each subject and grade level is shown in Table 15–1. Items were identified across all mathematics grade levels, ELA grades 4, 5, and 8 and Science grade 8. Differences were analyzed between fully anchored pre-equated results (hereinafter "pre-equated") and partially anchored pre-equated results (hereinafter "post-equated"). Pre-equating verification analyses were conducted at the item level, person level, and form level. Complete detailed results from the pre-equating verification analyses can be found in Appendix T.

Table 15–1. Number of Misfitting Items Identified during Pre-Equating Verification

Grade	Mathematics	ELA	Science
Grade 3	1	0	-
Grade 4	2	1	0
Grade 5	1	2	-
Grade 6	3	0	-
Grade 7	1	0	-
Grade 8	2	2	2

At the same time, DRC test development specialists reviewed all misfitting items (i.e., items with infit mean-square values greater than 1.3) and items with large displacement values (i.e., an absolute value greater than 0.5) to ensure that items were presented in the same manner as they were in prior administrations.

ITEM-LEVEL ANALYSES

Item-level analyses indicate whether the data fit the Rasch model with respect to item-fit statistics. This analysis included identifying the number of items that had reasonable fit statistics (i.e., greater than 0.7 and less than 1.3) supported by prior literature (Wright & Linacre, 1994). Tables 15–2M, 15–2E, and 15–2S show the item fit statistics comparisons for mathematics, ELA, and science, respectively. The items fit the pre-equated and post-equated solutions similarly. The results show that the data fit the pre-equated solution well, which provided evidence that the pre-equated solution was appropriate.

Table 15–2M. Mathematics Item Infit and Outfit Mean-Square Statistics by Grade

Grade	Method	N	Mean*	SD*	Min*	Max*	[0.7,1.3]*	Mean+	SD+	Min+	Max+	[0.7,1.3]+
3	Pre	78393	0.98	0.14	0.66	1.29	42/43	1.00	0.21	0.52	1.46	36/43
3	Post	78393	0.99	0.13	0.78	1.30	43/43	1.01	0.21	0.65	1.46	37/43
4	Pre	81871	0.97	0.12	0.71	1.23	43/43	0.97	0.19	0.57	1.34	37/43
4	Post	81871	0.98	0.12	0.74	1.24	43/43	0.97	0.19	0.57	1.34	37/43
5	Pre	83698	0.96	0.12	0.64	1.20	42/43	0.96	0.19	0.51	1.35	37/43
5	Post	83698	0.96	0.12	0.72	1.21	43/43	0.97	0.19	0.57	1.37	38/43
6	Pre	83500	0.98	0.13	0.62	1.27	42/43	0.97	0.19	0.47	1.42	41/43
6	Post	83500	0.99	0.12	0.73	1.28	43/43	0.99	0.18	0.73	1.43	40/43
7	Pre	81580	0.98	0.13	0.67	1.22	42/43	0.99	0.20	0.50	1.45	35/43
7	Post	81580	0.99	0.12	0.75	1.22	43/43	1.00	0.20	0.60	1.46	35/43
8	Pre	80686	0.97	0.10	0.72	1.15	43/43	0.96	0.14	0.58	1.25	42/43
8	Post	80686	0.98	0.09	0.82	1.15	43/43	0.97	0.14	0.68	1.25	42/43

Notes. *Denotes Infit
+Denotes Outfit

Table 15–2E. ELA Item Infit and Outfit Mean-Square Statistics by Grade

Grade	Method	N	Mean*	SD*	Min*	Max*	[0.7,1.3]*	Mean+	SD+	Min+	Max+	[0.7,1.3]+
3	Pre	98212	1.02	0.12	0.81	1.24	35/35	1.03	0.17	0.72	1.36	32/35
3	Post	98212	1.02	0.12	0.81	1.24	35/35	1.03	0.17	0.72	1.36	32/35
4	Pre	101739	1.03	0.16	0.57	1.46	37/39	1.05	0.22	0.58	1.49	30/39
4	Post	101739	1.03	0.16	0.57	1.42	37/39	1.05	0.22	0.58	1.45	30/39
5	Pre	100837	1.04	0.14	0.66	1.55	36/39	1.09	0.23	0.66	1.74	34/39
5	Post	100837	1.04	0.14	0.66	1.55	37/39	1.09	0.22	0.66	1.84	34/39
6	Pre	100379	1.03	0.12	0.59	1.24	38/39	1.05	0.19	0.57	1.52	32/39
6	Post	100379	1.03	0.12	0.59	1.24	38/39	1.05	0.19	0.57	1.52	32/39
7	Pre	100568	1.02	0.12	0.58	1.26	38/39	1.04	0.17	0.59	1.41	36/39
7	Post	100568	1.02	0.12	0.58	1.26	38/39	1.04	0.17	0.59	1.41	36/39
8	Pre	99162	1.04	0.15	0.76	1.51	37/39	1.08	0.22	0.62	1.69	34/39
8	Post	99162	1.04	0.15	0.76	1.53	37/39	1.08	0.22	0.62	1.70	34/39

Notes. *Denotes Infit
+Denotes Outfit

Table 15–2S. Science Item Infit and Outfit Mean-Square Statistics by Grade

Grade	Method	N	Mean*	SD*	Min*	Max*	[0.7,1.3]*	Mean+	SD+	Min+	Max+	[0.7,1.3]+
4	Pre	59216	0.99	0.11	0.67	1.26	42/43	1.01	0.16	0.56	1.35	40/43
4	Post	59216	0.99	0.11	0.67	1.26	42/43	1.01	0.16	0.56	1.35	40/43
8	Pre	66954	0.99	0.11	0.79	1.21	43/43	0.98	0.15	0.68	1.33	41/43
8	Post	66954	0.99	0.10	0.79	1.18	43/43	0.99	0.15	0.68	1.33	41/43

Notes. *Denotes Infit
+Denotes Outfit

PERSON-LEVEL ANALYSES

The second set of analyses conducted consisted of analyzing person-level fit statistics, which can be another indicator of whether the data fit the model. Tables 15–3M, 15–3E, and 15–3S summarize the overall person infit and outfit statistics by grade level for both the pre-equated and post-equated solutions for mathematics, ELA, and science, respectively. The table specifies the mean, standard deviation (SD), minimum (Min), maximum (Max), and proportion of persons that had reasonable fit statistics (i.e., greater than 0.5 and less than 1.5)[2] for both infit and outfit statistics. The results in the tables indicate that person-level fit does not vary by equating method.

Furthermore, Appendix T includes the results for the pre-equating verification, including the person infit boxplots for all subjects and grade levels for both pre-equated and post-equated solutions. Appendix T also provides boxplots disaggregated by gender, ethnicity, English Learners (ELs), and students with individualized educational plans (IEPs). The person infit plots indicate that the data fits the pre- and post-equated solutions similarly.

Table 15–3M. Mathematics Person Infit and Outfit Mean-Square Statistics by Grade

Grade	Method	N	Mean*	SD*	Min*	Max*	[0.5,1.5]*	Mean+	SD+	Min+	Max+	[0.5,1.5]+
3	Pre	78393	0.98	0.19	0.53	3.54	98.8%	1.00	0.24	0.14	3.49	94.9%
3	Post	78393	0.98	0.19	0.53	3.54	98.7%	1.01	0.26	0.14	4.37	94.1%
4	Pre	81871	0.96	0.20	0.41	3.00	98.5%	0.97	0.25	0.11	9.90	96.0%
4	Post	81871	0.97	0.20	0.42	3.01	98.4%	0.97	0.26	0.11	9.90	95.2%
5	Pre	83698	0.97	0.21	0.49	3.60	98.1%	0.96	0.26	0.21	6.69	94.9%
5	Post	83698	0.98	0.21	0.49	3.59	98.0%	0.97	0.28	0.21	8.88	94.2%
6	Pre	83500	0.97	0.19	0.43	3.16	98.7%	0.97	0.24	0.09	9.90	96.6%
6	Post	83500	0.98	0.19	0.43	3.17	98.6%	0.99	0.28	0.09	9.90	95.4%
7	Pre	81580	0.97	0.18	0.46	3.45	98.9%	0.99	0.22	0.06	4.45	96.5%
7	Post	81580	0.98	0.19	0.46	3.46	98.8%	1.00	0.23	0.06	5.82	95.8%
8	Pre	80686	0.96	0.18	0.52	3.08	98.5%	0.96	0.18	0.15	4.15	98.2%
8	Post	80686	0.97	0.19	0.51	3.11	98.5%	0.97	0.20	0.15	5.06	97.8%

Notes. *Denotes Infit
+Denotes Outfit

[2] While items and persons are on the same scale, items tend to be more stable. As such, stricter rules are applied to item-fit statistics than person-fit statistics in determining reasonable fit.

Table 15–3E. ELA Person Infit and Outfit Mean-Square Statistics by Grade

Grade	Method	N	Mean*	SD*	Min*	Max*	[0.5,1.5]*	Mean+	SD+	Min+	Max+	[0.5,1.5]+
3	Pre	98212	1.02	0.20	0.46	2.23	98.1%	1.03	0.23	0.19	4.81	96.0%
3	Post	98212	1.02	0.20	0.46	2.23	98.1%	1.03	0.23	0.19	4.81	96.0%
4	Pre	101739	0.99	0.29	0.28	3.42	94.6%	1.01	0.28	0.09	6.30	93.8%
4	Post	101739	0.99	0.29	0.29	3.42	94.6%	1.01	0.28	0.09	6.26	93.8%
5	Pre	100837	1.00	0.31	0.35	3.58	91.7%	1.06	0.36	0.11	9.90	90.5%
5	Post	100837	1.00	0.31	0.34	3.53	91.7%	1.06	0.36	0.11	9.90	90.6%
6	Pre	100379	0.98	0.29	0.31	2.73	93.2%	1.02	0.29	0.15	4.43	92.8%
6	Post	100379	0.98	0.29	0.31	2.73	93.2%	1.02	0.29	0.15	4.43	92.8%
7	Pre	100568	0.94	0.29	0.33	2.88	93.9%	1.01	0.29	0.11	5.94	93.0%
7	Post	100568	0.94	0.29	0.33	2.88	93.9%	1.01	0.29	0.11	5.94	93.0%
8	Pre	99162	1.04	0.35	0.30	3.18	89.5%	1.06	0.35	0.12	5.95	89.6%
8	Post	99162	1.05	0.35	0.30	3.15	89.5%	1.06	0.35	0.12	6.02	89.5%

Notes. *Denotes Infit
+Denotes Outfit

Table 15–3S. Science Person Infit and Outfit Mean-Square Statistics by Grade

Grade	Method	N	Mean*	SD*	Min*	Max*	[0.5,1.5]*	Mean+	SD+	Min+	Max+	[0.5,1.5]+
4	Pre	59216	0.99	0.14	0.56	1.85	99.9%	1.01	0.21	0.27	3.92	97.0%
4	Post	59216	0.99	0.14	0.56	1.85	99.9%	1.01	0.21	0.27	3.92	97.0%
8	Pre	66954	0.99	0.12	0.63	2.01	99.9%	0.98	0.15	0.27	3.25	99.4%
8	Post	66954	0.99	0.13	0.61	2.02	99.9%	0.99	0.16	0.26	3.30	99.3%

Notes. *Denotes Infit
+Denotes Outfit

NORMALIZED SCALED SCORE DIFFERENCES

On the form-level, we evaluated differences between pre-equated and post-equated results. Normalized differences were calculated as the difference between the scaled score divided by the average CSEM of pre- and post-equated results at each raw score point (see Equation below). Normalized differences were all within reasonable expectations (min = -0.06, max = 0.16), where the largest differences were observed for Math grade 6 (min = 0, max = 0.16). The plots for normalized scaled score differences are included in Appendix T.

$$Normalized\ Scaled\ Score\ Difference = \frac{SS_{Pre} - SS_{Post}}{(CSEM_{Pre} + CSEM_{Post})/_2}$$

PERFORMANCE LEVEL CLASSIFICATION

Pre-equated solutions were considered reasonable if classification consistency did not change more than 5%. Table 15–4 shows the consistency of classifications with respect to performance levels. The three numeric values within each cell refer to the proportion of performance classifications that do not agree at each of the three cuts (Basic, Proficient, and Advanced, respectively). If a numeric entry is followed by a negative sign, then pre-equating resulted in a lower percentage of students in the adjacent performance level when compared to post-equating. On the other hand, if the numeric entry is followed by a positive sign, then pre-equating resulted in a higher percentage of students in the adjacent performance level when compared to post-equating. "Exact" indicates that there was exact agreement between the pre-equated and post-equated solutions. Lastly, a dash indicates that no items were identified during pre-equating validation, and no post-equating was conducted.

Performance level classification was identical between the pre- and post-equated solutions for most subjects and grave levels. There were slight differences for Math grade 5 and ELA grade 8, in which the differences between the pre-equated scoring table and the post-equated scoring table was 1 raw cut-score at a single performance level. Moreover, the differences in performance level classification did not occur at the Basic/Proficient cut-score. Specifically for math grade 6, 3% of students were classified as Basic when pre-equating was used and Below Basic when post-equating was used. After comparing and evaluating the results, the percentage of students classified differently was less than 5% within each classification, subject, and grade level. The TAC agreed that if classification consistency was less than 5%, then pre-equated solutions should be accepted. The comparison of raw-to-scale score conversion tables for pre-equated and post-equated solutions are shown in Appendix T, Table T–1.

Table 15–4. Performance Level Impact Summary Between Pre- and Post-equated Solutions by Subject and Grade

Grade	Mathematics	ELA	Science
Grade 3	Exact	-	
Grade 4	Exact	Exact	-
Grade 5	Exact	Exact	
Grade 6	(3+,0,0)	-	
Grade 7	Exact	-	
Grade 8	Exact	(0,0,2-)	Exact

Note. A dash (-) represents that no items were identified during the pre-equating verification process, therefore post-equated solutions were not compared for these grade levels.

SCALE STABILITY AND MAINTENANCE

Scale stability is a critical component of any testing program. The 2014 Standards of Educational and Psychological Testing state that "Testing programs that attempt to maintain a common scale over time should conduct periodic checks of the stability of the scale on which the scores are reported" (p.103). Conducting item parameter checks, ensuring that item parameters do not drift over time, and potentially updating operational item parameters are a few ways in which testing programs can maintain scale stability. Although many of these aspects are checked during the pre-equating verification process, it is also important to analyze student performance and scale stability following each administration. Prior to 2021, operational item parameters were updated following each administration by calculating a mean shift constant based on a specified anchor set and transforming all operational item parameters back onto the base scale. In 2021, operational item parameters were not updated due to the expected impact from the Covid-19 pandemic, including but not limited to the disruption to teaching and learning, the lower participation in state-wide summative assessments, and the elongated testing windows.

Starting in 2022, operational item parameters were re-estimated and updated only if items showed misfit (mean-square infit values greater than 1.3), or items showed displacement (absolute displacement greater than 0.5). As previously discussed, item parameters were re-estimated during a partially-anchored concurrent calibration, where all other operational items were fixed to their previously banked values.

TEST CHARACTERISTIC CURVES AND LOGIT PLOTS

Figure 15–1 helps visualize the across-year differences in the difficulties of operational items. For each subject and grade level, two plots are presented: the test characteristic curves (TCCs) and the relationship between pre-equated and post-equated item difficulties. The plot on the left shows the prior and current TCCs and indicates alignment between the prior and current forms in terms of difficulty in the logit metric. TCCs that are closely aligned translate into similar raw-score cut points and similar test difficulty across years. The three dotted vertical lines represent the Basic, Proficient, and Advanced cut-scores on the logit (theta) scale. All subjects and grades showed very small year-to-year differences in TCCs from 2023 to 2024. The standard error of measurement (SEM) overlays the TCCs to show that the minimum SEM typically occurs close to the Proficient cut-score, which indicates that the Proficient cut-scores tend to be the most precise, as desired.

The right plot in Figure 15–1 displays the relationship between the pre-equated item difficulties (x-axis) and the post-equated item difficulties (y-axis) on the logit (theta) scale. The black line represents the identity line; if points fall on the identity line it indicates that there is no difference between the pre-equated and post-equated item difficulty. Points that do not fall on the identity line indicate items that were identified as misfitting during the pre-equating verification process and were freely estimated in a subsequent calibration. In most cases, the item difficulties that were freely estimated under the post-equated model were close to the identity line. The plots provide evidence of reasonable across-year stability of item difficulty, meaning the pre-equated item difficulties were similar to the post-equated item difficulties.

Figure 15–1. Test Characteristic Curves and Logit Plot

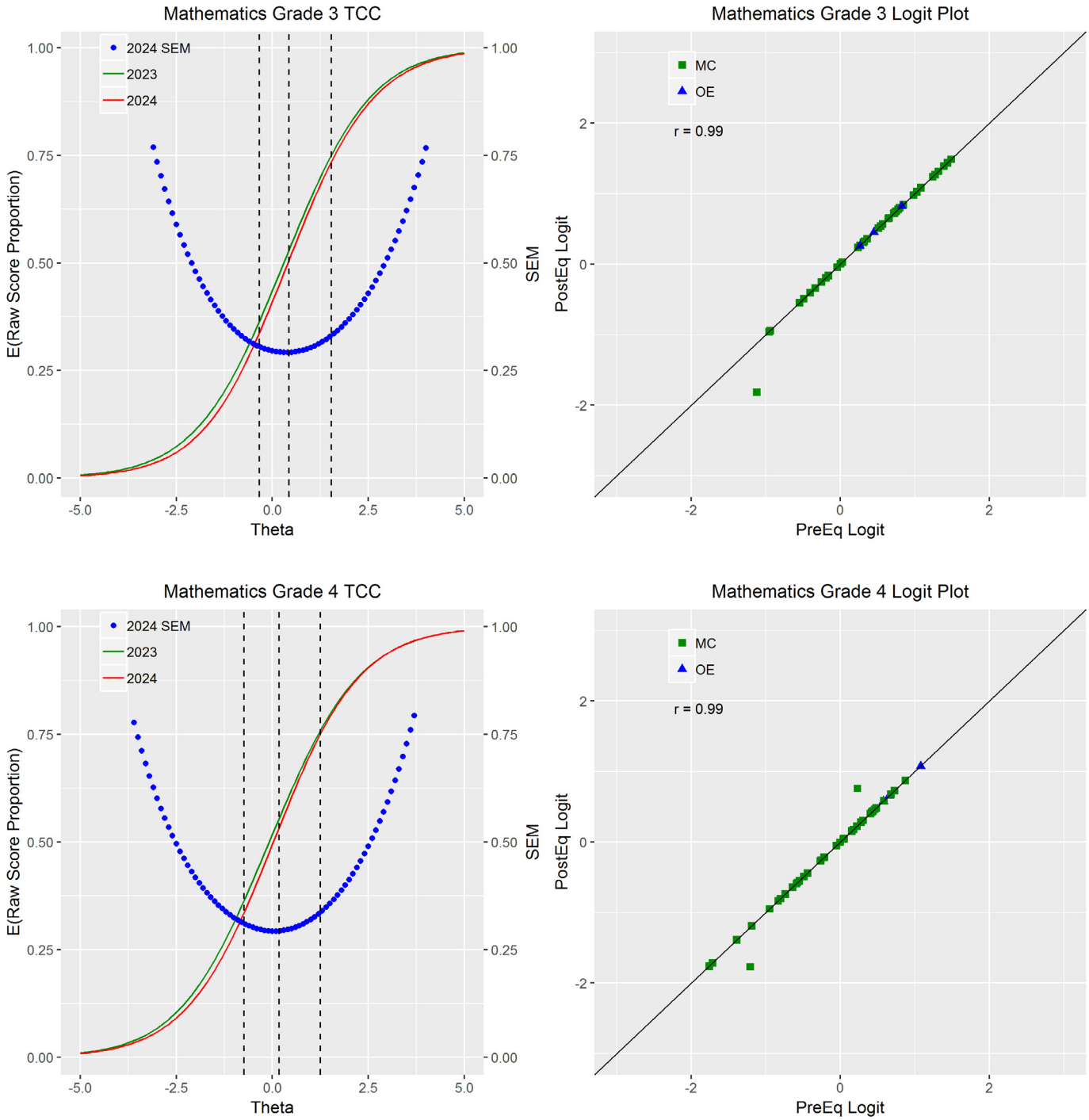


Figure 15–1 (continued). Test Characteristic Curves and Logit Plot

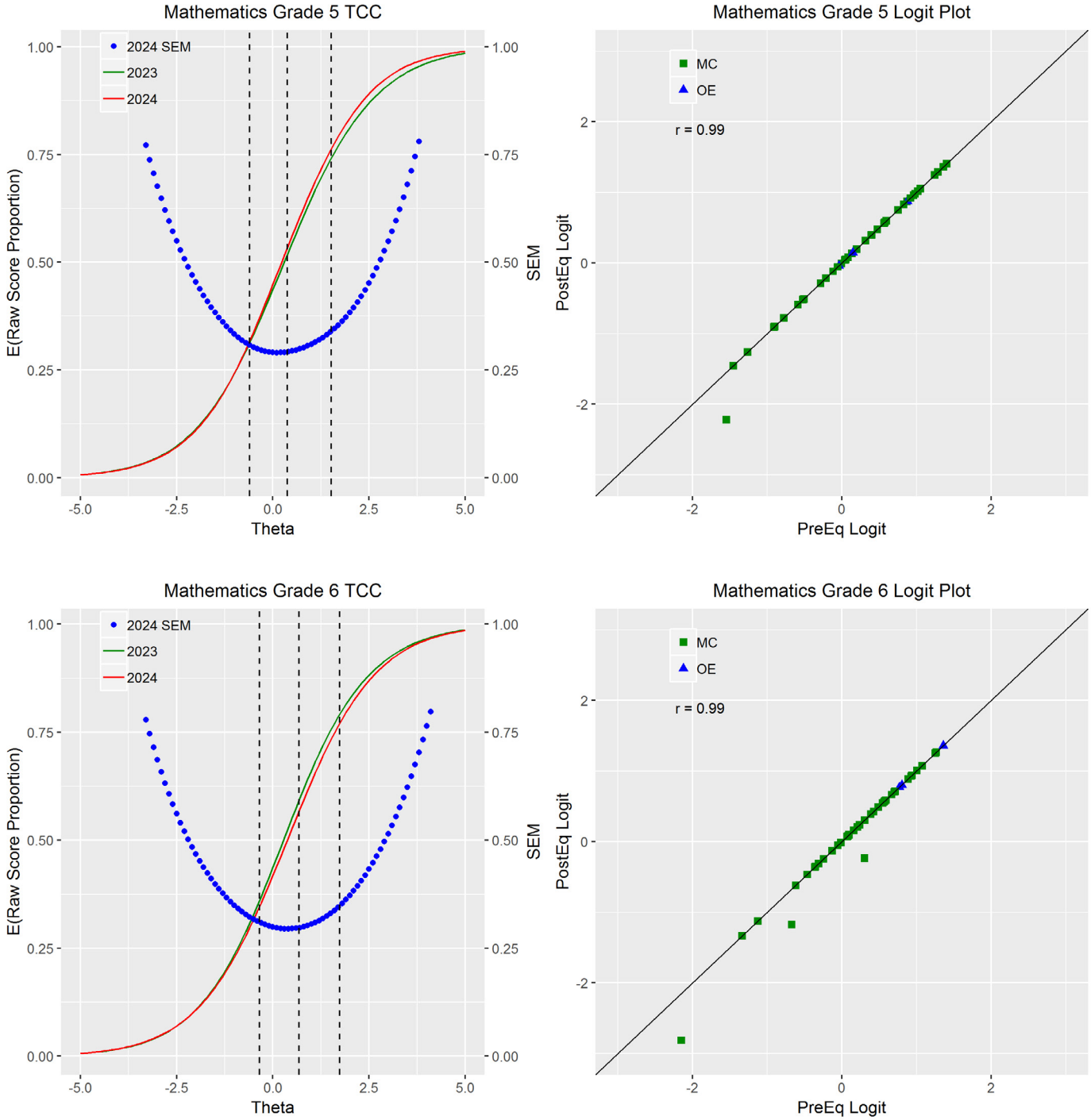


Figure 15–1 (continued). Test Characteristic Curves and Logit Plot

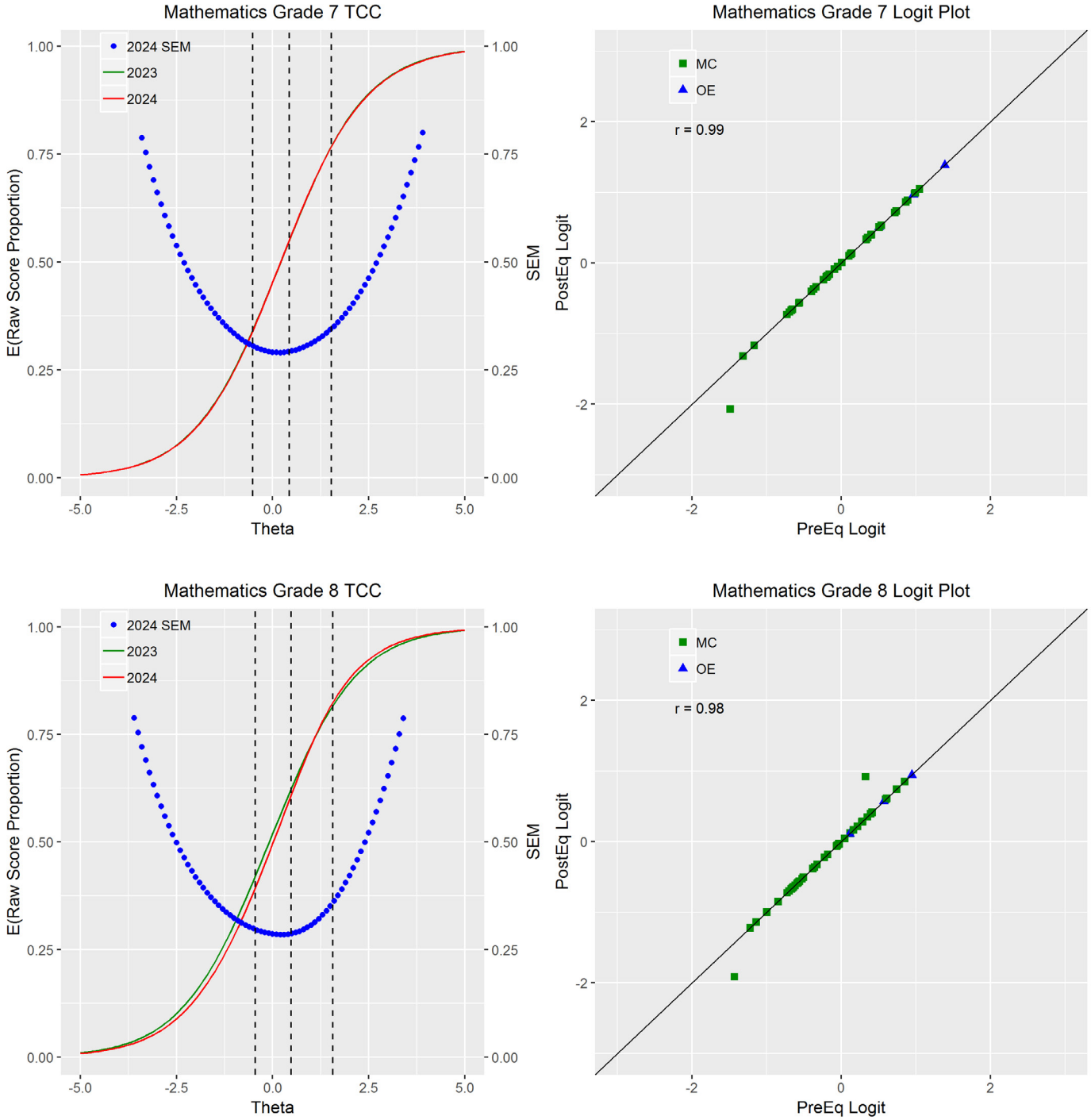


Figure 15–1 (continued). Test Characteristic Curves and Logit Plot

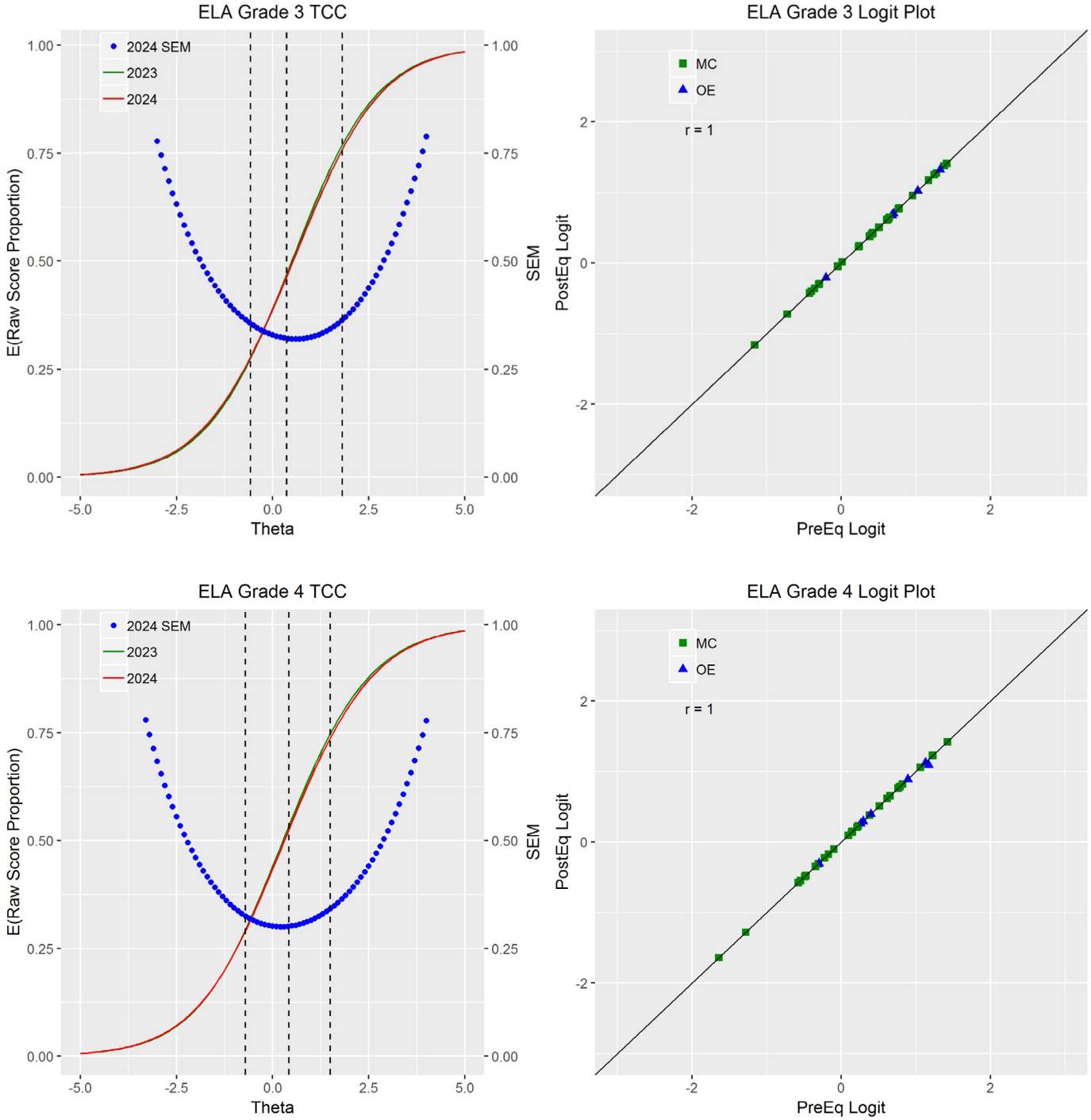


Figure 15–1 (continued). Test Characteristic Curves and Logit Plot

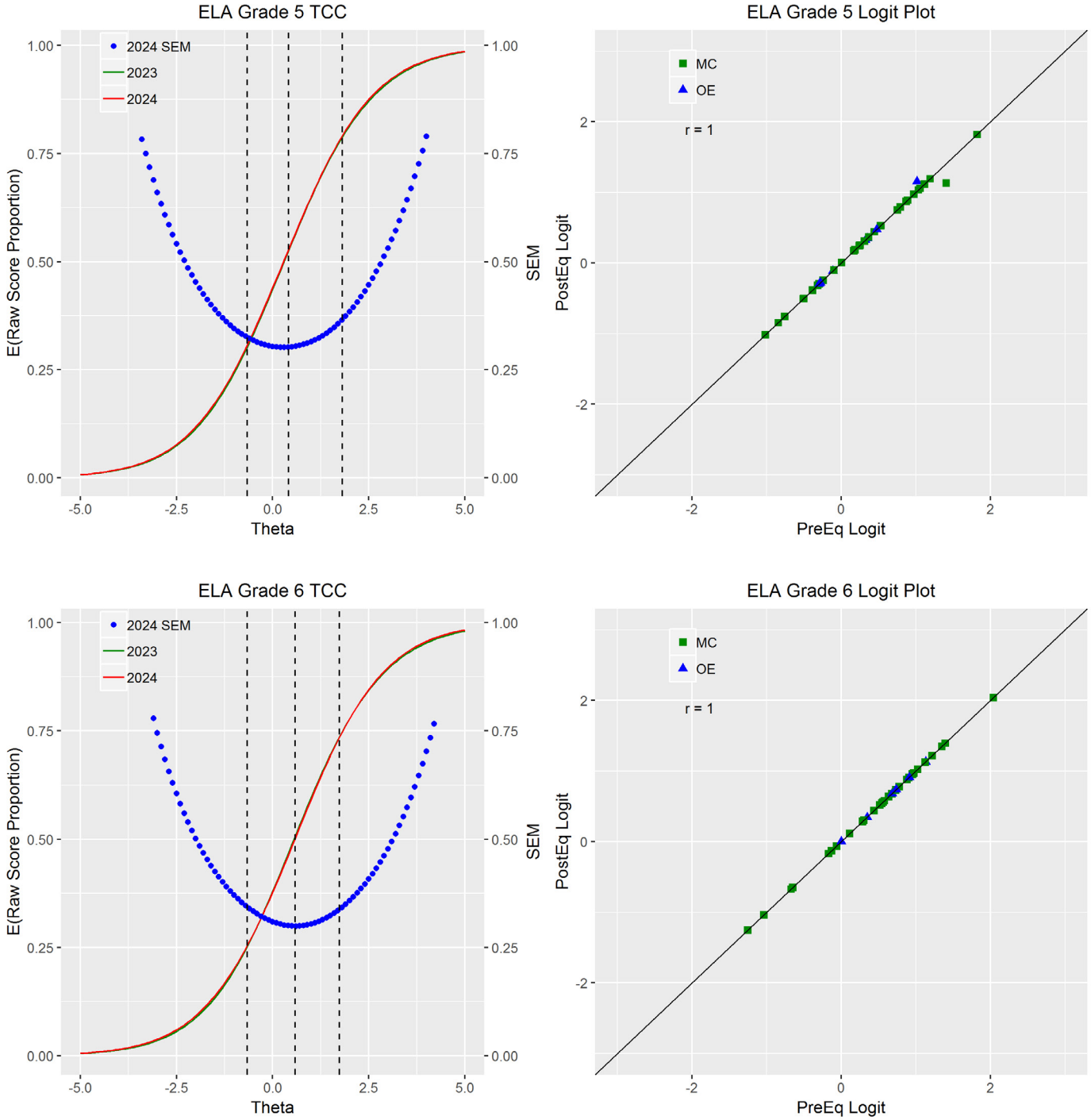


Figure 15–1 (continued). Test Characteristic Curves and Logit Plot

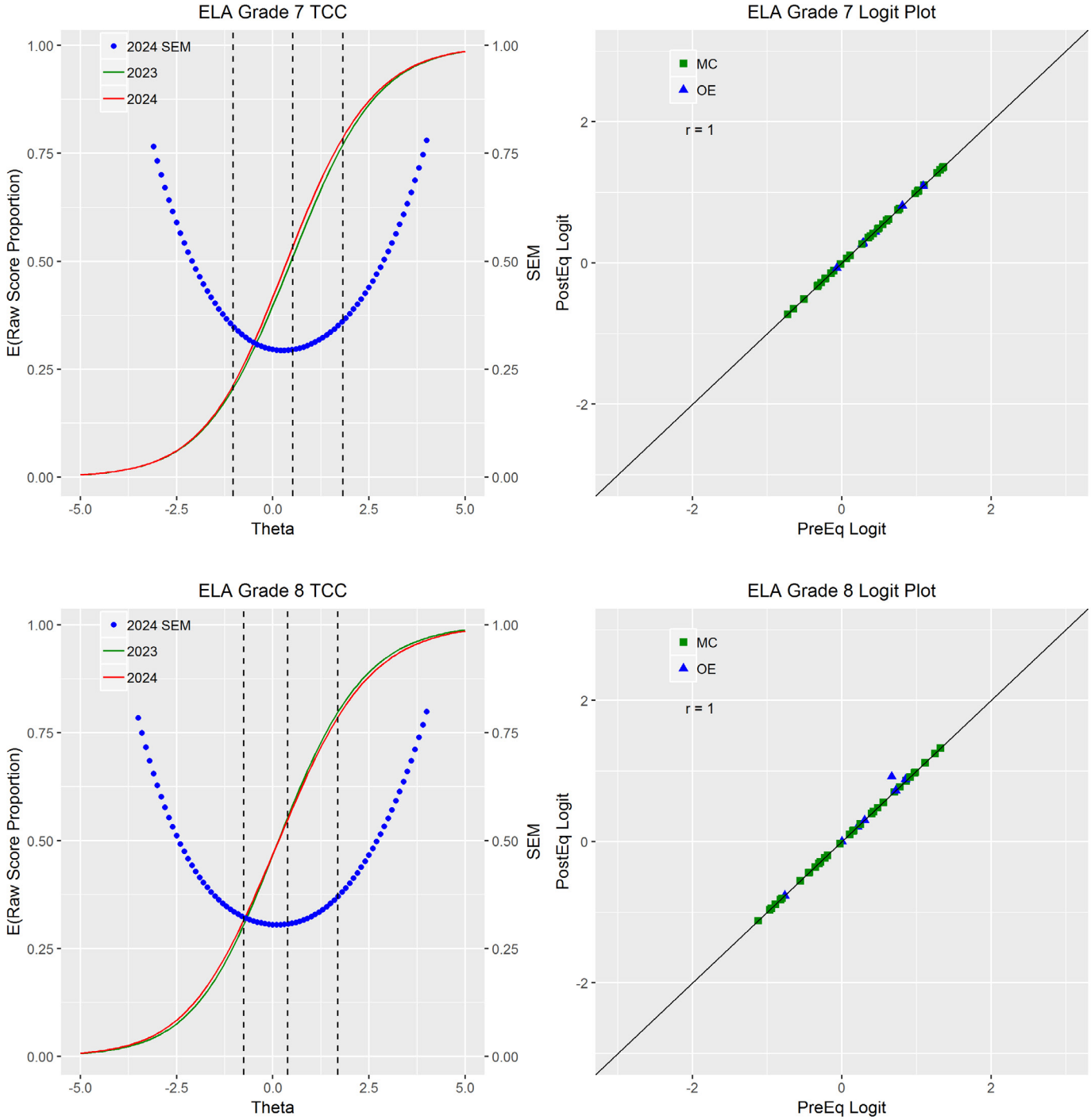
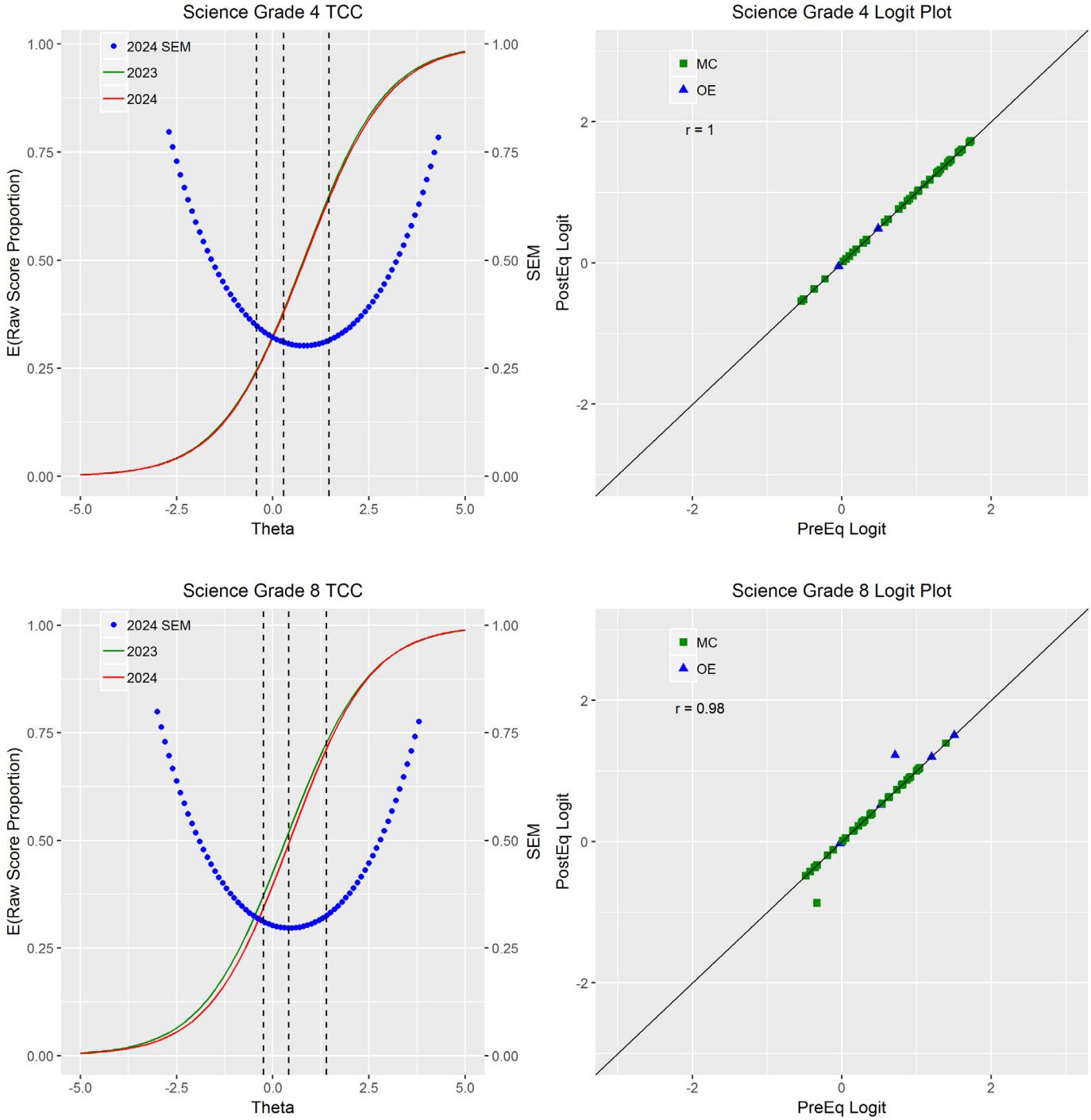


Figure 15–1 (continued). Test Characteristic Curves and Logit Plot



CHAPTER SIXTEEN: SCORES AND SCORE REPORTS

This chapter provides information about the scores provided for the PSSA (e.g., scaled scores, performance levels, and strand scores), how they are presented on score reports, and appropriate and inappropriate uses of the scores.

SCORING THE PSSA

The PSSA is composed of multiple-choice (MC) and open-ended (OE) items. Technology-enhanced (TE) items are included as field-test items and do not contribute to students' total score. Each correct response to a MC item receives a score of 1. Incorrect responses receive a score of 0. Scores on OE items range from zero to four, depending on the subject and grade. Table 16–1 summarizes the types of items used on each subject-area test. More detailed information about the various item types is provided in Chapter Two.

Table 16–1. Item Types Used by Subject Area

Item Type	Mathematics	ELA	Science
Multiple-Choice	1 point	1 point	1 point
Open-Ended	4 points	N/A	2 points
Short-Answer	N/A	3 points	N/A
Evidence-Based Selected-Response	N/A	2 or 3 points	N/A
Text-Dependent Analysis	N/A	4 points	N/A

Note. Text-dependent analysis items are weighted.

DESCRIPTION OF TOTAL TEST SCORES

Different types of scores have been developed for PSSA reporting. Since the underlying properties of these scores are not necessarily the same, the resulting scores depend on the purposes of the test. The following types of scores are included on score reports for each PSSA subject-area test:

- Raw scores
- Scaled scores
- Performance levels

RAW SCORES

A raw score is the number of points a student earned over the operational MC and OE items. By itself, the raw score has limited utility. One limitation is that it can only be interpreted with reference to the total number of items on a subject-area test (e.g., a raw score of 15 on a 20-item test is different than a raw score of 15 on a 30-item test). In addition, raw scores depend on the difficulty of test items across test forms (e.g., a raw score of 15 on a test with 20 easy items is different than a raw score of 15 on a test with 20 difficult items). Because the difficulty of the items on a test can change from year to year, raw scores should not be compared across tests or administrations.

SCALED SCORES

Scaled scores are introduced in Chapter Fourteen. In the simplest sense, a scaled score is a transformed number-correct score. The specifics of the transformation processes for the PSSA are also discussed in Chapter Fourteen. When all students take the same items, as with the operational items on the PSSA, the more points the student earns, the higher the associated scaled score will be. The value of using the methods described in Chapters Fourteen and Sixteen to produce a scaled score metric is that it produces more general, interpretable, and equitable results that can be compared across years. As noted above, a raw score of 30 is meaningless unless the maximum raw score is known. The difficulty of the test items was also mentioned as an additional challenge with interpreting raw scores. Number-correct scores are transformed to scaled scores to remove the effects of test length and item difficulty. Strictly speaking, transformation of number-correct scores to percent-correct scores would also remove the effect of test length, but it would do nothing to adjust for the difficulty of the items to support year-to-year equivalence of scores.

Another advantage of scaled scores is that they lend themselves to interpretations of what is referred to as an interval level, whereas raw scores do not. Interval-level scales allow an interpretation of a scaled score difference of 5 points to be the same whether the scores are 1095 vs. 1100 or 1245 vs. 1250. Raw score differences, in this context, cannot be interpreted in this manner and are thus neither generalizable nor equitable.

When test scores are properly equated across years, a scaled score of 1300—or any other value for a subject and grade, should have the same absolute meaning in the current year as it had in previous years. Meaning, if a student's scaled score on a specific subject and grade level increased across two years, then that student's performance improved;[1] it does not say anything about whether this year's test is easier or harder than last year's test. These interpretations require no information about the length or the difficulty of the test in either year, although these variables are essential for the process of deriving the scaled scores.

There is considerable auxiliary information presented in this report that might aid the reader in further contextualizing PSSA scaled scores. The reader is specifically referred to the following information:

- Chapter Fourteen provides information on the development of the PSSA scaled score system, including transformation formulas, rounding rules, and general scale characteristics (e.g., minimum values).
- Chapter Seventeen provides total test score statistics. In particular, Table 17–2 lists the scaled score means and standard deviations for this year's test results.

PERFORMANCE LEVELS

PSSA results are also reported using four Performance Levels: Below Basic, Basic, Proficient, and Advanced. The cut scores on the scaled score metric (i.e., the lowest possible scaled score to enter the Basic, Proficient, and Advanced levels) were presented earlier in this report. However, the information is repeated below (Table 16–2) for convenience.

[1] This example is not an endorsement of conducting a trend analysis with only two years of results. Further, small differences may not be statistically or practically significant.

Table 16–2. PSSA Scaled Score Cuts for Each Performance Level by Subject and Grade

Subject	Grade	Min	BB/B[1]	B/P[1]	P/A[1]	Max[2]
Mathematics	3	600	923	1000	1110	1544
Mathematics	4	600	908	1000	1107	1533
Mathematics	5	600	901	1000	1113	1519
Mathematics	6	600	897	1000	1105	1524
Mathematics	7	600	904	1000	1109	1535
Mathematics	8	600	906	1000	1108	1466
ELA	3	600	905	1000	1143	1541
ELA	4	600	887	1000	1107	1602
ELA	5	600	893	1000	1139	1603
ELA	6	600	875	1000	1115	1583
ELA	7	600	845	1000	1130	1589
ELA	8	600	886	1000	1130	1599
Science	4	1050	1150	1275	1483	2302
Science	8	925	1150	1275	1464	2265

Notes. 1. BB = Below Basic; B = Basic; P = Proficient; and A = Advanced.
2. Scaled Score Maximum Values are unique for each year's test.

Performance levels descriptors (PLDs) are another way to attach meaning to the scaled score metric. PLDs associate precise quantitative ranges of scaled scores with verbal, qualitative descriptions of student performance. While much less precise, the qualitative description of the levels is one way for parents and teachers to interpret the student scores. They are also useful in assessing the status of the school. The Pennsylvania General Performance Level Descriptors, as developed by PDE and teacher panels, are given below. These are also included on student score reports.

- Advanced: The Advanced Level reflects superior academic performance, and work at this level demonstrates a thorough command of, and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates advanced academic preparation for engaging successfully in further studies in this content area.
- Proficient: The Proficient Level reflects satisfactory academic performance, and work at this level demonstrates an adequate command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates academic preparation for engaging successfully in further studies in this content area.
- Basic: The Basic Level reflects marginal academic performance, and work at this level demonstrates a partial command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates additional academic support may be needed for engaging successfully in further studies in this content area.
- Below Basic: The Below Basic Level reflects inadequate academic performance, and work at this level demonstrates a minimal command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates extensive additional academic support may be needed for engaging successfully in further studies in this content area.

DESCRIPTION OF STRAND (REPORTING CATEGORY) SCORES

The following types of scores are provided for PSSA:

- Strand (Reporting Category) Scores
- Strength Profile

STRAND (REPORTING CATEGORY) SCORES

A strand (reporting category) score describes performance of a student, school, or district on a particular strand (content standard defined in the test). For the PSSA, strand scores are raw scores, indicating the points a student or a school/district earned for that strand. Attributes of raw scores are described earlier in this chapter and should be interpreted with caution. This is particularly true with respect to year-to-year comparisons where item difficulties may vary. Strand scores cannot be compared across years because they are not statistically linked nor are they interval scores. Also, it is not advisable to compare strand raw scores even within the same form because some strands may contain items that are easier or more difficult than other strands (the strength profile, discussed below, mitigates this problem to some degree). Another concern is the low reliability of many of these scores, especially for strand scores based on a small number of possible points. Chapter Eighteen provides more information about strand-score reliability.

When compared to other results from the same year, strand scores can be somewhat helpful in identifying a group's strengths and weaknesses as measured by the test. For example, it can be informative to compare average strand scores of a school against the scores of another reference group (e.g., the state average). Hence, strand scores can suggest group strengths and weaknesses relative to another reference group. (Challenges pertaining to interpreting results for individual students are discussed below.)

STRENGTH PROFILE

The strength profile provides another indication of a student's performance within each of the strands. This profile can be used to identify areas in which a student needs to improve and areas in which a student has performed more successfully. Unlike strand scores that are reported as raw scores, strength profile scores categorize students into one of three levels: Low, Medium, and High. These categories take into account the difficulty of the items and are based on the same scaling techniques used to derive the PSSA scaled scores (See Chapter Fourteen for a description of how strength profiles are produced). Scaled scores for reporting categories, however, are not included on score reports. High, medium, and low designations are provided as an indication of performance within a strand, but as standards have been set at the test level only, performance level descriptions for the overall test should not be used as validated descriptions of strand performance.

APPROPRIATE SCORE USES

INDIVIDUAL STUDENTS

Scaled scores on the PSSA indicate a student's achievement of the PSSA Assessment Anchors and Eligible Content. Scaled scores are primarily used to determine student performance level classifications (i.e., a criterion-referenced inference). Scaled scores that are based on Item Response Theory (IRT) models are typically assumed to be of the interval type; so, comparisons may be made on differences in scaled scores. If this assumption holds, then it would be safe to infer for Grade 4 ELA that the ability difference between 1110 and 1120 represents the same ability difference that separates 1250 and 1260. Scaled scores can also be used to compare the performance of an individual student to the performance of a similar demographic or subgroup at a school or district. However, when comparing performance of an individual student, test score standard errors (discussed in Chapter Eighteen) should be considered because scaled scores are estimate of students' achievement which comes with estimation error.

GROUPS OF STUDENTS

Test results can be used to evaluate performance over time. Mean scaled scores can be compared across administrations within the same subject and grade to indicate whether student performance is improving across years. Generally, such trend analyses benefit from using mean results from as many test administration years as possible. Different cohorts of students are used (i.e., the same student or students are not tracked across grade levels). All scores can be analyzed within the same subject and grade for any single administration to determine which demographic or program group had, for example, the highest average performance or the highest percentage of students at or above the Proficient standard.

Strand scores can help evaluate academic areas for relative strengths or weaknesses. These category scores provide information to identify areas where further diagnosis is warranted. Generalizations from test results may be made to the specific content domain represented by the academic standards measured in the PSSA. However, all instruction and program evaluations should include as much information from other sources as possible to provide a more complete picture of student performance.

CAUTIONS FOR SCORE USES

EXTREME ERROR FOR EXTREME SCORES

Student scores toward the minimum or maximum ends of the score range have very large standard errors of measurement and, therefore, such scores should be viewed very cautiously. The maximum scaled score only provides a very rough estimate of a student's ability. For instance, if a student achieved the maximum score for ELA grade 6, it could not be determined whether the student could have achieved an even higher scaled score. If the test were 10 items longer, a different estimate might have been obtained. Similarly, if the items in a new test were more difficult than the items on a previous administration, the maximum scaled score would likely be higher on the new test because it would take a greater level of achievement to answer the items correctly. In this manner, extreme scaled scores may vary from one administration to the next even if the number of test items does not change. The fluctuation of extreme scaled scores complicates the comparisons of students with scaled scores at the extreme ends of the score distribution. To minimize confusion and potential misinterpretation, the minimum scaled scores possible on the PSSA tests have been fixed (see Table 16–2) so they do not change between administrations. However, the maximum scaled score values have not been fixed. Therefore, caution must be taken when comparing scores at the maximum end of the scale.

EACH TEST HAS A UNIQUE SCALE

Scaling was conducted for each subject and grade level separately. Therefore, PSSA scaled scores should be interpreted only within each respective subject and grade. PSSA scaled scores are not status indicators in the same sense as percentile ranks (or scales that are essentially transformations of percentile ranks) and, therefore, cannot be used to profile relative strengths and weaknesses across subject areas. As an example, scaled scores of 1250 in Grade 4 ELA and 1200 in Grade 4 mathematics do not necessarily imply that the student performed better in ELA than in mathematics. Neither do the PSSA scaled scores represent a developmental or vertical scale. This means that, although the content is aligned across grades to reflect the grade-to-grade articulations in the Pennsylvania Standards, across-grade statistical comparisons or growth statements for a student are not appropriate. For example, a 1200 in Grade 4 ELA and a 1200 in Grade 5 ELA does not mean a student had no achievement growth in ELA from Grade 4 to Grade 5.

STRENGTH PROFILE CAVEATS

The category labels of Low, Medium, and High are deliberately used instead of the PSSA performance level names—Below Basic, Basic, Proficient, and Advanced—to acknowledge that the PSSA cut scores were established based on the total test score and standards were set on this total test score. Therefore, the categories should not be interpreted in the same way as PSSA performance levels because they likely do not carry the same meaning.

While the strength profile might facilitate comparisons of a student's strengths and weaknesses across strands in some cases, several factors merit caution. As noted earlier, strand scores are often not as reliable as scores on the full-length test. The scaling underlying the strength profile does not mitigate this problem.

Additionally, the categories reflect more absolute comparisons. Relative comparisons are more difficult to make. As an example, if one scored High in both strand A and B, we know the student did very well in both strands compared to overall performance in the state (i.e., absolute status). However, we do not know whether the student's performance in strand A was better or worse relative to the performance in strand B (relative status).

Finally, some seemingly unusual results might occur that may be difficult for users to understand. As one example, it may be possible for a student to earn Medium in all strands but have an Advanced performance level. This can happen because the strand scores are correlated, meaning the distributional properties of the total score depends not only on the variances of the strand scores, but also on the covariances among the strand scores. (An analogy would be when a school track team places first overall in a competition although they did not win a single event.)

USING PSSA RESULTS FOR OTHER PURPOSES

Scaled scores and performance level classifications are used primarily to measure how well students acquire the knowledge and skills described in the *Pennsylvania Assessment Anchor Content Standards* (Assessment Anchors) as defined by the Eligible Content for mathematics, ELA, and Science. They are also used to provide information on school and district accountability. These same results, plus strand scores and strength profiles are also appropriate for use in improving curricular and instructional practices. Evidence supporting the validity of such interpretations is framed in Chapter Nineteen and provided throughout this technical report.

Other uses or inferences based on PSSA results may or may not be valid as the validity evidence and arguments provided in Chapter Nineteen may not necessarily support other score uses and interpretations. According to the AERA/APA/NCME *Standards* (2014) (i.e., Standard 1.4), if a test is used in a way that has not been validated, it is incumbent on the user to justify the new use, collecting new evidence if necessary. Finally, a universal caveat for any test's result is that it not be used for placement and educational planning alone. Instead, other information about the student (e.g., other test performance data) should be considered.

REPORTS

The following score reports are provided to students, parents, schools, and districts for the PSSA tests in mathematics, ELA, and science:

- Individual Student Report
- School Summary Report
- District Summary Report
- Interpretive Guide

PARENT LETTER

Parent letters were delivered to Pennsylvania districts when student performance files were posted for all test-takers. This score report provided parents and students with their first glimpse of performance on the PSSA tests. This report provides results at the student level. A sample of the report is provided in Figure 16–1.

Figure 16–1. Parent Letter

Pennsylvania System of School Assessment (PSSA) — **Parent Letter**

Test Date:
Student Name:
PA Student ID:
Grade:
School:
District:

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ENGLISH LANGUAGE ARTS

How did perform overall?

Performance Level: Proficient — **Score:** 1016

Below Basic | Basic | Proficient | Advanced

600 | 886 | 1000 ↑ | 1130 | 1640

Student's test scale score is indicated by the ↑. If this student were to test again under similar circumstances, his or her score would likely remain in the following range: **989-1043**.

Score Reporting Category	Student's Points	Total Points Possible
Reading**		
Key Ideas and Details	8	12
Craft and Structure/Integration of Knowledge and Ideas	11	16
Vocabulary Acquisition and Use	8	10
Writing		
Conventions of Standard English	4	9
Reading/Writing		
Text-Dependent Analysis	4	16

** **Each reading question connects to a Reading reporting category in the table above as well as to a Text Type reporting category in the table below. However, each reading question counts only one time in the student's score.**

Score Reporting Category	Student's Points	Total Points Possible
Text Types		
Literature Text	13	19
Informational Text	14	19

Note that the performance level line graphs are not drawn to scale because some performance levels have more scaled score points than others. Additionally, the graphs do not display the actual percentage of students in each performance level.

MATHEMATICS

How did perform overall?

Performance Level: Basic — **Score:** 990

Below Basic | Basic | Proficient | Advanced

600 | 906 | 1000 ↑ | 1108 | 1638

Student's test scale score is indicated by the ↑. If this student were to test again under similar circumstances, his or her score would likely remain in the following range: **960-1020**.

Score Reporting Category	Student's Points	Total Points Possible
The Number System	5	7
Expressions and Equations	11	17
Functions	7	11
Geometry	5	9
Statistics and Probability	4	8

SCIENCE

How did perform overall?

Performance Level: Advanced — **Score:** 1532

Below Basic | Basic | Proficient | Advanced

925 | 1150 | 1275 | 1464 ↑ | 2337

Student's test scale score is indicated by the ↑. If this student were to test again under similar circumstances, his or her score would likely remain in the following range: **1466-1598**.

Score Reporting Category	Student's Points	Total Points Possible
The Nature of Science	18	23
Biological Sciences	4	9
Physical Sciences	8	8
Earth and Space Sciences	6	8

INDIVIDUAL STUDENT REPORT

An individual student report is provided for all students who took the PSSA. Two copies of the individual student report were sent to each school district and charter school for distribution to parents, teachers, guidance counselors, and/or principals. This report is a four-page color document that provides the types of scores explained earlier in this chapter. Appendix R contains detailed information about the development of the Individual Student Reports. Screen shots of the four pages from a sample individual student report are provided in Figures 16–2A to 16–2D.

Figure 16–2A. Page 1 of the Individual Student Report

PENNSYLVANIA
System of School Assessment (PSSA)

Student Report

Student Name:
PA Student ID:
School:
District:
Test Date:
Grade:

Student's Results				
Performance Level				
			Goal Range*	
	Below Basic	Basic	Proficient	Advanced
English Language Arts			✓	
Mathematics	✓			
Science				✓

*Goal Range: The goal is for all students in the Commonwealth of Pennsylvania to score proficient or above.

What Is the Pennsylvania System of School Assessment (PSSA)?

- The PSSA is an assessment system used to measure a student's progression toward mastery of the
  - Pennsylvania Core Standards in English Language Arts and Mathematics
  - Pennsylvania Academic Content Standards in Science
- For additional information, visit the Pennsylvania Department of Education's website at www.education.pa.gov

What Is Included in This report?

- This report provides information about the student's recent performances on the
  - English Language Arts, Mathematics, and Science PSSA assessments
- It is not intended to summarize all aspects of student learning.

For Additional Information

- For more information about a student's performance, consult the school or the classroom teacher.
- A Report Interpretation Guide is available at www.education.pa.gov. Type "student report guide" in the search field or consult the local school district or school.

Performance Levels

The Below Basic Level reflects inadequate academic performance, and work at this level demonstrates a minimal command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates extensive additional academic support may be needed for engaging successfully in further studies in this content area.

The Basic Level reflects marginal academic performance, and work at this level demonstrates a partial command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates additional academic support may be needed for engaging successfully in further studies in this content area.

The Proficient Level reflects satisfactory academic performance, and work at this level demonstrates an adequate command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates academic preparation for engaging successfully in further studies in this content area.

The Advanced Level reflects superior academic performance, and work at this level demonstrates a thorough command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates advanced academic preparation for engaging successfully in further studies in this content area.

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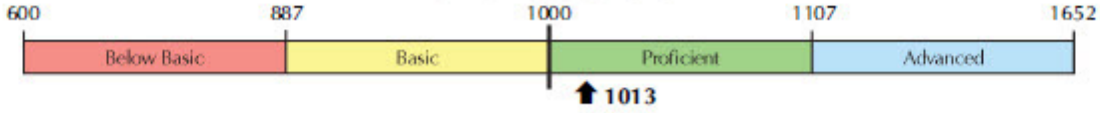
Figure 16–2B. Page 2 of the Individual Student Report

English Language Arts

Performance Level



Student's test scale score is indicated by the (⬆). If this student were to test again under similar circumstances, his or her score would likely remain in the following range: **985-1041**

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile*
Reading**			
Key Ideas and Details	**11**	16	**Medium**
Craft and Structure/Integration of Knowledge and Ideas	**7**	13	**Low**
Vocabulary Acquisition and Use	**7**	9	**Medium**
Writing			
Conventions of Standard English (Writing)	**4**	9	**Low**
Text-Dependent Analysis			
Text-Dependent Analysis (Reading/Writing)	**4**	16	**Low**

**Each reading question connects to a Reading reporting category in the table above as well as to a Text Type reporting category in the table below. However, each reading question counts only one time in the student's score.

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile*
Text Types			
Literature Text	**12**	17	**Medium**
Informational Text	**13**	21	**Medium**

To learn more about the Score Reporting Categories, see page 4.

*The Strength Profile (Low, Medium, High): The strength profile provides an indication of this student's performance within each of the reporting categories. The Strength Profile takes into account the difficulty of the assessment questions and can be used to help identify the student's strengths and/or areas of need.

Figure 16–2C. Page 3 of the Individual Student Report

Mathematics

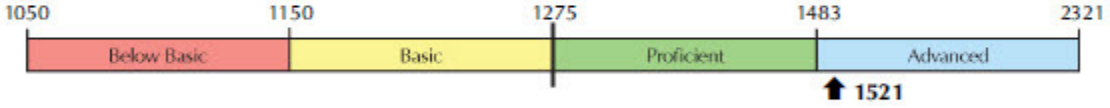
Performance Level

Student's test scale score is indicated by the (⬆). If this student were to test again under similar circumstances, his or her score would likely remain in the following range: **876-936**

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile*
Numbers and Operations in Base Ten	1	10	Low
Numbers and Operations—Fractions	4	11	Low
Operations and Algebraic Thinking	6	13	Low
Geometry	3	8	Low
Measurement and Data	3	10	Low

Science

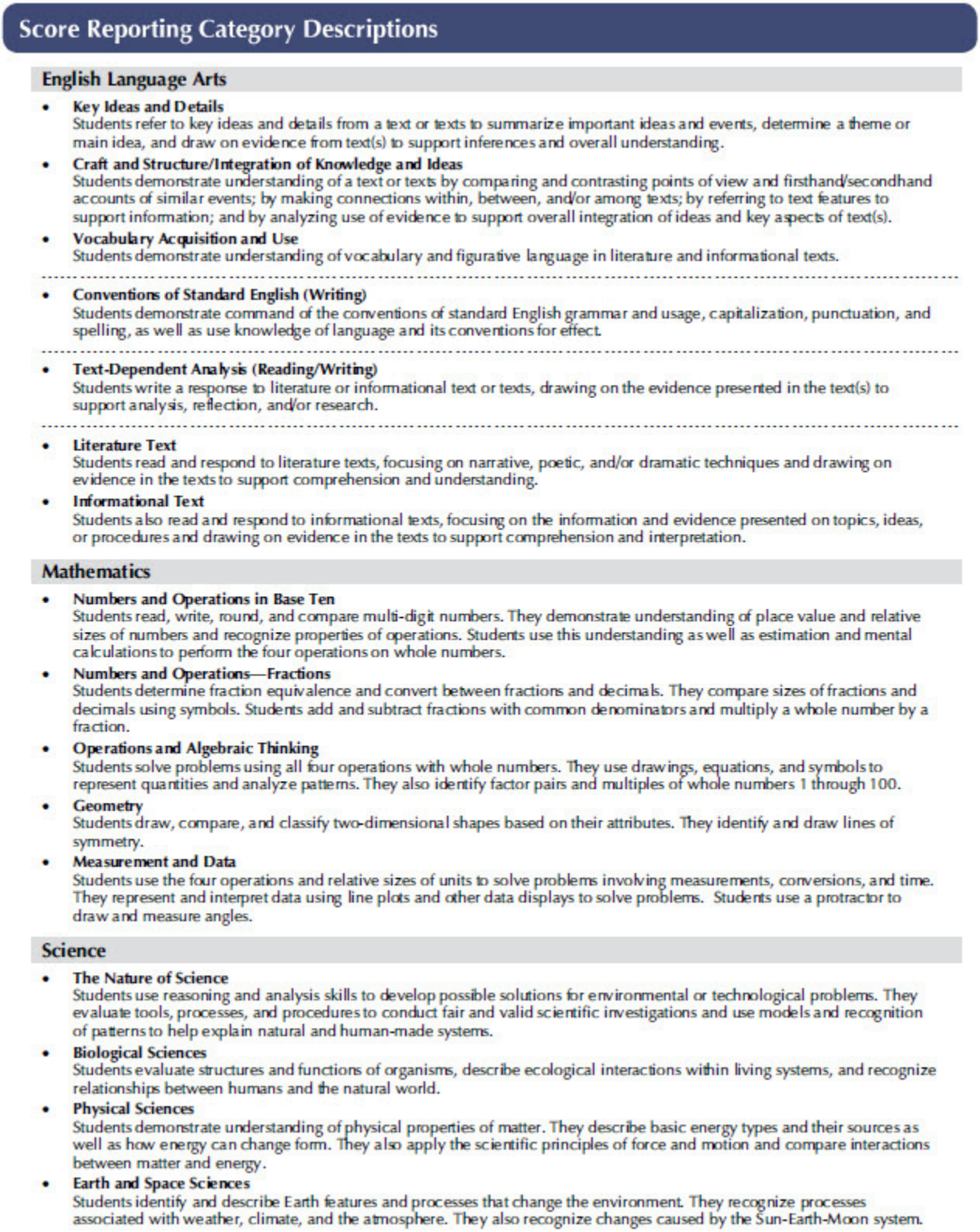
Performance Level



Student's test scale score is indicated by the (⬆). If this student were to test again under similar circumstances, his or her score would likely remain in the following range: **1465-1577**

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile*
The Nature of Science	14	24	Medium
Biological Sciences	6	8	High
Physical Sciences	8	8	High
Earth and Space Sciences	4	8	High

Figure 16–2D. Page 4 of the Individual Student Report



Score Reporting Category Descriptions

English Language Arts

- **Key Ideas and Details**
  Students refer to key ideas and details from a text or texts to summarize important ideas and events, determine a theme or main idea, and draw on evidence from text(s) to support inferences and overall understanding.
- **Craft and Structure/Integration of Knowledge and Ideas**
  Students demonstrate understanding of a text or texts by comparing and contrasting points of view and firsthand/secondhand accounts of similar events; by making connections within, between, and/or among texts; by referring to text features to support information; and by analyzing use of evidence to support overall integration of ideas and key aspects of text(s).
- **Vocabulary Acquisition and Use**
  Students demonstrate understanding of vocabulary and figurative language in literature and informational texts.

- **Conventions of Standard English (Writing)**
  Students demonstrate command of the conventions of standard English grammar and usage, capitalization, punctuation, and spelling, as well as use knowledge of language and its conventions for effect.

- **Text-Dependent Analysis (Reading/Writing)**
  Students write a response to literature or informational text or texts, drawing on the evidence presented in the text(s) to support analysis, reflection, and/or research.

- **Literature Text**
  Students read and respond to literature texts, focusing on narrative, poetic, and/or dramatic techniques and drawing on evidence in the texts to support comprehension and understanding.
- **Informational Text**
  Students also read and respond to informational texts, focusing on the information and evidence presented on topics, ideas, or procedures and drawing on evidence in the texts to support comprehension and interpretation.

Mathematics

- **Numbers and Operations in Base Ten**
  Students read, write, round, and compare multi-digit numbers. They demonstrate understanding of place value and relative sizes of numbers and recognize properties of operations. Students use this understanding as well as estimation and mental calculations to perform the four operations on whole numbers.
- **Numbers and Operations—Fractions**
  Students determine fraction equivalence and convert between fractions and decimals. They compare sizes of fractions and decimals using symbols. Students add and subtract fractions with common denominators and multiply a whole number by a fraction.
- **Operations and Algebraic Thinking**
  Students solve problems using all four operations with whole numbers. They use drawings, equations, and symbols to represent quantities and analyze patterns. They also identify factor pairs and multiples of whole numbers 1 through 100.
- **Geometry**
  Students draw, compare, and classify two-dimensional shapes based on their attributes. They identify and draw lines of symmetry.
- **Measurement and Data**
  Students use the four operations and relative sizes of units to solve problems involving measurements, conversions, and time. They represent and interpret data using line plots and other data displays to solve problems. Students use a protractor to draw and measure angles.

Science

- **The Nature of Science**
  Students use reasoning and analysis skills to develop possible solutions for environmental or technological problems. They evaluate tools, processes, and procedures to conduct fair and valid scientific investigations and use models and recognition of patterns to help explain natural and human-made systems.
- **Biological Sciences**
  Students evaluate structures and functions of organisms, describe ecological interactions within living systems, and recognize relationships between humans and the natural world.
- **Physical Sciences**
  Students demonstrate understanding of physical properties of matter. They describe basic energy types and their sources as well as how energy can change form. They also apply the scientific principles of force and motion and compare interactions between matter and energy.
- **Earth and Space Sciences**
  Students identify and describe Earth features and processes that change the environment. They recognize processes associated with weather, climate, and the atmosphere. They also recognize changes caused by the Sun-Earth-Moon system.

SCHOOL AND DISTRICT SUMMARY REPORTS

Summary reports are provided at the school and district level. These reports contain summary information about the percentage of students in each of the four performance levels. Raw scores are also provided by assessment anchor to allow schools or districts to identify strengths or weaknesses at the content strand level. Districts are able to access this summary data within the *Data Interaction*™ tool.

INTERPRETATIVE GUIDE

An interpretative guide is provided to help parents and other PSSA stakeholders better understand test result information presented in the individual student report. The interpretative guide can be found on the PDE website.

CHAPTER SEVENTEEN: OPERATIONAL TEST STATISTICS

This chapter presents various summary statistics for the PSSA total test scores based on the final data file described in Chapter Nine. Related information covered elsewhere in this report includes the item-level statistics presented in Chapter Eleven (classical item statistics) and Chapter Twelve (Rasch item statistics). These chapters provide additional consideration as item difficulty distributions can affect total score distributions.

PERFORMANCE LEVEL STATISTICS

Table 17–1 presents performance level percentages by grade and content. Appendix Q provides historical statistics including performance level percentages for prior years.

Table 17–1. Performance Level Percentages for 2024 PSSA

Subject	Grade	Below Basic (%)	Basic (%)	Proficient (%)	Advanced (%)
Mathematics	3	26.11	22.40	30.86	20.63
Mathematics	4	24.86	26.46	27.39	21.30
Mathematics	5	25.30	31.89	27.93	14.88
Mathematics	6	31.70	30.89	22.66	14.75
Mathematics	7	37.79	28.14	21.59	12.47
Mathematics	8	45.34	26.09	18.80	9.78
ELA	3	16.05	28.03	46.77	9.14
ELA	4	16.01	32.46	34.63	16.90
ELA	5	16.61	31.11	42.03	10.25
ELA	6	8.57	38.35	39.21	13.88
ELA	7	4.67	41.78	38.02	15.54
ELA	8	14.70	32.93	40.59	11.77
Science	4	6.15	16.67	40.32	36.86
Science	8	25.88	19.52	32.34	22.26

SCALED SCORES

SUMMARY STATISTICS

Table 17–2 provides the scaled score means and standard deviations. See the section Every Test has a Unique Scale in Chapter Sixteen for caveats regarding interpretation of scale scores.

Table 17–2. Means and Standard Deviations for the 2024 PSSA Scaled Scores

Subject	Grade	Mean Scaled Score	SD Scaled Score
Mathematics	3	1011.05	120.35
Mathematics	4	1002.94	120.68
Mathematics	5	988.65	118.67
Mathematics	6	970.91	126.38
Mathematics	7	957.98	119.85
Mathematics	8	940.52	117.70
ELA	3	1012.03	101.07
ELA	4	1003.23	108.17
ELA	5	1001.91	109.97
ELA	6	1009.21	100.04
ELA	7	1011.97	110.18
ELA	8	1004.75	109.41
Science	4	1417.56	174.00
Science	8	1306.67	204.77

SCALED-SCORE DISTRIBUTIONS

Scaled scores are based on a linear transformation of the Rasch ability estimates. Distributions of the Rasch abilities are provided at the end of Chapter Twelve.

RAW SCORES

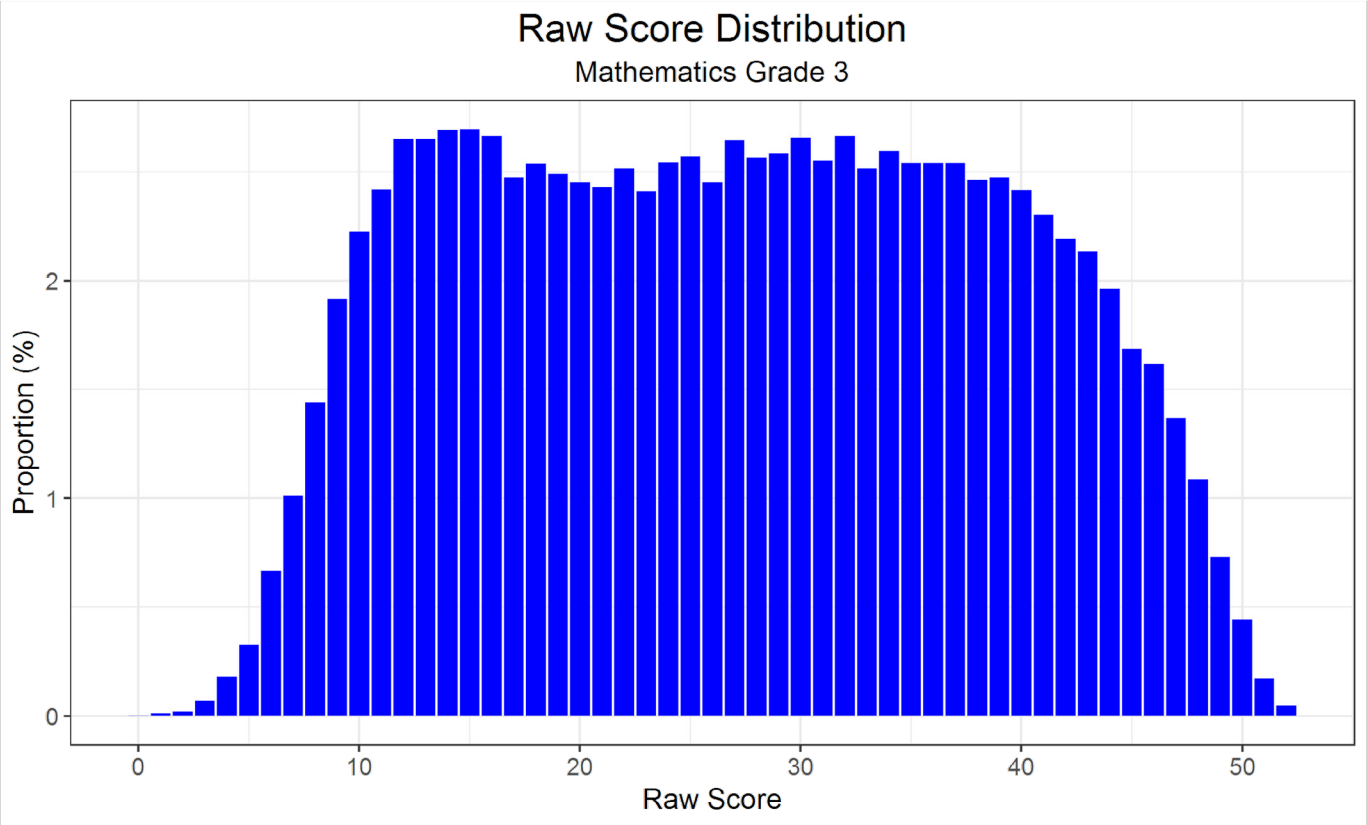
SUMMARY STATISTICS

Appendix P provides reliabilities and summary statistics for the operational raw scores. The statistics reported include the number of points possible (Total Points), number of items (N Items), number of students tested (N), mean number of score points received (Mean), standard deviation of test scores (SD), reliability (r), traditional standard error of measurement (SEM), and item types (Item Type(s)) used to determine each score. These statistics are based on the total test using both MC and OE items for the operational sections of each form. For each subject and grade level, tables present reliabilities disaggregated by gender, Ethnicity, whether students had an individualized educational plan (IEP), whether students were considered an English Learner (EL), and whether students had a low-income background (Low Income). For information disaggregated by item type, Chapter Eleven provides breakout statistics for MC and OE items.

SCORE DISTRIBUTIONS

Figure 17–1 displays the raw score relative-frequency distributions as the proportion of students earning each raw score point.

Figure 17–1. 2024 PSSA Raw Score Distributions



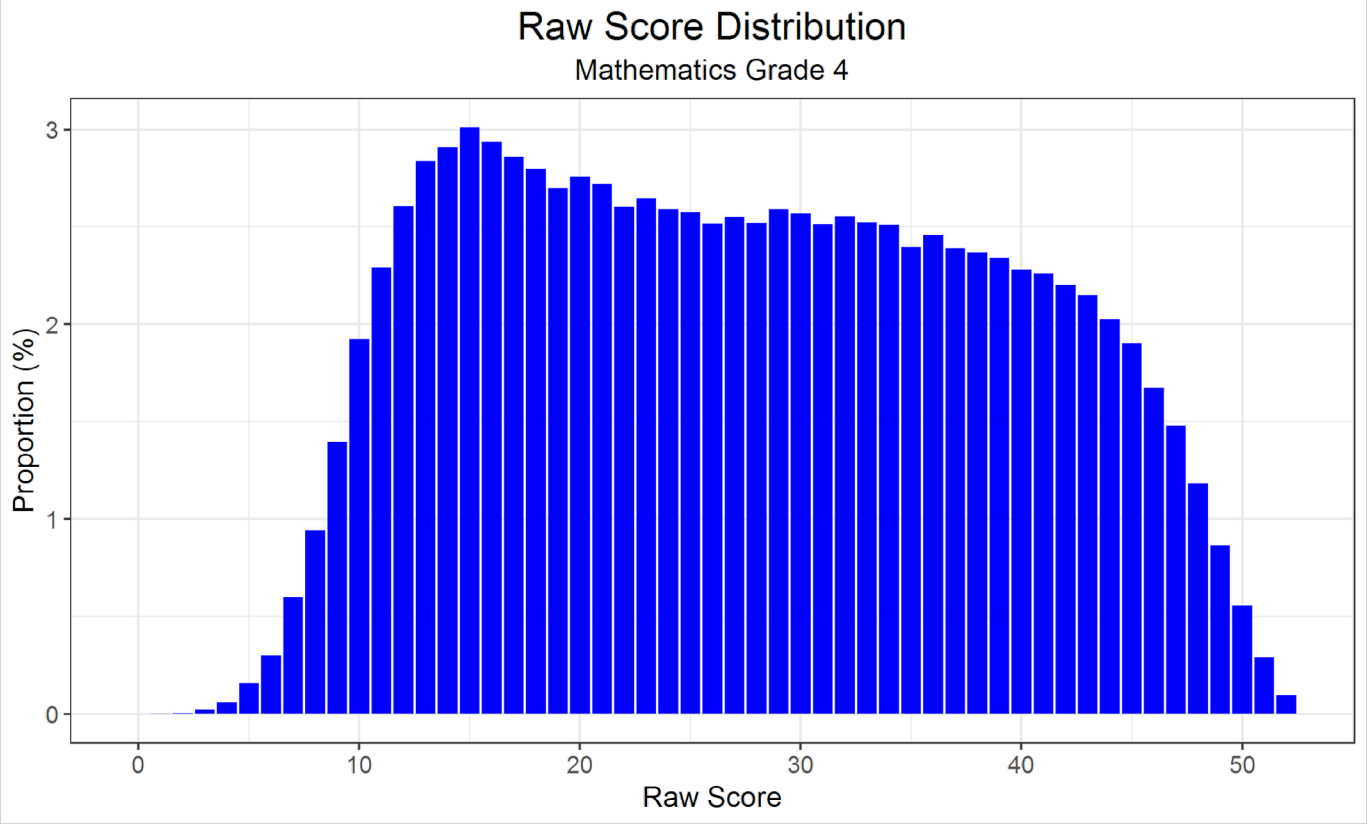
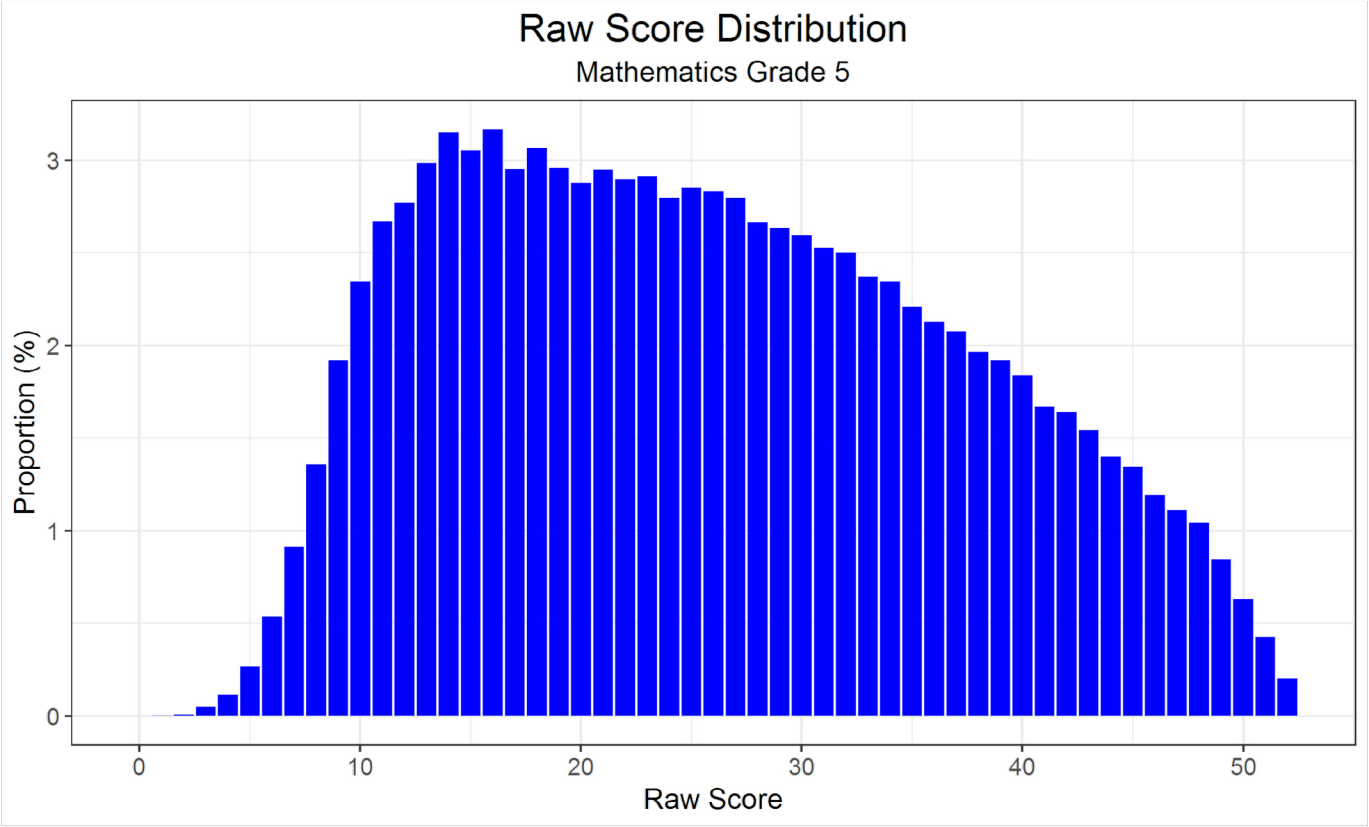


Figure 17–1 (continued). 2024 PSSA Raw Score Distributions



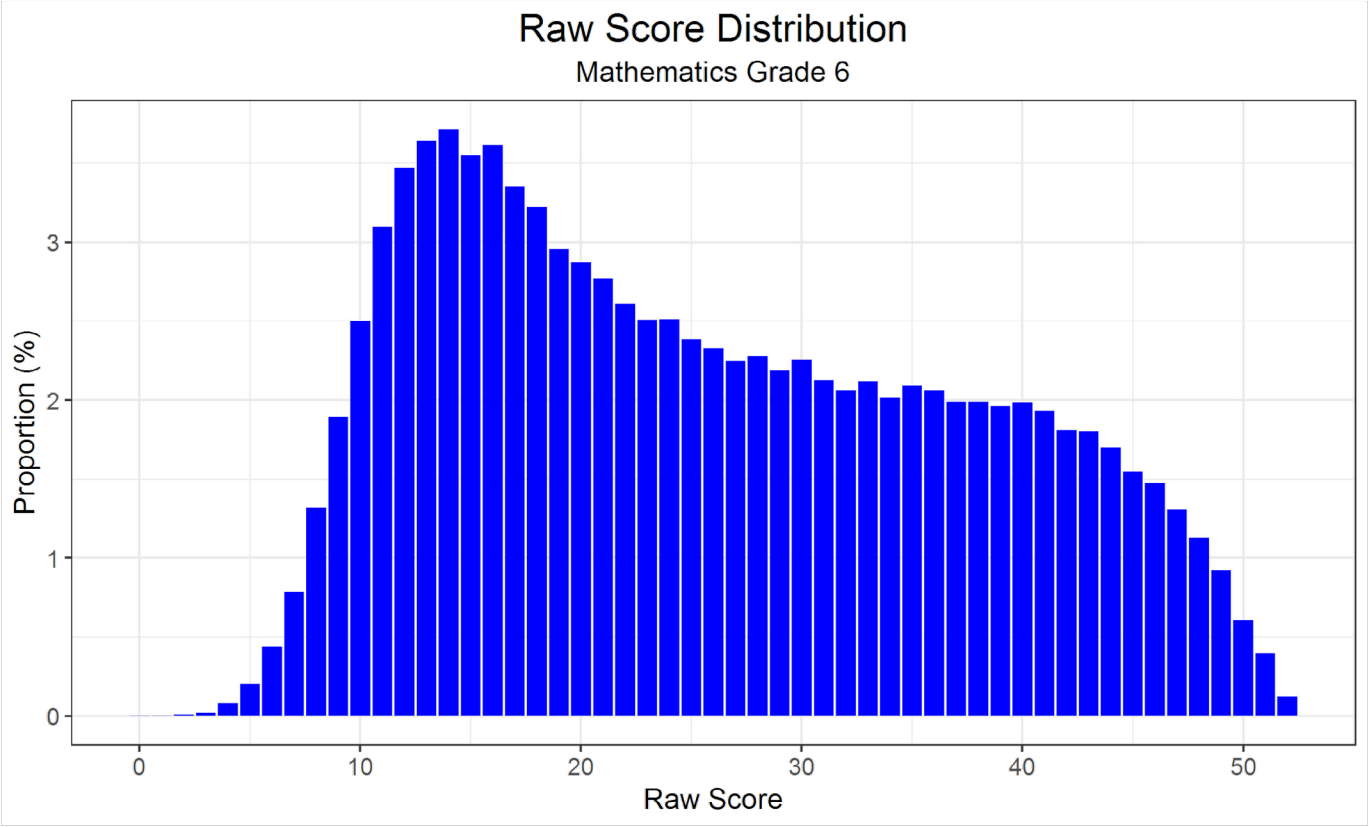
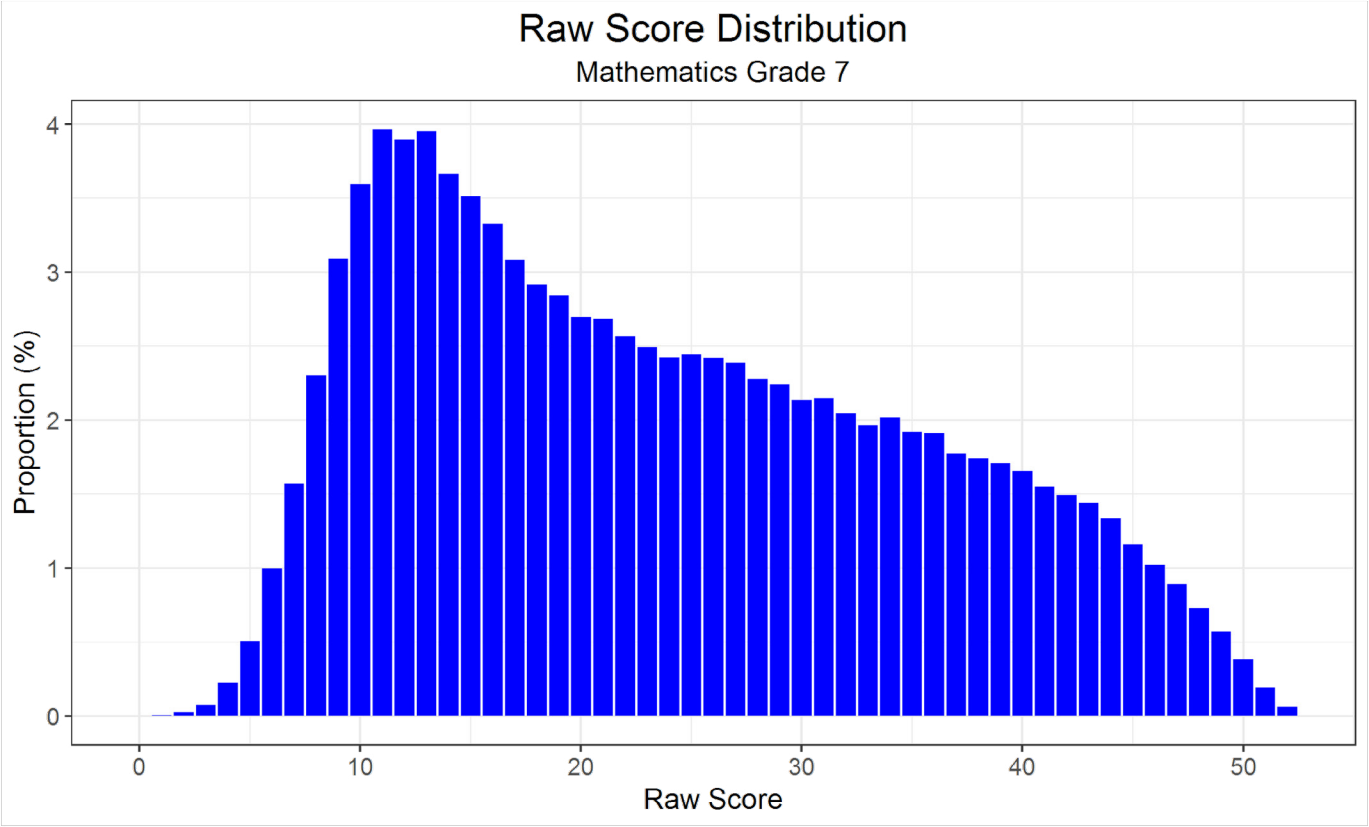


Figure 17–1 (continued). 2024 PSSA Raw Score Distributions



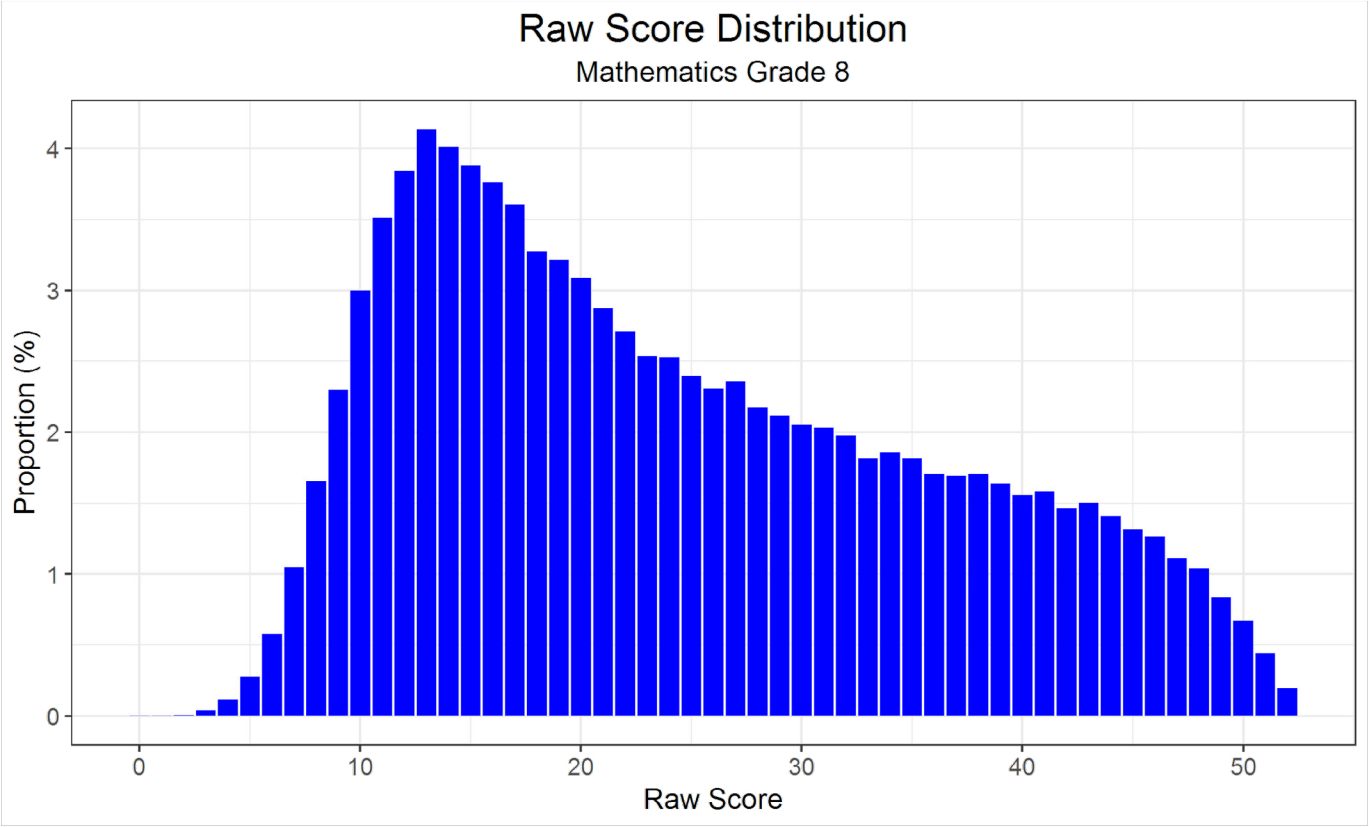
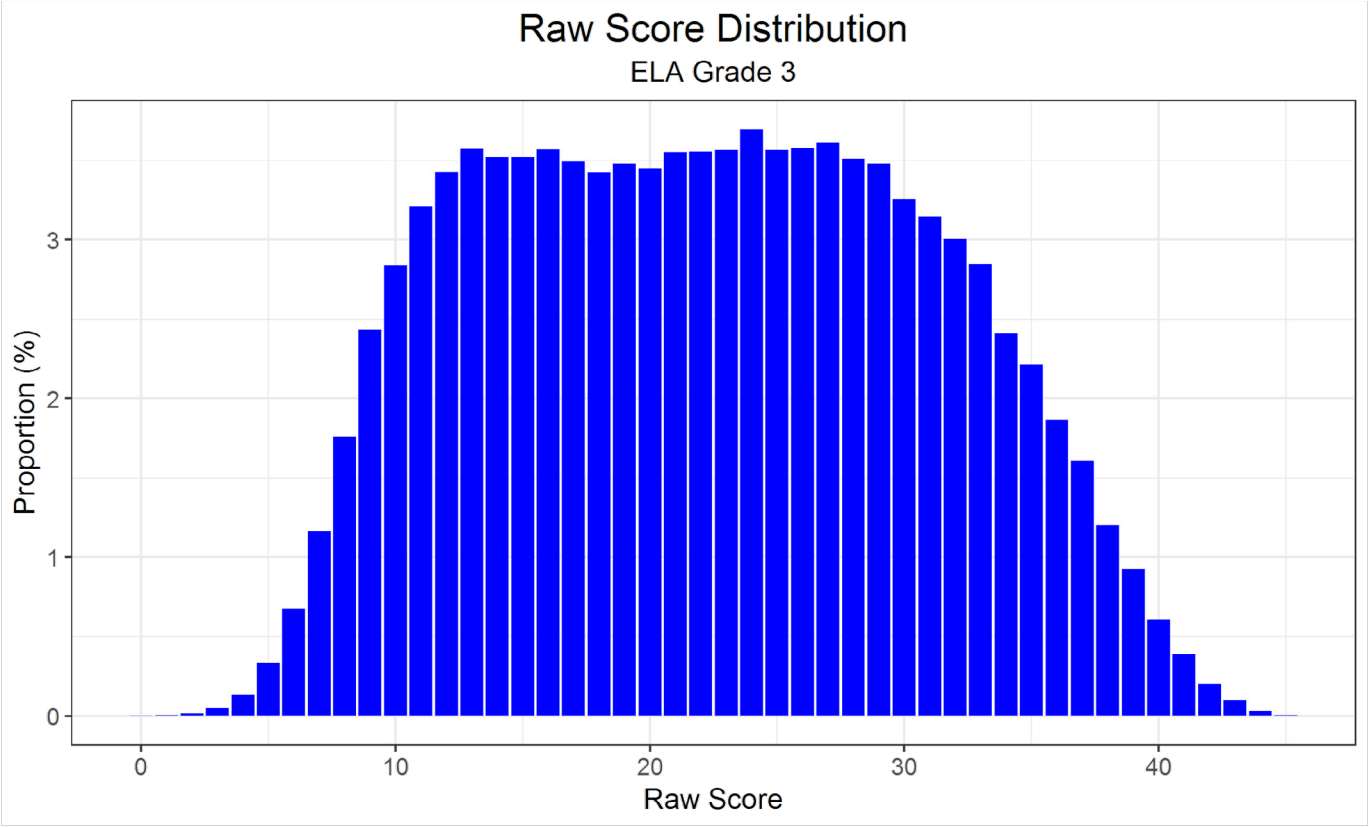


Figure 17–1 (continued). 2024 PSSA Raw Score Distributions



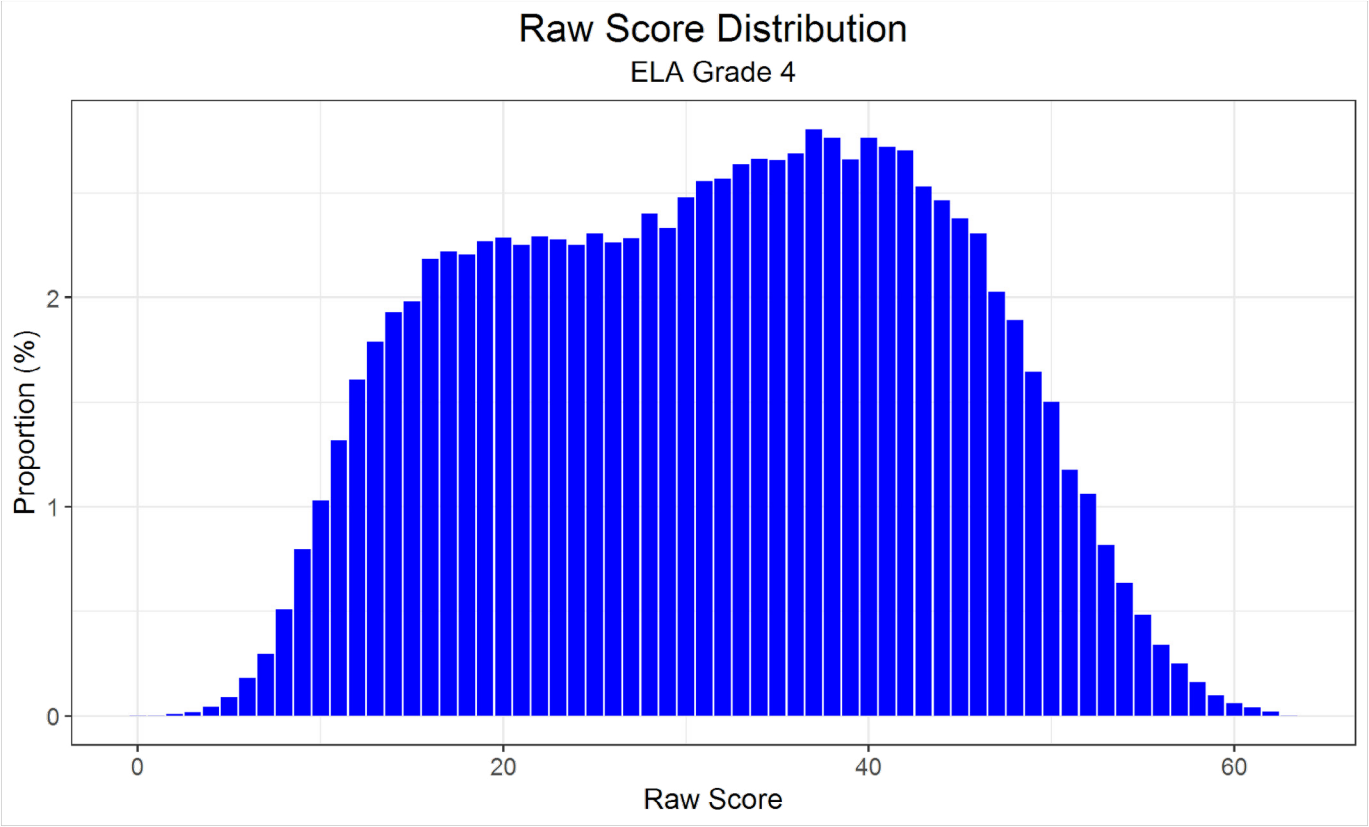
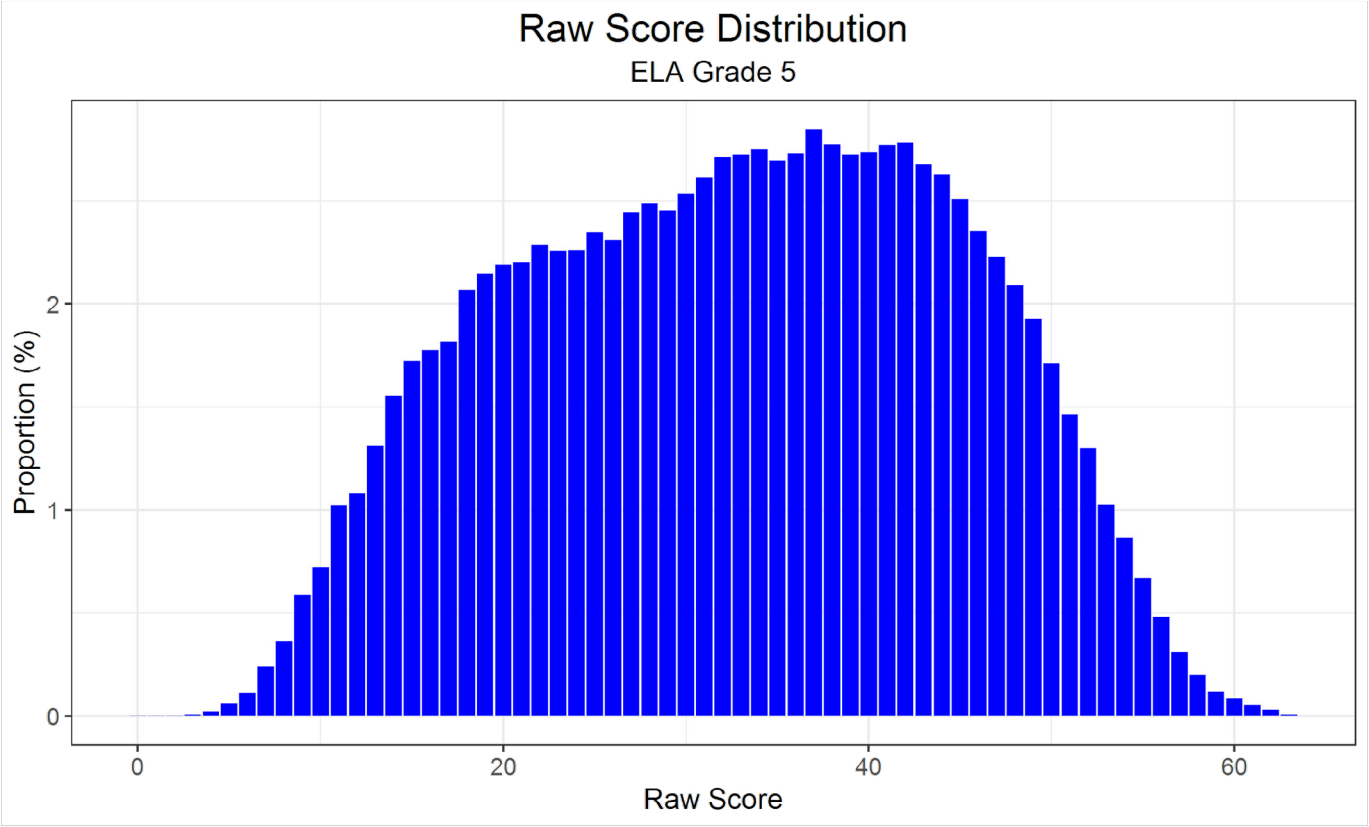


Figure 17–1 (continued). 2024 PSSA Raw Score Distributions



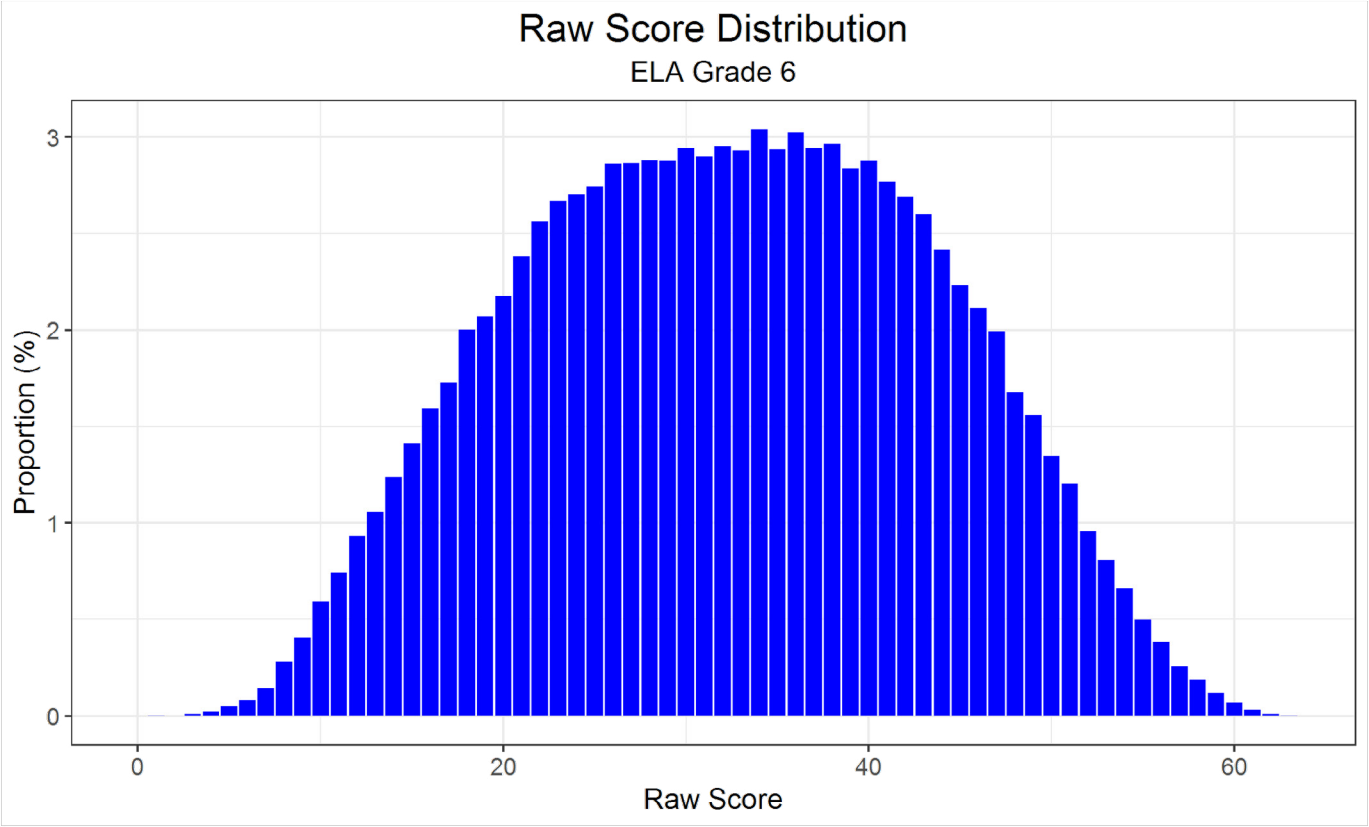
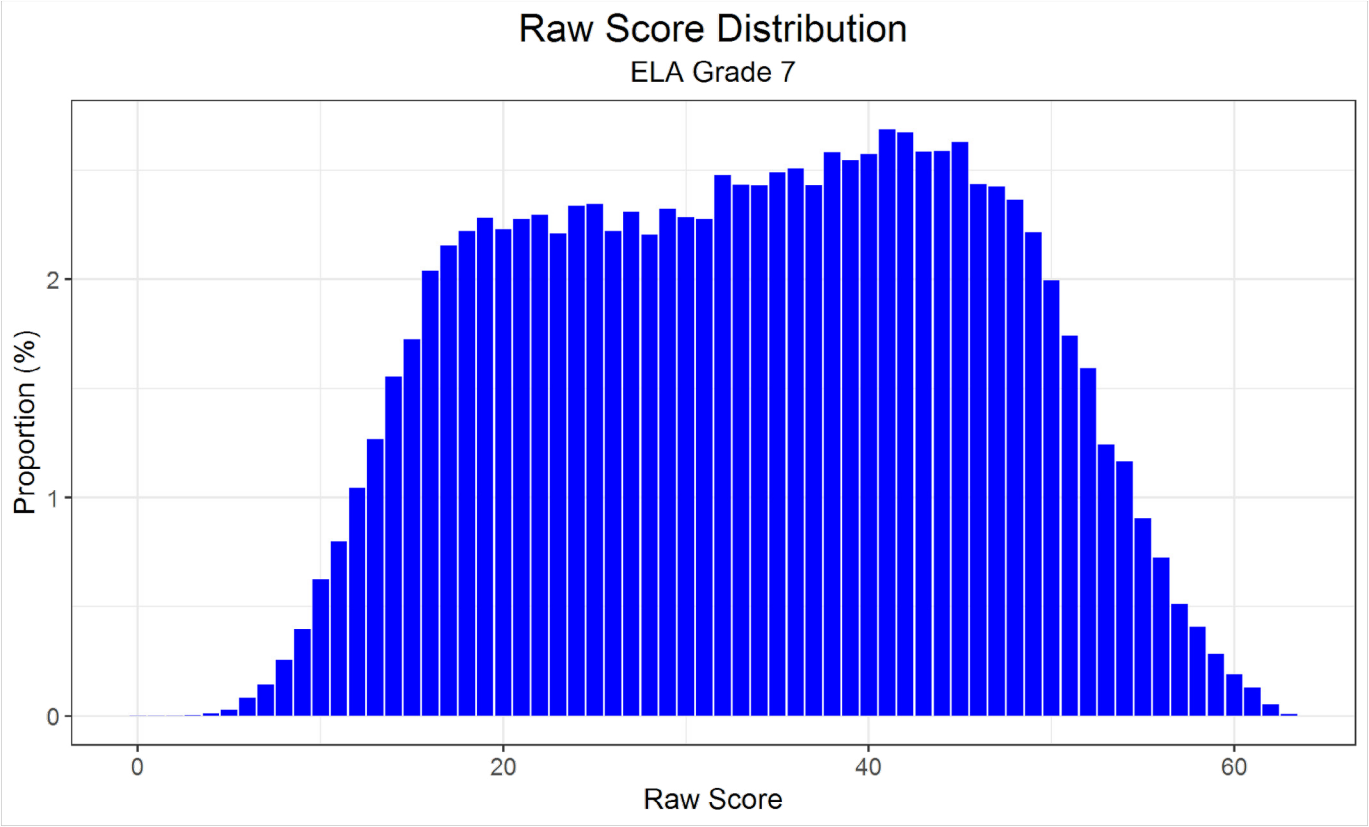


Figure 17–1 (continued). 2024 PSSA Raw Score Distributions



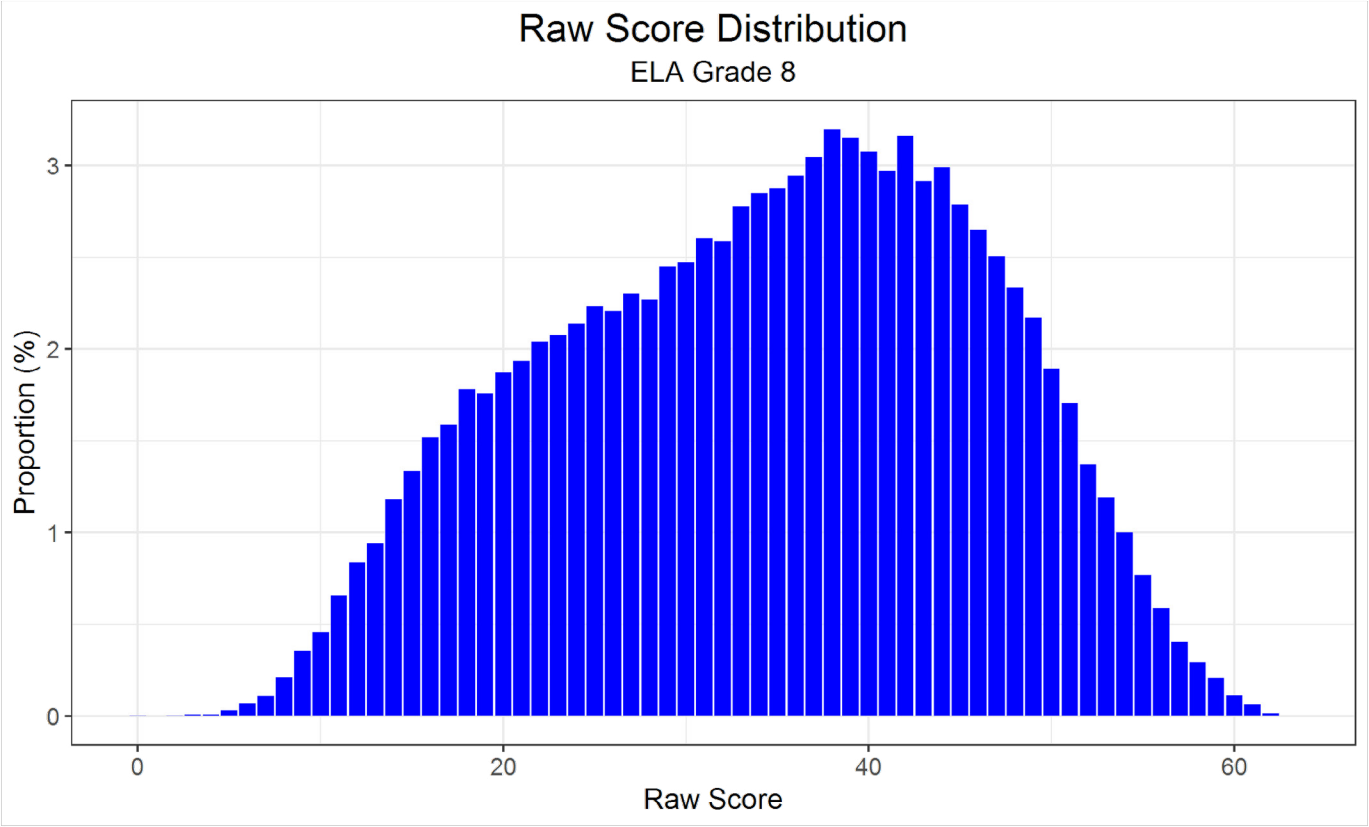
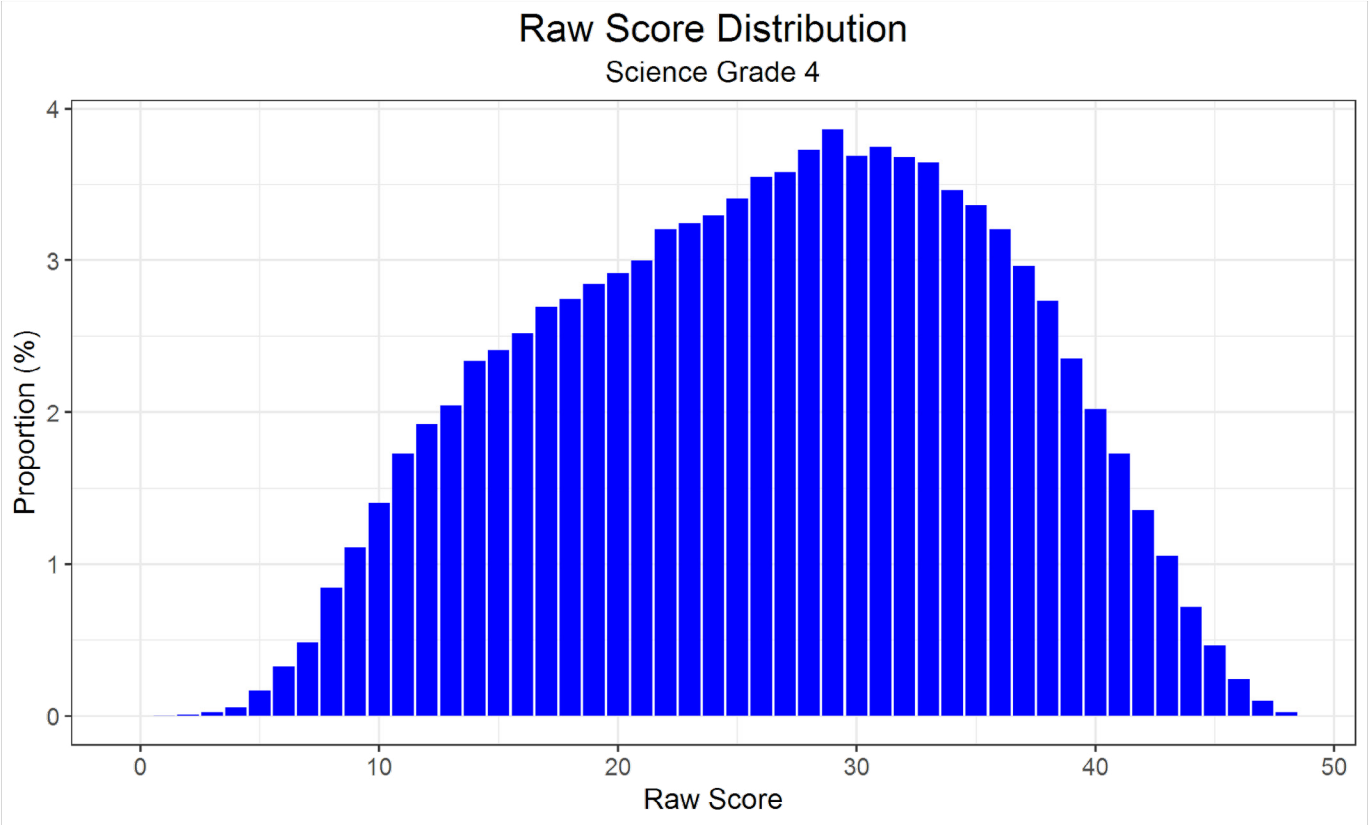
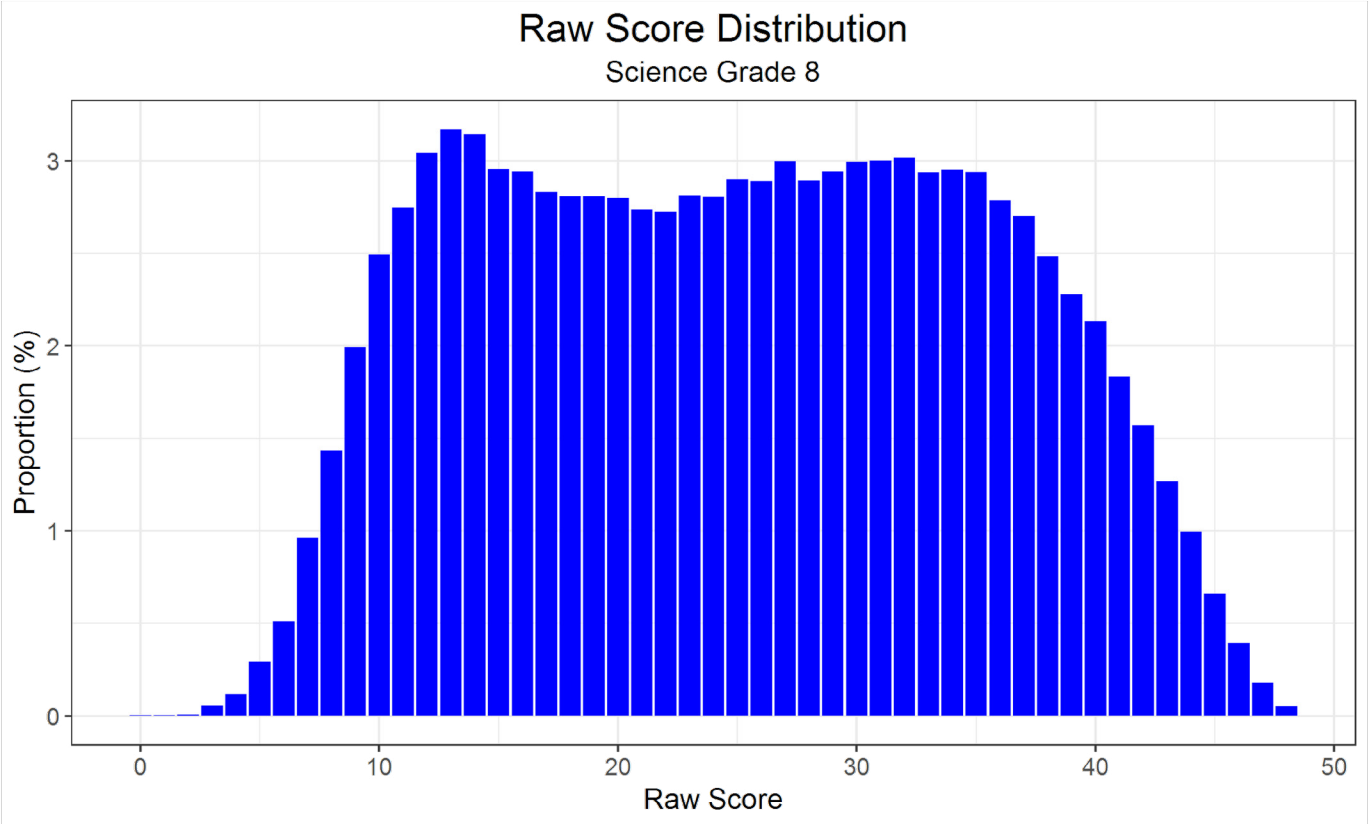


Figure 17–1 (continued). 2024 PSSA Raw Score Distributions





CHAPTER EIGHTEEN: RELIABILITY

This chapter addresses the reliability of PSSA test scores. According to the *Standards for Educational and Psychological Testing (*AERA, APA, & NCME, 2014), the general notion of reliability/precision refers to:

> the consistency of scores across replications of a testing procedure, regardless of how this consistency is estimated or reported (p.33).

This chapter will use the term reliability.

Frisbie (2005) highlighted several elements of reliability. First, reliability is a property of test scores, not a test itself. Many may appreciate this distinction, but in casual usage, individuals frequently refer to a reliable test. While reliability concerns test scores (and not the test specifically), it is important to emphasize the fact that test scores can be affected by characteristics of the instrument. For example, all other things being equal, tests with more items or points tend to be more reliable than tests with fewer items or points. Second, reliability coefficients are group specific. Reliabilities tend to be higher in populations that are more heterogeneous and lower in populations that are more homogeneous. Consequently, both test length and population heterogeneity should be considered when evaluating reliability.

There is a reliability consideration that may be less evident from the *Standard's* definition, yet still important for test users to understand. While freedom from measurement error is very important, reliability is specifically concerned with random sources of error. Indeed, the degree of inconsistency due to random error sources is what determines reliability: less consistency is associated with lower reliability and more consistency is associated with higher reliability. Of course, systematic error sources also exist. These can artificially increase reliability and decrease validity. (Validity is further discussed in Chapter Nineteen.)

Another noteworthy issue is that multiple sources of error exist (e.g., the day of testing, the items used, the raters who score the items). However, most widely used reliability indices only reflect a single type of error. Consequently, it is important for test users to understand what specific type of error is being considered in a reliability study, and equally, if not more important, what types are not.

Understanding the distinction between relative error and absolute error is also important as many reliability indices only reflect relative error. Relative error is of interest whenever the relative ordering of individuals respective to their test performance is of interest. Understanding examinee rank-order stability is important; however, such stability might be well achieved even when the specific score values are considerably different. When specific score values are considered important (e.g., if cuts cores are used), then absolute error is too. Generally, there is more error variance when considering the absolute scores of examinees, which in turn suggests lower reliability.

As suggested, reliability is a complex, nonunitary notion that cannot be adequately represented by a single number. There are several reliability indices available, and these may not provide the same results (Frisbie, 2005). The remainder of this chapter covers the following:

- Reliability coefficients and their interpretation
- Unconditional and conditional standard errors of measurement (SEMs and CSEMs)
- Decision consistency
- Rater agreement

RELIABILITY INDICES

As the equation shows below, the reliability coefficient expresses the consistency of test scores as the ratio of true score variance to total score variance. The total variance contains two components: 1) the variance in true scores and 2) the variance due to the imperfections in the measurement process. Put differently, total variance equals true score variance plus error variance.[1]

$$\rho_X^2 = \frac{\sigma_T^2}{\sigma_X^2} = \frac{\sigma_T^2}{\sigma_T^2 + \sigma_E^2}$$

Reliability coefficients indicate the degree to which differences in test scores reflect true differences in the attribute being tested rather than random fluctuations. Total test score variance (i.e., individual differences) is partly due to real differences in the attribute (true variance) and partly due to random error in the measurement process (error variance).

Reliability coefficients range from 0.0 to 1.0. If all test score variances were true, the index would equal 1.0. The index will be 0.0 if none of the test score variances were true. Such scores would be pure random noise (i.e., all measurement error). A reliability index of 1.0 would indicate that scores were perfectly consistent (i.e., contain no measurement error). Although values of 1.0 are never achieved in practice, larger coefficients are more desirable because they indicate that test scores are less influenced by random error. (How big is big enough and how small is too small are issues considered in a later section.)

As previously noted, there are several different indices that can be used to estimate this ratio. One approach is referred to as internal consistency, which is derived from analyzing the performance consistency of individuals over the items within a test. As discussed below, these internal consistency indices do not account for other sources of error, for example, variations due to random errors associated with the linking process, day-to-day variations (student health, testing environment, etc.), and rater inconsistency.

COEFFICIENT ALPHA

Although several reliability indices exist, perhaps the one most frequently reported for achievement tests is Coefficient Alpha. Consequently, this index is the one reported for the PSSA. Alpha indicates the internal consistency over the responses to a set of items measuring an underlying trait, in this case, academic achievement in subject areas such as mathematics, ELA, and science.

Alpha is an internal consistency index. It can be conceptualized as the extent to which an exchangeable set of items from the same domain would result in a similar rank ordering of students. Note that relative error is reflected in this index. Consider two hypothetical vocabulary tests intended for the same group of students. Each test contains different sets of unique words that are believed to be randomly equivalent, perhaps like the ones shown below.

Table 18–1. Two Hypothetical Vocabulary Tests

Test One	Test Two
Abase	Abate
Boon	Bilk
Capricious	Circuitous
Deface	Debase
....	....
Zealous	Zenith

[1] A covariance term is not required as true scores, and error are assumed to be uncorrelated in classical test theory.

If a representative group of students could take both tests, and the correlation between the scores could be obtained, then that result would represent the parallel forms reliability of the test scores. However, such data-collection designs are impractical in large-scale settings and experimental confounds like fatigue and practice effects are likely to affect the results. Internal-consistency reliability indices arose in part to provide reliability measures using the data from just a single test administration. So, if students only took Test One and the Coefficient Alpha index for those test scores was high, then this would suggest that Test Two would provide a very similar rank ordering of the students if they had taken it instead. If Coefficient Alpha were low, dissimilar rank orderings would likely be observed—again, relative-error variance is reflected in Alpha. (It should also be noted that Coefficient Alpha is algebraically identical to a *Person* × *Item* design under Generalizability Theory when relative error variance is assumed.)

FORMULA

Consider the data matrix in Table 18–2 representing the scores of persons (*p*) in rows, and items (*i*) in columns. Each cell is the score of person "*p*" on item i, and Y represents each item raw score for each person.

Table 18–2. Person × Item Score (X_{pi}) Infinite (Population-Universe) Matrix

Person	Item 1	Item 2	Item *i*
1	Y_{11}	Y_{12}	$\ldots Y_{1i}$
2…	Y_{21}	Y_{22}	$\ldots Y_{2i}$
p	Y_{p1}	Y_{p2}	$\ldots Y_{pi}$

The general computational formula for Alpha is as follows:

$$\alpha = \frac{N}{N-1}\left(1 - \frac{\sum_{i=1}^{N}\sigma_{Yi}^2}{\sigma_X^2}\right),$$

where *N* is the number of parts (items or testlets), σ_X^2 is the variance of total test scores, and σ_{Yi}^2 is the variance of part i.

FURTHER INTERPRETATIONS

RULES OF THUMB

What reliability value is considered high enough? What values are considered too low? Although frequently asked for, any rules of thumb for interpreting the magnitude of reliability indices are mostly arbitrary. Another approach is to research the reliabilities from similar testing instruments to see what values are commonly observed. For the PSSA, comparisons to tests of similar lengths that were administered to similar student populations from other large-scale assessment programs would be relevant. For many other state assessment programs, reliabilities in the low 0.90s are usually the highest ever observed and reliabilities in the high 0.80s are very common.

The lower a given reliability coefficient, the greater the potential for over-interpretation of the associated results. As suggested above, there is no firm guideline regarding how low is too low. However, as an informative point of reference, a reliability coefficient of 0.50 would suggest that there is as much error variance as true-score variance in the scores.

IS ALPHA A LOWER LIMIT TO RELIABILITY?

According to Brennan (1998), "the conventional wisdom that Coefficient Alpha is a lower limit to reliability is based largely on a misunderstanding." In reflecting on the 50th anniversary of his seminal 1951 article, Cronbach—in Cronbach and Shavelson (2004)—expressed similar misgivings about this conventional wisdom:

> one could argue that alpha was almost an unbiased estimate of the desired reliability…. the almost in the preceding sentence refers to a small mathematical detail that causes the alpha coefficient to run a trifle lower than the desired value. This detail is of no consequence and does not support the statement made frequently in textbooks or in articles that alpha is a lower value to the reliability coefficient. That statement is justified by reasoning that starts with the definition of the desired coefficient as the expected consistency among measurements that had a higher degree of parallelism than the random parallel concept implied.

The assumptions for three common parallelism models are presented in Table 18–3. Alpha's assumptions come from the Essentially-Tau Equivalent model, which does not require equal means or equal variances across test parts. Based on this, Brennan (1998) asserts that the lower-limit issue, as conceptualized by many, provides an answer to a question that is of minimal importance. Reframed differently, the goal of selecting a reliability coefficient is not to find the one that provides the highest coefficient, but the one that most accurately reflects the test data under study.

It is important to note that there are factors encountered in practice that may legitimately make Coefficient Alpha an underestimate of reliability. However, there are also factors that might make Coefficient Alpha an overestimate of reliability. Both possibilities are discussed further below and generally arise when the Essentially-Tau Equivalent assumptions are strained.

Table 18–3. Summary of Expectations/Observable Relationships for Different Parallelism Models

Relationship	Classically Parallel	Essentially-Tau Equivalent	Congeneric
Content Similarity	Yes	Yes	Yes
Equal Means across Parts	Yes	No	No
Equal Variances across Parts	Yes	No	No
Equal Covariances across Parts	Yes	Yes	No
Equal Covariances with Other Variables	Yes	Yes	No

* Other models exist but are not considered here due to their limited application in practice.

FACTORS OR BIASES THAT MAY UNDERESTIMATE ALPHA

There are factors that might negatively bias Coefficient Alpha, which possibly lower the resultant reliability coefficients. Two situations frequently encountered in practice that might cause this include tests that are composed of mixed item types (e.g., multiple-choice (MC) and open-ended (OE) items) and tests that include a planned stratification of the test items according to topics or subdomains.

Although both situations strictly violate the assumptions on which Coefficient Alpha is derived (i.e., the tests are not based on equal part lengths in the former case and are not randomly parallel in the latter case), neither necessarily guarantees that the reliability will be markedly lower. In the latter case, reliability will be underestimated only when strand items are homogeneous enough for the average covariance within strata to exceed the average covariance between strata. Although both are potential influences for the PSSAs, the total test score reliabilities reported in Appendix P range from 0.64 to 0.92, indicating highly consistent test scores for the PSSA.

BIASES THAT MIGHT MAKE ALPHA AN OVERESTIMATE OF RELIABILITY

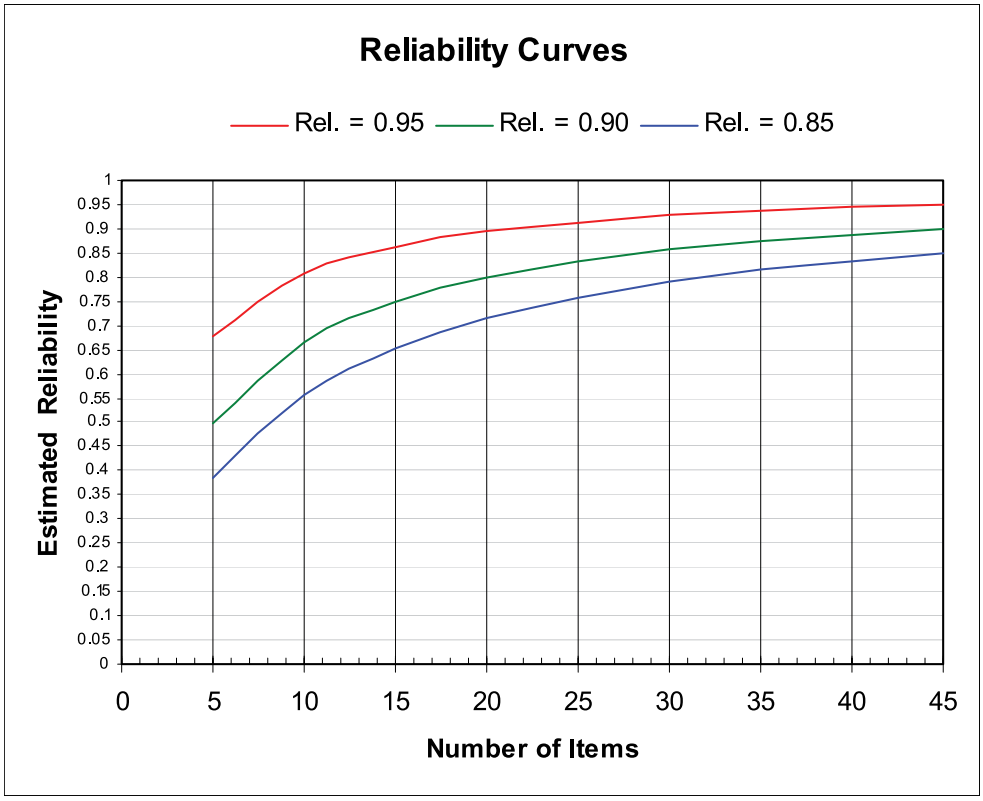
As emphasized in earlier sections, Coefficient Alpha only takes into account measurement error that arises from the selection of items used on a particular test form. There are other sources of random inaccuracy. One is due to the occasion of testing. Other various random conditions that might affect students on any particular testing occasions include illness, fatigue, and anxiety. Also, when a test includes OE items, as the PSSA does, another source that can cause random fluctuation is the OE item scorers. In a sense, Alpha may be positively biased because it does not take into account these other important sources of random error. Any internal consistency reliability index could understate the overall problem of measurement error because it ignores such sources or random error.

Another positive bias can occur when items are associated (clustered) with a common stimulus. Item bundles and testlets are other frequently used terms for this situation. One concrete example is when multiple reading comprehension items are associated with a common passage selection. Again, such a situation does not guarantee that the reliability estimate will be markedly affected, but the potential exists.

STRAND SCORES

As noted in the introduction, reliabilities tend to go up in value with an increase in test length and go down in value with a decrease in test length. Figure 18–1 illustrates this relationship for a hypothetical 45-point test with three total score reliabilities: 0.95, 0.90, and 0.85. As an example, the curve for reliability equal to 0.90 suggests that a 15-item strand would be expected to have a score reliability of 0.75. The use of the Spearman-Brown prophecy formula assumes all items are exchangeable, which in practice they may not be. While such a chart may not perfectly model actual strand correlations, the intent is only to illustrate the substantial impact that limited numbers of strand items can have on strand-score reliability. One should not be surprised that strand scores with more points tend to show higher reliability coefficients and those with fewer points tend to show lower reliability coefficients. Further, what is most important for PSSA users to note is that some strand score reliabilities may be too low to warrant interpretation at the individual student level.

Figure 18–1. Example of the Relationship between Test Length and Reliability



Note. Tabled values derived using the Spearman-Brown formula.

INDIVIDUAL-LEVEL VERSUS GROUP-LEVEL SCORES

The results presented in this chapter pertain to the reliability of individual scores. Group results (e.g., state and district levels) are also provided on PSSA score reports, but the reliability of those scores is not specifically calculated here. However, as a general rule, the reliabilities of group mean scores are almost always higher (sometimes substantially) than the corresponding reliabilities for individual scores. This is especially important to remember for strand scores because those scores can be quite reliable at the group level, even though their individual reliabilities may be low. Because the reliability of group means (e.g., school or district means) tends to be higher than that of individual scores, the interpretation of strand scores at these aggregate levels is likely very reasonable in most instances. Even though the reliability for means scores based on only a few items might be adequate, the validity of those same scores might be suspect because use of only a few items may not adequately cover the construct of interest. Validity is further discussed in Chapter Nineteen.

RELIABILITY OF WRITING SCORES

An extension of Coefficient Alpha that was derived to specifically fit stratified parallel tests (sometimes called stratified alpha; Cronbach, Schonemann, & McKie, 1965) was used to compute the PSSA ELA score reliabilities. This approach is often used when it is believed that Alpha may be yielding a lower coefficient than it should for the reasons noted above. Although originally developed for content-stratified tests, Qualls (1995) demonstrated its utility for mixed-format tests as well when the stratification is based on item type. It may be computed as

$$_{strat\alpha}\rho_{xx'} = 1 - \frac{\Sigma\sigma^2 x_h (1 - {}_{\alpha}\rho_{x_h x_{h'}})}{\sigma^2 x},$$

where *h* indexes the individual strata.

The reliability of ELA assessments (and many other performance-based tests) with mixed-format tends to be lower than reliabilities for other tests. Part of the reason for this is that there can be student-by-task, rater-by-task, and rater-by-examinee response interactions on such assessments. In the case of ELA, individual student performance may fluctuate significantly across text-dependent analysis (TDA) and evidence-based selected-response (EBSR) item types on the same test. In principle, adding more prompts and items can improve reliability to a more acceptable level. However, this is challenging in practice because of costs, testing time, and student fatigue. These conditions can result in reliabilities for ELA assessments that are slightly lower than those for mathematics and science assessments.

STANDARD ERROR OF MEASUREMENT

The reliability coefficient is a unit-free indicator that reflects the degree to which scores are free of measurement error. The reliability coefficient always ranges between 0 and 1 regardless of the test's scale. Reliability coefficients best reflect the extent to which measurement inconsistencies may be present or absent in a group. However, they are not that useful for helping users interpret test scores. The standard error of measurement (SEM) is another indicator of degree of consistency for the scores obtained by individual examinees. A relatively large SEM indicates relatively low reliability. The conditional SEMs (CSEM) discussed further below is the SEM at the score level.

TRADITIONAL STANDARD ERROR OF MEASUREMENT

A precise, theoretical interpretation of the SEM is somewhat unwieldy. A beginning point for understanding the concept is as follows. If everyone being tested had the same true score,[2] there would still be some variation in observed scores due to imperfections in the measurement process, such as random differences in attention during instruction or concentration during testing and the sampling of test items. The standard error is defined as the standard deviation[3] of the distribution of observed scores for students with identical true scores. Because the SEM is an index of the random variability in test scores in actual score units, it represents very important information for test score users.

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[2] True score is the score the person would receive if the measurement process were perfect.

[3] The standard deviation of a distribution is a measure of the dispersion of the observations. For the normal distribution, about 16 percent of the observations are more than one standard deviation above the mean.

The SEM formula is provided below.

$$SEM = SD\sqrt{1—reliability}$$

This formula indicates the value of the SEM depends on both the reliability coefficient and the standard deviation of test scores. If the reliability were equal to 0.00 (the lowest possible value) the SEM would be equal to the standard deviation of the test scores. If test reliability were equal to 1.00 (the highest possible value) the SEM would be 0.0. In other words, a perfectly reliable test has no measurement error (Harvill, 1991). Additionally, the value of the SEM takes the group variation (i.e., score standard deviation) into account. Consider that an SEM of 3 on a 10point test would be very different than an SEM of 3 on a 100-point test.

TRADITIONAL STANDARD ERROR OF MEASUREMENT CONFIDENCE INTERVALS

The SEM is an index of the random variability in test scores in actual score units, which is why it has such great utility for test score users. SEMs allow statements regarding the precision of individual test scores. SEMs help place 'reasonable limits' (Gulliksen, 1950) around observed scores through construction of an approximate score band. Often referred to as confidence intervals, these bands are constructed by taking the observed scores, *X*, and adding and subtracting a multiplicative factor of the SEM. As an example, students with a given true score will have observed scores that fall between +/-1 SEM about two-thirds of the time.[4] For +/-2 SEM confidence intervals, this increases to about 95 percent.

FURTHER INTERPRETATIONS

ONE STANDARD ERROR OF MEASUREMENT FOR ALL TEST SCORES

The SEM approach described above only provides a single numerical estimate for constructing the confidence intervals for examinees regardless of their score level. However, such confidence intervals vary according to a student's score. Consequently, care should be taken using the SEM for students with extreme scores. (In the next sections, an alternate approach is described that conditions the SEM on a student's score estimate.)

GROUP SPECIFIC

As noted in the introduction, reliabilities are group specific. The same is true for SEMs because both score reliabilities and score standard deviations vary across groups.

RAW-SCORE METRIC

The SEM approach is calculated using raw scores, and as such, the resulting confidence interval bands are on the raw score metric. Error bands on the scaled score metric are considered in the next section.

TYPE OF ERROR REFLECTED

The interpretation of the SEM should be driven by the type of score reliability that underpins it. So, the PSSA SEMs involve the same source of error relevant to internal consistency indices. As noted earlier, a precise technical explanation of the SEM (and resulting confidence intervals) can be unwieldy. Because of this, score users are often provided fewer complex interpretations.

One simpler description is that a confidence interval represents the possible score range one would observe if a student could be tested twice with the same instrument. Taking the same test on a different day implies the only source of random error being considered is related to the occasion of testing, such as a student might be sleepier one day than another, or may be sick, or did not get a good breakfast. There is a reliability index that captures this source of random error, and it is referred to as the test-retest reliability coefficient. This is not the type of reliability computed for the PSSAs. When internal consistency reliability estimates are used, such an explanation blurs the fact that random error based on testing is not considered.

When SEMs are derived from internal consistency reliability estimates, a better approach is to describe the confidence interval as providing reasonable bounds for the range of scores that a student might receive if he or she took an equivalent version of the test; that is, the student took a test that covered exactly the same content

[4] Some prefer the following interpretation: if a student were tested an infinite number of times, the +/-1 SEM confidence intervals constructed for each score would capture the student's true score 68 percent of the time.

but included a different set of items (if an infinite number of tests with equivalent content were taken, the student's true score will lie within the constructed confidence intervals 68 percent of the time). As an example, if the PSSA score was 1150 and the SEM band was 1100 to 1200, then a student would be likely to receive a score somewhere between 1100 and 1200 if a different version of the test had been taken.

RESULTS AND OBSERVATIONS

Reliability coefficients and associated (traditional) SEMs for PSSA scores are documented in Table 18–4 and Appendix P. Values were derived using the PSSA final data file (see Chapter Nine). The reliabilities for all student scores reported in Table 18–4 and Appendix P differ only for ELA grades 4 to 8 as reliabilities were calculated differently. The Stratified Alpha Coefficient based on unweighted raw scores was used to estimate the reliabilities in Table 18–4, whereas the Coefficient Alpha based on total (weighted raw scores) was used to estimate the reliabilities in Appendix P. It is not appropriate to estimate Stratified Alpha by reporting category (as shown in Appendix P) because often the number of items is smaller by reporting category and each category may not include more than one item of each item format. Moreover, the purpose of Appendix P is to show the comparability of the Cronbach Alpha coefficient across reporting categories and also to show the total score reliability for consistency.

Results are organized by subject and grade level. Each table in Appendix P also disaggregates the various reporting categories and groups of interest (i.e., the total student population, gender and ethnic groups, English learners (EL), students with individualized education plan (IEP), and students who are economically disadvantaged). The statistics reported in Appendix P include number of points possible (Total Points), number of items (N Items), number of students tested (N), mean number of score points received (Mean), standard deviation of test scores (SD), reliability (r), traditional standard error of measurement (SEM), and item types (Item Types). Reliabilities for reporting category "E" for ELA grades 4 to 8 are not computed because it only consists of one Text-Dependent Analysis (TDA) item and reliabilities cannot be computed for only one item.

The reliabilities and standard error of measurement for each subject and grade level are reported in Table 18–4. The reliability of mathematics scores range from .91 to .92, the reliability of ELA scores range from .88 to .91, and the reliability of science scores are .89 and .91 for grades 4 and 8, respectively.

Table 18–4. Reliabilities and Standard Errors of Measurement

Subject	Grade	Reliability	*SEM*
Mathematics	3	0.92	3.30
Mathematics	4	0.92	3.25
Mathematics	5	0.91	3.36
Mathematics	6	0.92	3.25
Mathematics	7	0.92	3.29
Mathematics	8	0.92	3.38
ELA	3	0.88	3.02
ELA	4	0.90	3.20
ELA	5	0.90	3.15
ELA	6	0.89	3.18
ELA	7	0.91	3.15
ELA	8	0.89	3.16
Science	4	0.89	3.10
Science	8	0.91	3.11

Note. Reliabilities are based on unweighted raw scores.

Note that these tables in Appendix P report the standard deviations of observed scores. Assuming normally distributed scores, one would expect about two-thirds of the observations to be within one standard deviation of the mean. An estimate of the standard deviation of the true scores can be computed as

$$\hat{\sigma}_T = \sqrt{\hat{\sigma}_x^2 - \hat{\sigma}_x^2(1-\hat{\rho}_{xx})}.$$

The results are historically consistent with past PSSA reliability results. The overall test score reliability values are strong, as they are all close to .90. In theory and in practice, test reliability is influenced by test length. However, theory and practice also provide methods to offset this tendency and facilitate the production of reliable assessments under different test length scenarios. These methods focus on the statistical information that is provided by items. When this information is proven to be high during field testing, and is balanced with test blueprint requirements, the use of such items allows for the optimization of content validity and test reliability. This is the approach that was first used for construction of the 2019 PSSAs and will continue to be used moving forward as the item pool is routinely replenished with similarly high-quality items.

Across the grades and subjects tabled in Appendix P, reliabilities for each reporting category are also provided. Reporting categories are detailed in Chapter Two. Reporting categories with more items tend to show higher reliability coefficients, but the test length reductions implemented in 2018 resulted in a larger decrease of score reliability at the reporting category level compared to the total test level. Also, groups exhibiting more variability in test scores tended to have higher reliability coefficients. Perhaps the most significant result pertains to an earlier caution (i.e., that some reporting category reliabilities may be too low to warrant interpretation at the individual student level). Once again, there is no firm guideline regarding how low is too low. The lower a given reliability coefficient, the greater the potential for over-interpretation. As a point of reference, a reliability coefficient of 0.50 would suggest that there is as much error variance as true-score variance in the scores. It should be noted that the reliability of group means (e.g., school or district means) tends to be higher than that of individual scores, suggesting interpretation of strand scores at these aggregate levels is likely reasonable.

RASCH CONDITIONAL STANDARD ERROR OF MEASUREMENT

The CSEM also indicates the degree of measurement error but does so in scaled-score units and varies as a function of a student's actual scaled score. Therefore, the CSEM may be especially useful in characterizing measurement precision with respect to score levels used for decision-making—such as cut scores for identifying students who meet a performance standard.

Technically, when a Rasch model is applied, the CSEM at any given point on the ability continuum is defined as the reciprocal of the square root of the test information function derived from the Rasch scaling model.

$$CSEM(\hat{\theta}) = \frac{1}{\sqrt{I(\hat{\theta})}}$$

where is the conditional standard error of measurement and $I(\hat{\theta})$ is the test information function. Test information depends on the sum of the corresponding information functions for the test items. Item information depends on each item's difficulty and conditional item score variance. The formula above utilizes the Rasch ability (θ) metric. The conditional standard error on the scaled score (SS) metric is determined by simply multiplying the $CSEM(\hat{\theta})$ by the slope (multiplicative constant, m) of the linear transformation equation used to convert the Rasch ability estimates to scaled scores.

$$\text{CSEM(SS)} = CSEM(\hat{\theta}) * m$$

Chapter Fourteen provides the linear transformation formulas for each PSSA test.

RASCH CONDITIONAL STANDARD ERROR OF MEASUREMENT CONFIDENCE INTERVALS

CSEMs also allow statements regarding the precision of individual tests scores. And like SEMs, they help place reasonable limits around observed scaled scores through construction of an approximate score band. The confidence intervals are constructed by adding and subtracting a multiplicative factor of the CSEM and may be interpreted as described in the earlier section.

FURTHER INTERPRETATIONS

DIFFERENT CONDITIONAL STANDARD ERROR OF MEASUREMENT FOR DIFFERENT TEST SCORES

The CSEM approach provides different numerical estimates for constructing the confidence intervals for examinees depending on their specific score level. The magnitude of the CSEM values is U-shaped with larger CSEM values associated with lower and higher scores.

GROUP SPECIFIC

Assuming reasonable model-data fit—as explored in Chapter Twelve—the Rasch based CSEMs (conditioned on score level) should not vary across groups.

SCALED-SCORE METRIC

The CSEM and associated confidence interval bands are on the scaled score metric.

TYPE OF ERROR REFLECTED

The SEMs documented on the PSSA score reports are the Rasch-based conditional standard errors of measurement described above. These are provided by the WINSTEPS scaling program described in Chapter Twelve. As noted earlier, these CSEMs are based on the concept of statistical information. To provide a simpler explanation of SEMs to test score users, the earlier description of SEMs framed using the idea of internal consistency reliability was provided in the PSSA score report interpretive documents.[5] Score report content is considered in greater detail in Chapter Sixteen.

RESULTS AND OBSERVATIONS

Figure 18–2 shows the Rasch CSEMs associated across the scaled score distribution. (This information is also provided in the raw-to-scaled score conversion tables in Appendix N.) Values were derived using the pre-equated data file described in Chapter Nine, and the post-equated data file described in Chapter Fifteen. The values are consistent across a large range of the scaled scores, as demonstrated by the relatively flat bottoms of most plots. The values increase at both extremes (i.e., at smaller and larger scaled scores) giving these figures their typical U-shaped pattern. (Only the SEMs for scores greater than the lowest observable scaled scores [LOSS] are shown in the figures; consequently, the complete U-shape does not appear in most plots.) The three red-dashed lines represent the Basic, Proficient, and Advanced scaled score cuts, respectively, moving from lower to higher scaled score values. CSEM values at the cut score lines were generally associated with smaller CSEM values, indicating more precise measurement occurs at these points on the scales. The curves are presented for the current year, and the most recent four administrations.

Because the 2019 examinations were pre-equated, considerable effort was placed on producing tables with CSEM as comparable as possible to the 2018 full length tests. Figure 18–2 displays the CSEM curves for each PSSA from 2019 through 2024[6]. Generally, small differences were noted for the shortened tests (beginning in 2018), with increases of roughly 5–8 across the cut points for all tests. Across all plots, the shape of the 2019 and 2024 curves is quite similar, pointing to good isolation of the statistical impact of the reduction alone as the primary source of difference. Moreover, the CSEM curves from 2019 through 2024 are often overlapping, showing similarity in the precision of scores at each cut-score.

[5] Because IRT CSEMs are based on statistical information, it is questionable whether they account for error variance due to items. However, it seems difficult to construct a simple explanation of IRT CSEMs for the general public.

[6] Figure 18-2 does not show the SEM curves for 2020 due to the cancellation of state-wide summative tests.

Figure 18–2. Conditional Standard Error Plots by Subject and Grade

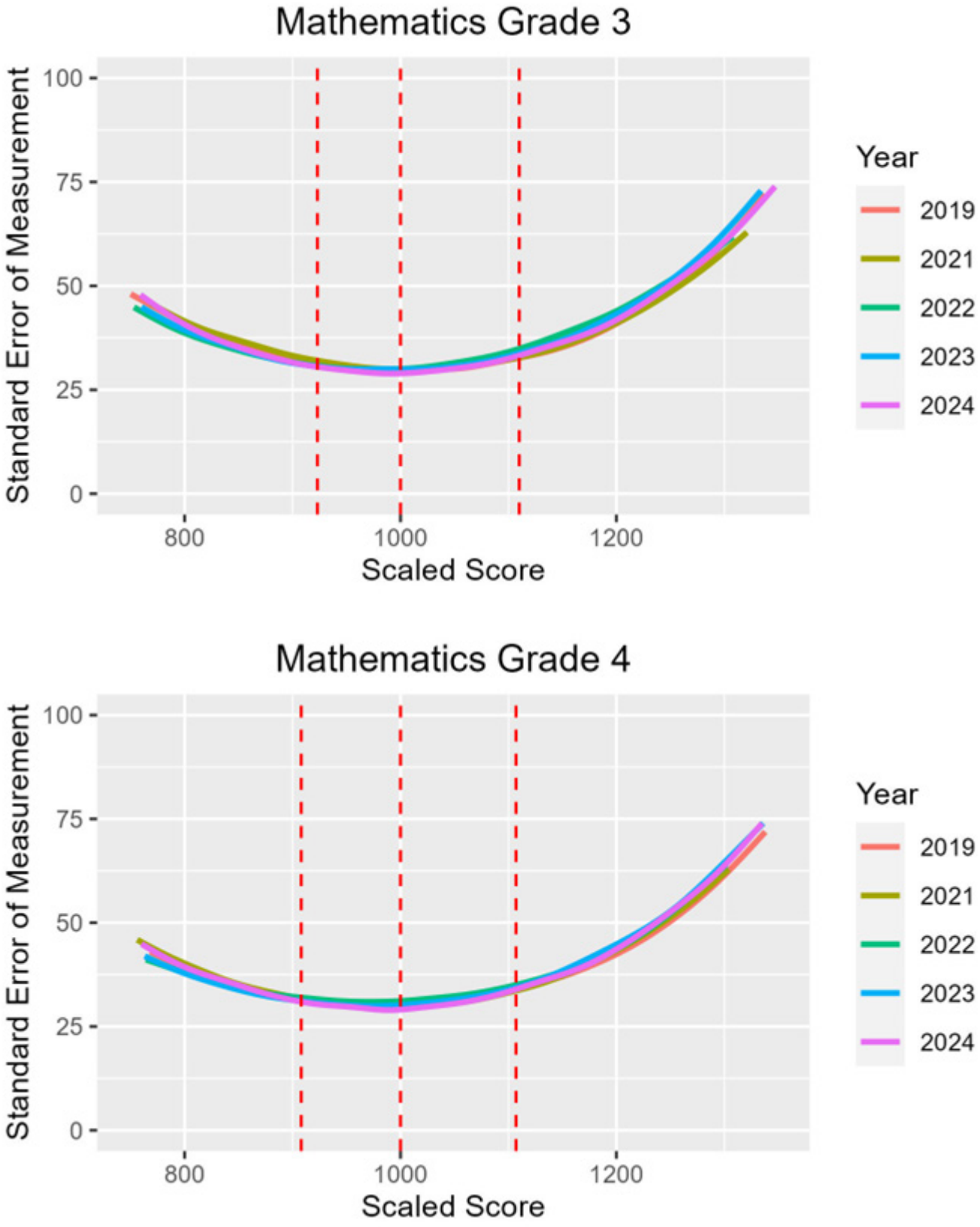


Figure 18–2 (continued). Conditional Standard Error Plots by Subject and Grade

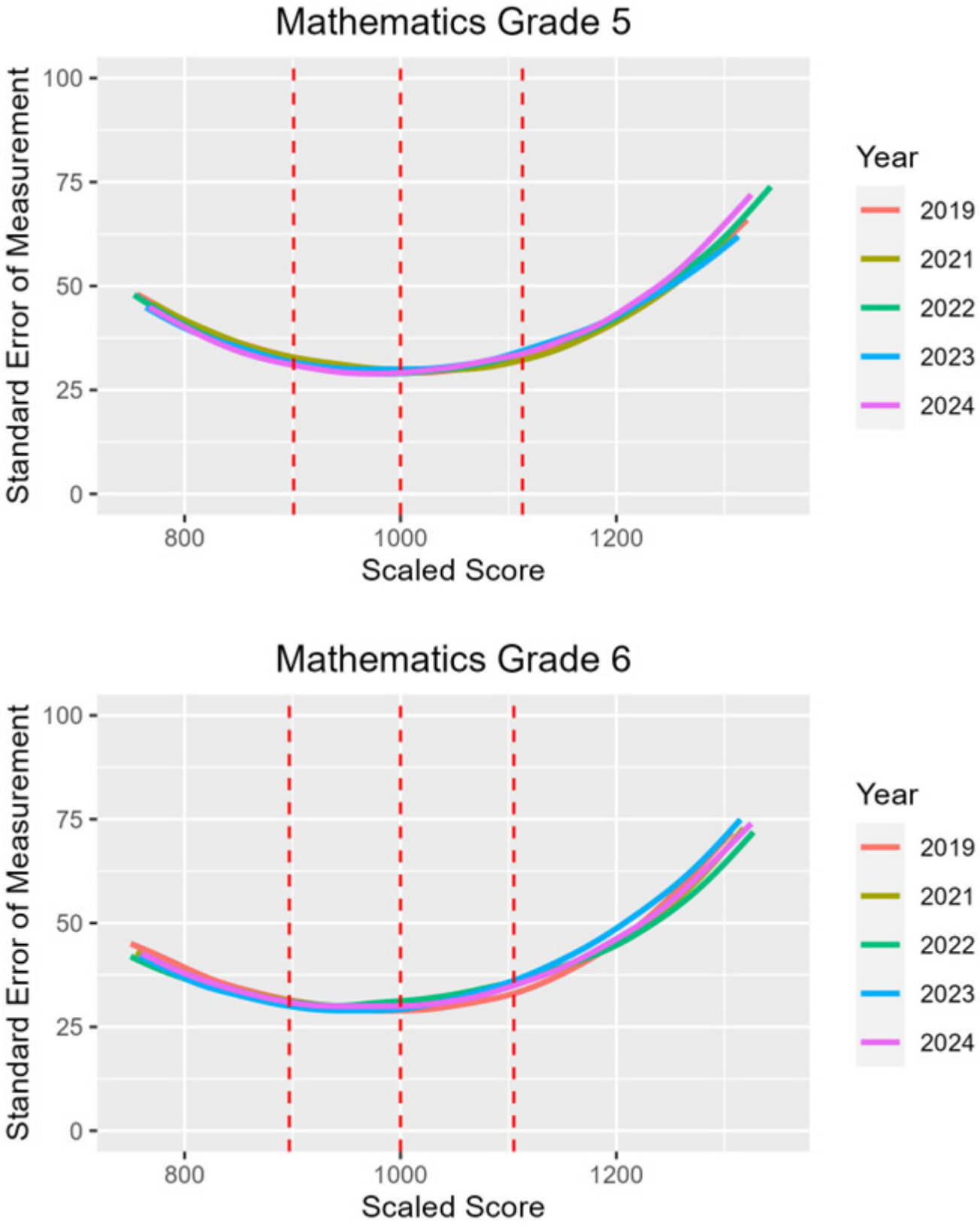


Figure 18–2 (continued). Conditional Standard Error Plots by Subject and Grade

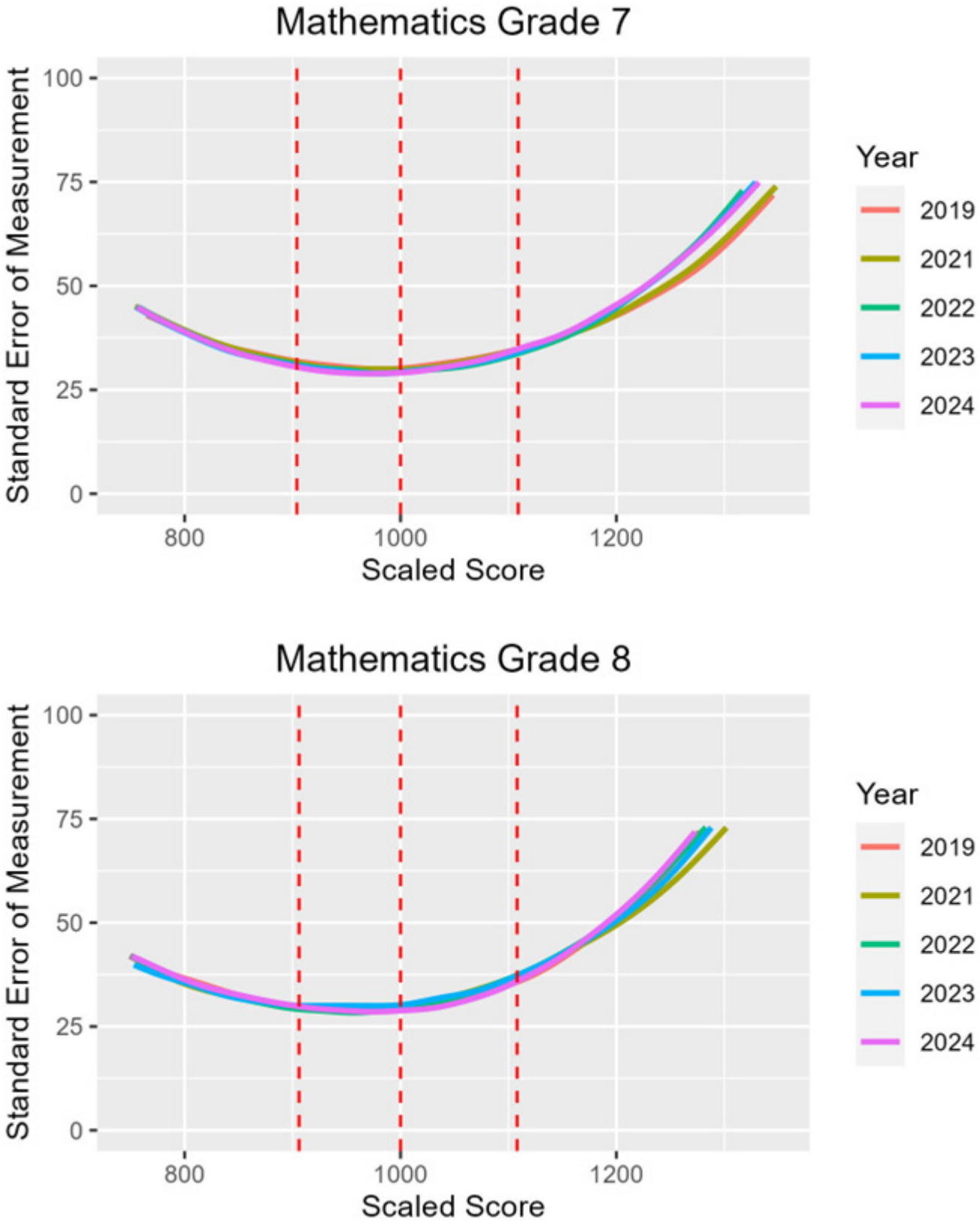


Figure 18–2 (continued). Conditional Standard Error Plots by Subject and Grade

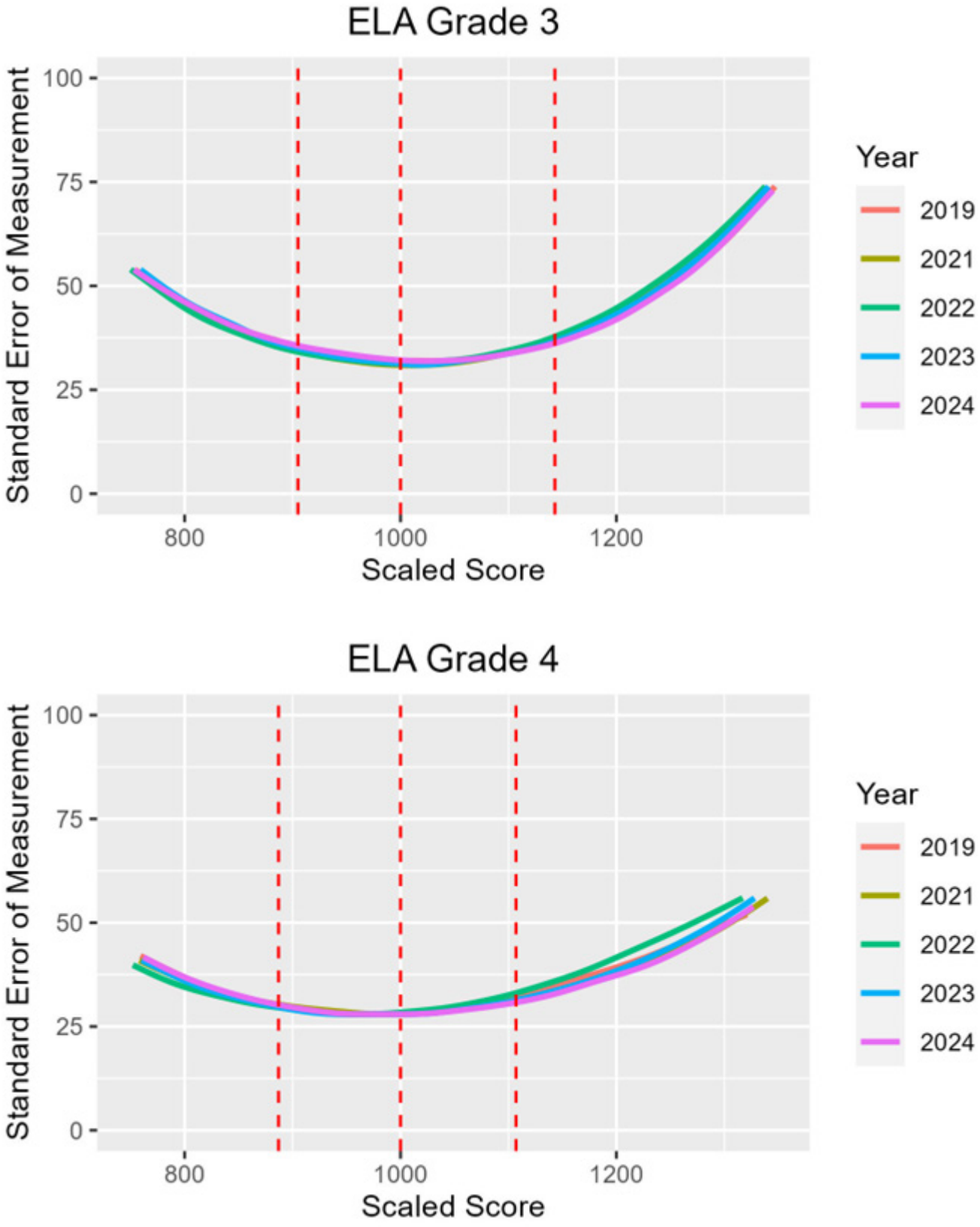


Figure 18–2 (continued). Conditional Standard Error Plots by Subject and Grade

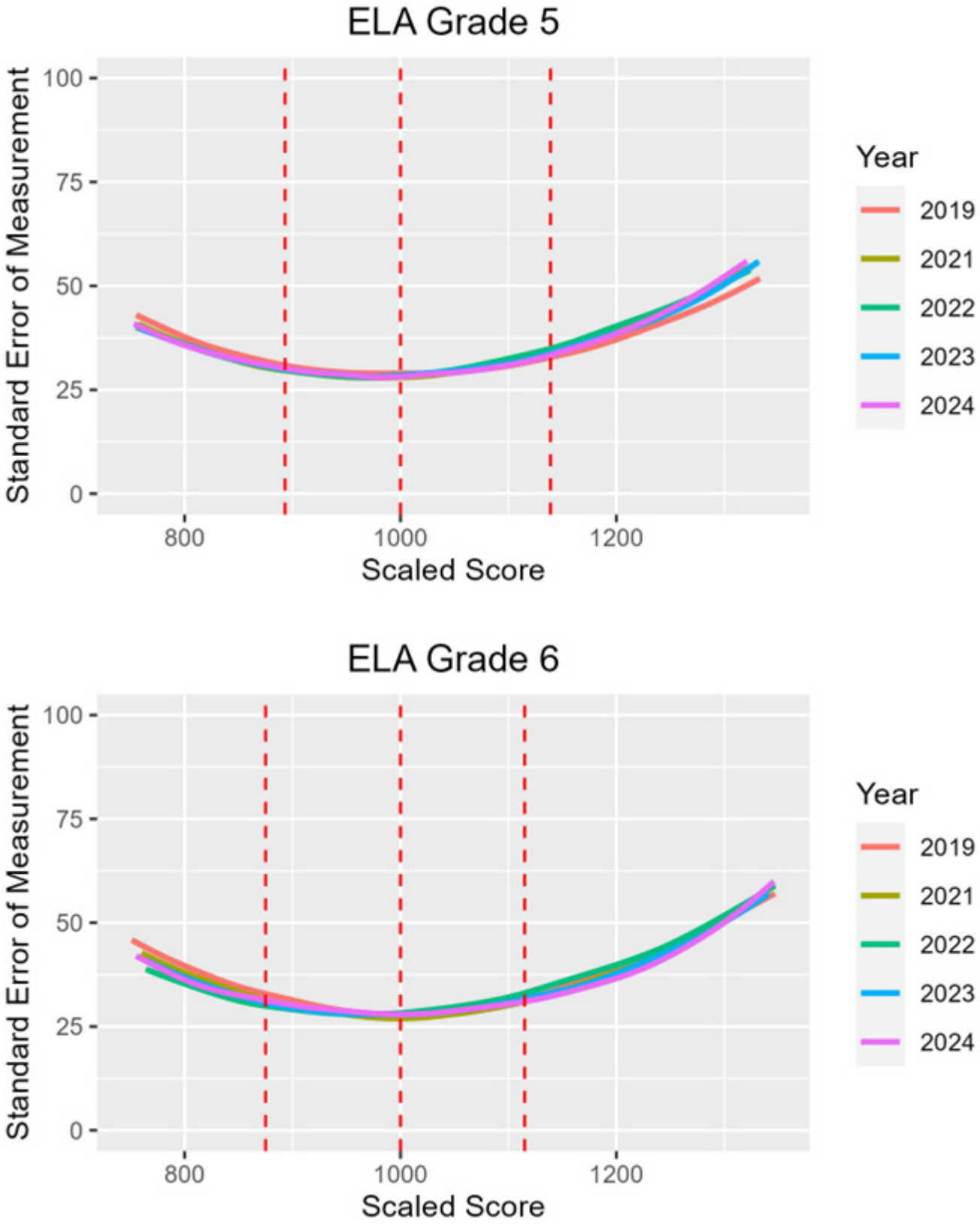


Figure 18–2 (continued). Conditional Standard Error Plots by Subject and Grade

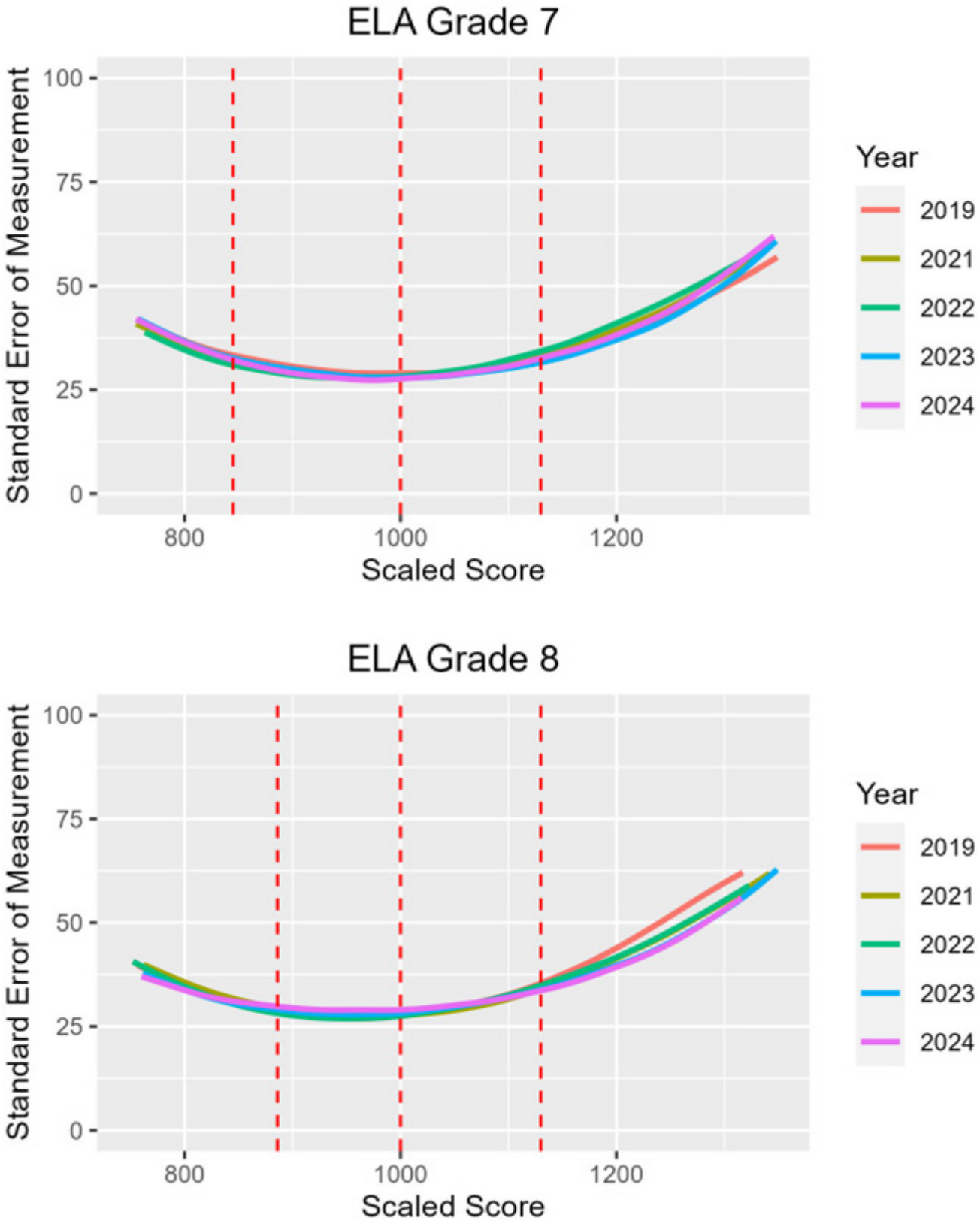
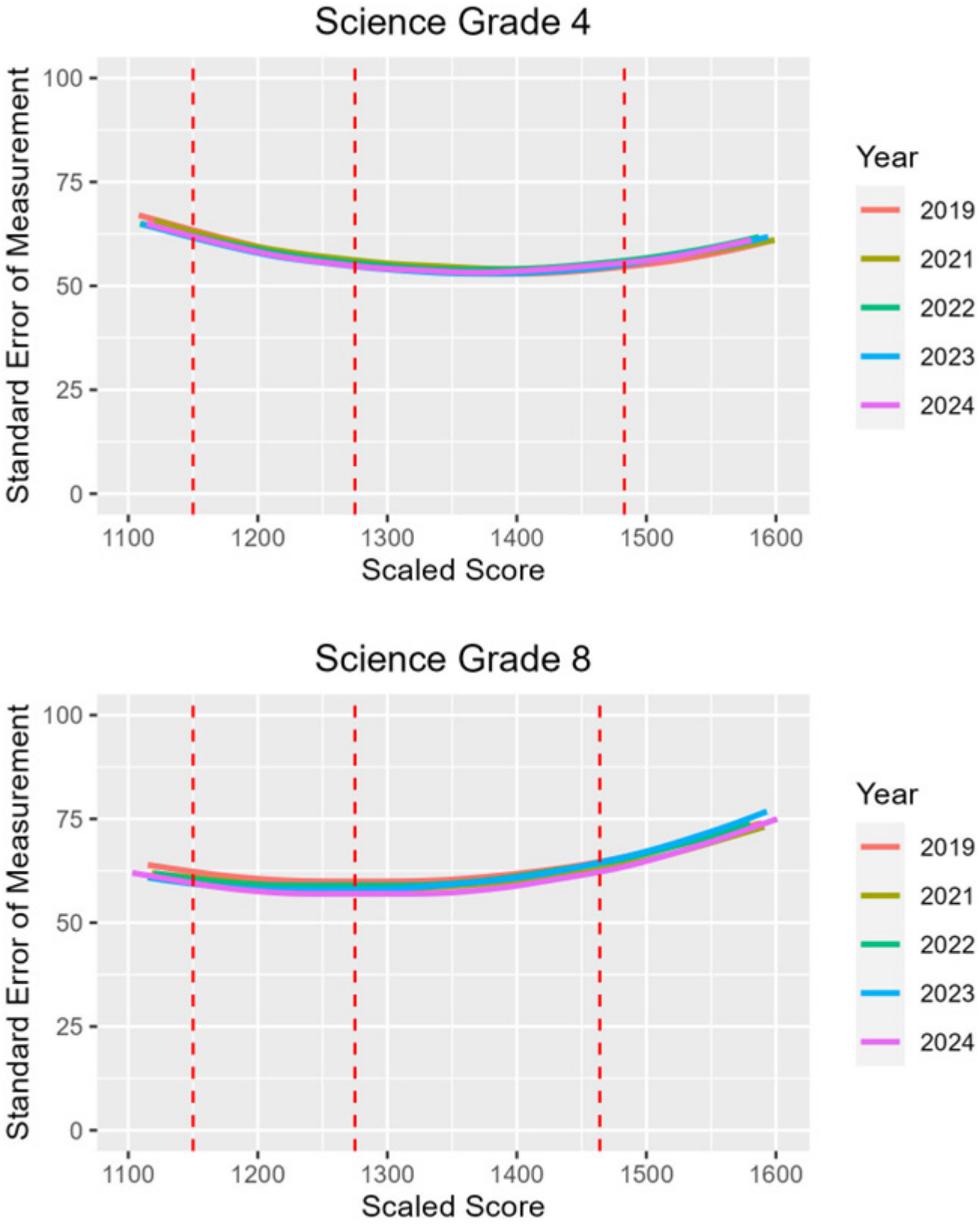


Figure 18–2 (continued). Conditional Standard Error Plots by Subject and Grade



DECISION CONSISTENCY AND ACCURACY

In a standards-based testing program there should be great interest in knowing how accurately students are classified into performance categories. In contrast to Coefficient Alpha that is concerned with the relative rank-ordering of students, it is the absolute values of student scores that are important in decision consistency and accuracy.

Classification consistency refers to the degree to which the achievement level for each student can be replicated upon retesting using an equivalent form (Huynh, 1976). Decision consistency answers the question: What is the agreement between the classifications based on two non-overlapping, equally difficult forms of the test. If two parallel forms of the test were given to the same students, the consistency of the measure would be reflected by the extent that the classification decisions made from the first set of test scores matched the decisions based on the second set of test scores. Consider Tables 18–5 and 18–6 below.

Table 18–5. Pseudo-Decision Table for Two Hypothetical Categories

Tests One and Two	Test One Level I	Test One Level II	Test One Marginal
Test Two Level I	φ11	φ12	φ1●
Test Two Level II	φ21	φ22	φ2●
Test Two Marginal	φ●1	φ●2	1

Table 18–6. Pseudo-Decision Table for Four Hypothetical Categories

Tests One and Two	Test One Level I	Test One Level II	Test One Level III	Test One Level IV	Test One Marginal
Test Two Level I	φ11	φ12	φ13	φ14	φ1●
Test Two Level II	φ21	φ22	φ23	φ24	φ2●
Test Two Level III	φ31	φ32	φ33	φ34	φ3●
Test Two Level IV	φ41	φ42	φ43	φ44	φ4●
Test Two Marginal	φ●1	φ●2	φ●3	φ●4	1

If a student is classified as being in one category based on Test One's score, how probable would it be that the student would be reclassified as being in the same category if he or she took Test Two (a non-overlapping, equally difficult form of the test)?

The proportions of correct decisions, φ, for two and four categories are computed by the following two formulas, respectively:

$$\varphi = \varphi_{11} + \varphi_{22}$$

$$\varphi = \varphi_{11} + \varphi_{22} + \varphi_{33} + \varphi_{44}$$

It is the sum of the diagonal entries—that is, the proportion of students classified by the two forms into the same achievement level—that signifies the overall consistency.

Classification accuracy refers to the agreement of the observed classifications of students with the classifications made based on their true scores. An observed score contains measurement error while a true score is free of measurement error. A student's observed score can be formulated by the sum of his or her true score plus measurement error. Decision accuracy is an index to determine the extent to which measurement error causes a classification different than expected from the true score.

Since true scores are unobserved and since it is not feasible to repeat PSSA testing to estimate the proportion of students who would be reclassified in the same performance levels, a statistical model needs to be imposed on the data to estimate the true scores and to project the consistency and accuracy of classifications solely using data from the available administration (Hambleton & Novick, 1973). Although several procedures are available, one well-known method was developed by Livingston and Lewis (1995) utilizing a specific True Score Model. This approach is fairly complex, and the cited source contains details regarding the statistical model used to calculate decision consistency and accuracy from the single PSSA administration.

FURTHER INTERPRETATIONS

Several factors might affect decision consistency and accuracy. One important factor is the reliability of the scores. All other things being equal, more reliable test scores tend to result in more similar reclassifications and less measurement error. Another factor is the location of the cut score in the score distribution. More consistent and accurate classifications are observed when the cut scores are located away from the mass of the score distribution. For example, when scores are close to being normally distributed, the mass is concentrated in the middle of the distribution, and, thus classifications tend to become more consistent when cut scores go up from 70 percent to 80 percent to 90 percent or, alternatively, go down from 30 percent to 20 percent to 10 percent. The number of performance levels is also a consideration. Consistency and accuracy indices for four performance levels should be lower than those based on two categories. This is not surprising since classification and accuracy using four levels would allow more opportunity to change achievement levels. Hence, there would be more classification errors and less accuracy with four achievement levels, resulting in lower consistency indices.

RESULTS AND OBSERVATIONS

The results for the overall consistency across all four performance levels as well as for the dichotomies created by the three cut scores are presented in Table 18–7. The tabled values were derived using the program *BB-Class* (Brennan, 2004) and applies the Livingston and Lewis (1995) method. Across all subjects and grade levels, the overall decision accuracy ranged from the 0.71 to 0.82 (M = 0.77) while the decision consistency ranged from 0.61 to 0.75 (M = 0.69). It should be noted that the overall consistency and accuracy indices across the four performance levels should be lower than those based on two categories (discussed above). Dichotomous decisions at the proficient cut had accuracy values that range from 0.88 to 0.94 (M = 0.91) and consistency values that range from 0.83 to 0.92 (M = 0.88).

Table 18–7. Decision Consistency and Accuracy Results

Subject	Grade	Statistic	Overall	Bel. Basic/ Basic	Basic/ Proficient	Proficient/ Advanced
Mathematics	3	accuracy	0.79	0.93	0.92	0.94
Mathematics	3	consistency	0.71	0.90	0.89	0.91
Mathematics	4	accuracy	0.79	0.92	0.93	0.94
Mathematics	4	consistency	0.71	0.89	0.89	0.91
Mathematics	5	accuracy	0.79	0.92	0.92	0.95
Mathematics	5	consistency	0.70	0.88	0.89	0.93
Mathematics	6	accuracy	0.81	0.92	0.94	0.95
Mathematics	6	consistency	0.73	0.88	0.91	0.94
Mathematics	7	accuracy	0.81	0.92	0.93	0.96
Mathematics	7	consistency	0.73	0.88	0.91	0.94
Mathematics	8	accuracy	0.82	0.92	0.94	0.97
Mathematics	8	consistency	0.75	0.88	0.92	0.95
ELA	3	accuracy	0.77	0.92	0.90	0.94
ELA	3	consistency	0.68	0.89	0.86	0.92
ELA	4	accuracy	0.71	0.92	0.89	0.90
ELA	4	consistency	0.61	0.88	0.85	0.87
ELA	5	accuracy	0.74	0.92	0.89	0.92
ELA	5	consistency	0.64	0.89	0.85	0.90
ELA	6	accuracy	0.75	0.94	0.88	0.92
ELA	6	consistency	0.65	0.92	0.83	0.89
ELA	7	accuracy	0.76	0.95	0.90	0.91
ELA	7	consistency	0.67	0.93	0.86	0.88
ELA	8	accuracy	0.73	0.93	0.89	0.92
ELA	8	consistency	0.63	0.90	0.84	0.89
Science	4	accuracy	0.79	0.96	0.92	0.90
Science	4	consistency	0.71	0.95	0.89	0.87
Science	8	accuracy	0.78	0.92	0.92	0.93
Science	8	consistency	0.69	0.89	0.89	0.90

Note. Results derived using PSSA final data file (see Chapter Nine).

RATER AGREEMENT

Because open-ended items are included on the PSSAs, another source of random error is related to the scorers of those items. Frisbie (2005) noted that "test score reliability differs from scorer reliability" and that "the need for one kind of estimate cannot be satisfied by the other." Additionally, the data most easily obtainable that captures this information comes from the "10 percent read behinds" collected during the scoring process (see Chapter Eight for a description). Partly because of the way that this data is obtained and reported (i.e., it is not a ratio of true score variance over observed score variance), the term rater agreement or inter-rater agreement are used here, rather than rater reliability or inter-rater reliability as these terms are somewhat misleading as explained above.

FURTHER INTERPRETATIONS

For the PSSAs, both within-year and across-year rater consistency are available. As part of the data collected for that process, additional across-year rater consistency data is available for consideration.

RESULTS AND OBSERVATIONS

Within-year rater agreement information is provided in Chapter Eight. This information is reformatted in Tables 18–8 through 18–10 for PSSA mathematics, ELA, and science OE items, respectively. In addition, the percentages awarded to each score point are also presented in these tables. As seen from these tables, the inter-rater exact agreement percentages range from 78 percent to 92 percent for mathematics, 79 percent to 90 percent for ELA, and 80 percent to 95 percent for science. Mathematics had validity ranging from 82 percent to 95 percent; ELA had validity ranging from 86 percent to 93 percent; and science had validity ranging from 73 percent to 96 percent. (Validity in terms of scoring practices is discussed further in Chapter Eight.)

Table 18–8a. Inter-Rater Agreement for OE Items—Mathematics

Grade	Item	Percent Exact	Percent Adjacent	Validity
3	1	92	8	95
3	2	92	8	91
3	3	79	21	87
4	1	83	17	93
4	2	88	12	93
4	3	85	15	92
5	1	87	13	95
5	2	84	16	92
5	3	83	17	82
6	1	86	14	93
6	2	88	12	94
6	3	78	21	85
7	1	82	18	88
7	2	92	8	94
7	3	82	18	83
8	1	90	10	91
8	2	88	12	92
8	3	89	11	86

Note. For more information regarding validity, see the section on Handscoring Validity Process in Chapter Eight.

Table 18–8b. Percentage Awarded for Each Score Point for OE Items—Mathematics

Grade	Item	0	1	2	3	4	Blank or non-scoreable
3	1	9	18	27	36	7	3
3	2	23	24	20	19	12	4
3	3	11	20	26	26	13	4
4	1	20	24	22	23	7	3
4	2	24	38	17	12	4	4
4	3	19	25	24	19	7	6
5	1	17	20	19	21	19	4
5	2	22	33	22	10	7	5
5	3	16	22	21	21	17	3
6	1	12	27	33	18	5	4
6	2	30	35	16	9	4	6
6	3	23	24	18	17	13	5
7	1	27	15	19	24	9	6
7	2	38	29	15	9	3	7
7	3	26	29	23	11	4	7
8	1	12	33	32	4	13	6
8	2	41	18	11	12	6	11
8	3	34	20	15	14	9	7

Table 18–9a. Inter-Rater Agreement for OE Items—ELA

Grade	Item	Item Type	Percent Exact	Percent Adjacent	Validity
3	1	SA	84	16	87
3	2	SA	79	20	86
4	1	TDA	90	10	93
5	1	TDA	84	16	91
6	1	TDA	86	14	91
7	1	TDA	86	14	86
8	1	TDA	83	17	91

Note. EBSR items are machine scored because they are two-part MC like items and not shown in this table. For more information regarding validity, see the section on Handscoring Validity Process in Chapter Eight.

Table 18–9b. Percentage Awarded for Each Score Point for OE Items—ELA

Grade	Item	Item Type	0	1	2	3	4	Blank or non-scoreable
3	1	SA	12	45	28	5	NA	11
3	2	SA	23	32	29	6	NA	10
4	1	TDA	NA	31	32	13	2	22
5	1	TDA	NA	20	41	22	2	14
6	1	TDA	NA	14	51	19	3	11
7	1	TDA	NA	25	41	18	3	12
8	1	TDA	NA	13	42	27	6	11

Note. EBSR items are machine scored because they are two-part MC like items and not shown in this table.

Table 18–10a. Inter-Rater Agreement for OE Items—Science

Grade	Item	Percent Exact	Percent Adjacent	Validity
4	1	92	8	96
4	2	88	12	90
4	3	90	10	95
4	4	94	6	94
4	5	80	20	73
8	1	82	17	78
8	2	90	10	94
8	3	95	5	89
8	4	89	11	93
8	5	92	8	89

Note. For more information regarding validity, see the section on Handscoring Validity Process in Chapter Eight.

Table 18–10b. Percentage Awarded for Each Score Point for OE Items—Science

Grade	Item	0	1	2	Blank or non-scoreable
4	1	16	29	50	4
4	2	17	60	17	5
4	3	16	34	45	6
4	4	15	34	46	5
4	5	27	41	24	8
8	1	38	36	17	9
8	2	40	33	17	10
8	3	49	22	16	14
8	4	15	28	46	11
8	5	27	33	30	9

CHAPTER NINETEEN: VALIDITY

As defined in the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 2014), validity refers to "the degree to which evidence and theory support the interpretation of test scores entailed by proposed uses of tests" (p. 11). The *Standards* provides a framework for describing the sources of evidence that should be considered when evaluating validity. These sources include evidence based on 1) test content, 2) response processes, 3) the internal structure of the test, 4) the relationships between test scores and other variables, and 5) the consequences of testing. In addition, when Item Response Theory (IRT) models are used to analyze assessment data, validity considerations related to those processes should also be explored.

The validity process involves the collection of evidence from a variety of sources to support the proposed test score interpretations and uses. This technical report describes throughout, the technical aspects of the PSSA tests in support of their score interpretations and uses. Each of the previous chapters contributes important evidence components that pertain to score validation: test development, test administration, test scoring, item analysis, Rasch calibration, scaling, linking, score reporting, and reliability. This chapter summarizes and synthesizes the evidence based on the *Standards'* framework. The purposes and intended uses of PSSA test scores are reviewed first, then each type of validity evidence is addressed in turn.

PURPOSES AND INTENDED USES OF THE PSSA

The *Standards* emphasize that validity pertains to how test scores are used. To help contextualize the evidence that will be presented below, the purposes of the PSSA will be reviewed first. As stated in Chapter One, the purpose of the PSSA is to measure how well students acquire the knowledge and skills described in the *Pennsylvania Assessment Anchor Content Standards* (Assessment Anchors) as defined by the Eligible Content for mathematics, ELA, and Science. The intended uses of the PSSA are to:

1. Provide information for use in school and district accountability systems
2. Improve curricular and instructional practices to help students reach proficiency in the Pennsylvania Core Standards (ELA and Mathematics) or the Pennsylvania Academic Standards (Science)

TEST LENGTH REDUCTION

The Pennsylvania Department of Education (PDE) established new, reduced length PSSA test designs in 2017 for administration beginning in 2018. The PSSA test length reductions were designed to reduce PSSA testing burdens while maintaining rigor in test reliabilities, and test score validity arguments. The approved test design changes can be briefly summarized as:

- Mathematics
  - Proportional reduction of each reporting category
  - Grades 3–8: 72 to 52 total raw score points
- ELA
  - Removed writing prompt and selection of standalone multiple-choice language items
  - Grade 3: 62 to 45 total raw score points (weighted)
  - Grades 4–8: 84 to 63 total raw score points (weighted)
- Science
  - Proportional reduction of each reporting category
  - Grades 4 and 8: 68 to 48 total raw score points

The PSSA tests have been consistently constructed with attention to balancing content and statistical requirements to optimize test score reliability and validity. This remained true during construction of the reduced length tests. Although test reliability is influenced by test length (Spearman & Brown, 1910), the use of high-quality items, with strong statistical features, can facilitate the production of reliable assessments under different test length scenarios. As discussed in Chapter Eighteen, reliability results for the shortened tests continued to show strong internal consistency of scores.

As there was a change to the test blueprint for ELA beyond a proportional reduction of the content, caution was used to ensure that the original 2015 standards appropriately defined performance on the reduced length ELA tests. Consequently, a standards validation was conducted in June of 2018 prior to formally reporting ELA scores. The purpose of the standards validation was to consider if the 2015 cut scores continued to reflect appropriate distinctions in performance on the ELA tests, given the removal of the writing prompt and nine language items. Pennsylvania educators participated in a four-day workshop to review the new tests and applied a modified Bookmark standard setting procedure. Results of the standards validation confirmed that the existing standards still appropriately classify examinee performance into the four levels of Below Basic, Basic, Proficient, and Advance. For example, a score of 1000 was determined to appropriately separate examinee performance on the ELA tests between the Below Basic and Proficient levels. The same was true for each of the remaining cut scores for grades 3 through 8, Below Basic and Advanced. Please refer to the Pennsylvania System of School Assessment Grades 3–8 English Language Arts Standards Validation 2018 Final Technical Report for full details regarding the standards validation design, implementation, committee review, and final results.

Beyond standards validation, the provision of ongoing of validity evidence will continue to be a central feature in the PSSA technical documentation. This chapter proceeds with a discussion of five sources of validity evidence for the PSSA, including studies that were conducted to evaluate the PSSAs for evidence of any shifts in the ELA construct related to the test design modification for ELA, i.e. removal of the writing prompt and nine language items.

EVIDENCE BASED ON TEST CONTENT

Test content validity evidence for the PSSA rests greatly on establishing a link between each component of the assessment (i.e., the items) and what the students should know and be able to do as required by the Assessment Anchors, Eligible Content, and/or the Academic Content Standards (refer to Chapter Two for a description of each of these elements). The PSSA tests are intended to measure students' knowledge and skills described in the Assessment Anchors as defined by the Eligible Content for mathematics, ELA, and science. Thus, the evidence supporting the alignment among the PSSA tasks, the Assessment Anchors as defined by the Eligible Content and the Academic Content Standards should be provided.

Lane (1999) suggests taking the following steps to support the content validity of tests:

- Evaluate the degree to which the test specifications represent and align with the knowledge and skills described in the Assessment Anchors as defined by the Eligible Content for mathematics, ELA, and science.
- Evaluate the alignment between the test items and test specifications to ensure representativeness.
- Evaluate the extent to which the curriculum aligns with the Assessment Anchors. If some contents are not included in the curriculum, then low scores on the test should not be interpreted as meaning that instruction was ineffective.
- Conduct content reviews of the test items using a panel of content experts to see whether they measure the intended construct or are the sources of construct-irrelevant variance.
- Conduct fairness reviews of the items to avoid issues related to a specific subpopulation.
- Evaluate procedures for administration and scoring, such as the appropriateness of instructions to examinees, time limit for the assessment, and training of raters.
- Submit operational tests to third-party, independent reviews.

Chapters Two through Eight of this report present evidence related to test content. As described in these chapters, all PSSA test blueprints (specifications) and items were developed and aligned with the PSSA Assessment Anchors and Eligible Content for mathematics, ELA, and science, consistently following well-established procedures. After the items were developed, they underwent multiple rounds of content and bias reviews. After they were field tested, they were reviewed with respect to their statistical properties. Items selected for the operational assessment had to pass content, psychometric, and PDE reviews. Tests were administered according to standardized procedures with allowable accommodations. The following summarizes the efforts described in greater detail in Chapters Two through Eight:

- DRC used Webb's (1999) Depth of Knowledge (DOK) model to ensure the PSSA items aligned with the Assessment Anchors as defined by the Eligible Content and the Academic Content Standards in terms of both content and cognitive levels.
- DRC established detailed test and item/passage development specifications and ensured the items were sufficient in number and adequately distributed across content and levels of cognitive complexity and difficulty.
- DRC selected qualified item writers and provided training to help ensure they wrote high-quality items.
- Each newly developed item was first reviewed by content specialists and editors at DRC to make sure that all items measured the intended Assessment Anchors, as defined by the Eligible Content for Mathematics, ELA, and Science. Appropriateness for the intended grade was also considered, as well as depth of knowledge, graphics, grammar/punctuation, language demand, and distractor reasonableness.
- Before field testing, the test items were submitted to content committees (composed of Pennsylvania educators) for review using, but not limited to, the following categories:
    - Overall quality and clarity
    - Anchor, eligible content, and/or standard alignment
    - Grade-level appropriateness
    - Difficulty level
    - Depth of knowledge
    - Appropriate sources of challenge (e.g., unintended content and skills)
    - Correct answer
    - Quality of distractors
    - Graphics
    - Appropriate language demand
    - Freedom from bias
- The items were also submitted to a Bias, Fairness, and Sensitivity Committee for review. This committee reviewed items for issues related to diversity, gender, and other pertinent factors.
- Items passing all the prior hurdles were tried out in a field-test event. Several statistical analyses were conducted on the field-test data, including classical item analyses, distractor analyses, and differential item functioning (DIF). Items were once again carefully reviewed by DRC staff and a committee of Pennsylvania teachers with respect to their statistical characteristics. DIF was used to detect test items that might bias test scores for subgroups. Empirical investigation of DIF strengthens the validity evidence related to score interpretations for student groups by eliminating potential sources of construct-irrelevant variance as such, DIF results might be better considered as internal structure validity evidence.

- The PSSA tests were administered according to standardized procedures with allowable accommodations and recommended testing times.
- As shown in Chapter Eight, the raters for open-ended (OE) items were carefully recruited and well trained. Their scoring was monitored throughout the scoring session to ensure that an acceptable level of scoring accuracy was maintained.

In addition to the foundational and routine procedures described above and in Chapters Two through Five, and summarized in Appendix C, two external studies were conducted to assess the alignment of the PSSA tests to the PSSA Assessment Anchors and Eligible Content. Achieve, Inc., Washington, D.C., conducted a preliminary review of the science Assessment Anchors in 2003 to evaluate the alignment with the Academic Standards and produced a follow-up report on the anchors in 2005.

EVIDENCE BASED ON RESPONSE PROCESSES

Response-process evidence is used to examine the extent to which the cognitive skills and processes employed by students match that identified in the test developer's defined construct domains for all students and for each subgroup. Think-aloud procedures or cognitive labs can be used to collect this type of evidence. In addition, when an assessment includes OE items, an examination of the extent to which the raters interpret and apply the scoring criteria accurately when assigning scores to students' responses on OE items also provides validity of the response-processes evidence.

For the PSSA science tests, DRC conducted a science cognitive lab study to gather relative information about the thinking processes students used to solve science scenario items. The use of the cognitive lab helped ensure that the intended response processes were employed by students.

For all the PSSA tests, well-organized scorer training and subsequent monitoring of rating accuracy helped ensure that raters strictly followed the scoring criteria to minimize rater biases that may affect their scoring. Refer to Chapter Eight for a detailed description of all hand-scoring procedures, and to Chapter Eighteen for statistical information regarding inter-rater reliability.

EVIDENCE BASED ON INTERNAL STRUCTURE

As described in the *Standards* (2014), internal-structure evidence refers to the degree to which the relationships between test items and test components conform to the construct on which the proposed test interpretations are based. For each PSSA test, one total test score as well as strand scores are reported (see Chapter Sixteen for more information about PSSA scores). Additionally, principal component and parallel analyses were conducted and provide strong internal-structure evidence of the unidimensionality of the PSSAs.

ITEM DIFFICULTY RANGES AND DISCRIMINATION

Multiple sources of evidence are provided that address the appropriateness of the range of difficulty and discrimination of the items on the PSSA tests. Plots of item *p*-values by point biserial correlations are provided in Chapter Eleven, and summary statistics are provided for IRT item difficulty parameters in Chapter Twelve.

ITEM RESPONSE THEORY DIMENSIONALITY

Results from principal component and parallel analyses were presented in Chapter Twelve. The PSSA mathematics, ELA and science tests are shown through a principal components analysis to be strongly unidimensional, providing evidence that the tests are measuring a single construct without undue irrelevant variance.

A confirmatory factor analysis was also applied to the 2017 original length and 2024 reduced length test data to assess the degree to which the intended construct for each test explains performance on the operational test items. Specifically, significant factor loadings, consistency of standardized variances of the unique factor scores, and model fit were examined across the CFA models for the original and reduced length tests, for each PSSA test.

Using *Mplus* (Muthén & Muthén, 1998–2012) a single factor model was specified for the original and reduced length tests, for each PSSA test as:

$$y_i = \tau + \Lambda\eta_i + \varepsilon_i$$

where y_2 is the outcome vector, t is the intercept vector, Λ is the factor loading matrix, η_i is the common factor score, and represents the unique factor scores. For each model, the factor variance was fixed to 1.0 for model identification purposes. As the indicators in these models are ordered categorical variables and likely violate the assumption of multivariate normality required for maximum likelihood estimation, the models were fit using robust weighted least squares estimation. Model fit was evaluated for each model using adjusted Chi-Square tests of fit (Satorra & Bentler, 1994; Asparouhov & Muthén, 2010), Root Mean Square Error of Approximation (RMSEA), and the comparative fit index (CFI). RMSEA values below 0.06 and CFI values of 0.90 and above were considered to represent good fit (Hu & Bentler, 1999).

The Chi-square test of fit results for the CFAs show that, for all tests, the model does not fit perfectly in the population with *p*-values < 0.000. MacCallum (2001) notes that this is often the finding with larger sample sizes. Consistent with results from the shortened test in 2018 and 2019 the RMSEA results indicate good fit for the 2024 PSSA with values ranging between 0.015 and 0.025 for the original length tests in 2017 and between 0.016 and 0.031 for the reduced length tests in 2024. The CFI results also show good fit with values ranging from 0.926 to 0.972 for the original length tests in 2017 and from 0.966 to 0.99 for the reduced length tests in 2024. Table 19–1 provide a summary of the CFA results for the 2024PSSA.

Note that as the models are not nested, a direct statistical comparison of model fit would not be informative. Procedures that allows for the comparison of non-nested models such as Akaike's Information Criterion (AIC; Akaike, 1973) and the Bayesian Information Criterion (BIC; Schwarz, 1978) are designed primarily for model selection purposes, so are less useful here where the model has been chosen based on based on criteria external to the test.

Overall, the factor analysis results suggest that a single factor (the ELA construct as detailed in Chapter Two) is explaining the variance in responses well for both the 2017 and 2024 (Table 19–1) reduced length tests, supporting an overall conclusion of construct stability between the original and reduced length tests.

Table 19–1. CFA Model Fit for Reduced Length PSSAs – 2024

Subject	Grade	N Items	N	RMSEA	CFI	Chi-Square DF	Chi-Square Adj. *P*-Value
Mathematics	3	43	112845	0.026	0.979	860	<.0000
Mathematics	4	43	116862	0.028	0.976	860	<.0000
Mathematics	5	43	116834	0.031	0.966	860	<.0000
Mathematics	6	43	116358	0.025	0.981	860	<.0000
Mathematics	7	43	117279	0.028	0.976	860	<.0000
Mathematics	8	43	116468	0.024	0.98	860	<.0000
ELA	3	35	112499	0.02	0.985	560	<.0000
ELA	4	39	116411	0.019	0.987	702	<.0000
ELA	5	39	116698	0.021	0.982	702	<.0000
ELA	6	39	116426	0.019	0.983	702	<.0000
ELA	7	39	117431	0.021	0.984	702	<.0000
ELA	8	39	116655	0.022	0.982	702	<.0000
Science	4	43	116630	0.022	0.975	860	<.0000
Science	8	43	116048	0.016	0.99	860	<.0000

EVIDENCE RELATED TO THE USE OF THE RASCH MODEL

Since the Rasch model is the basis of all calibration, scaling, and linking analyses associated with the PSSA, the validity of the inferences from these results depends on the degree to which the assumptions of the model are met as well as the fit between the model and test data. As discussed at length in Chapter Twelve, the underlying assumptions of Rasch models were essentially met for all the PSSA data, indicating the appropriateness of using the Rasch models to analyze the PSSA data.

In addition, the Rasch model was also used to link science operational PSSA tests across years. The accuracy of the linking also affects the accuracy of student scores and the validity of score uses. As described in Chapter Fifteen, DRC Psychometric Services staff utilize a linking procedure previously vetted by the Pennsylvania National TAC. Moreover, DRC internal replication and review ensured the accuracy of the linking and equating results.

TEST RELIABILITY, ERRORS OF MEASUREMENT, AND DECISION CONSISTENCY AND ACCURACY

Reliability estimates, SEM, and decision consistency and accuracy results are presented in Chapter Eighteen and provide important evidence that the PSSA tests have strong internal consistency, expected measurement errors, and that examinees are being appropriately classified into performance levels based on the test scores and standards set on those scores.

STRAND CORRELATIONS

Correlations and disattenuated correlations between strand scores within each subject area are presented below. Values were computed using the PSSA final data file (see Chapter Nine). This data can also provide information on score dimensionality that is part of internal-structure validity evidence. As noted in Chapter Two, the PSSA mathematics tests have four strands (denoted by M.A, M.B, M.C, and M.D). The PSSA ELA tests have four strands (denoted by E.A, E.B, E.D, and E.E), except grade 3 which has three strands (E.A, E.B, and E.D). The PSSA science tests have four strands (denoted by S.A, S.B, S.C, and S.D).

For each grade, Pearson's correlation coefficients between these strands are reported in Tables 19–2a through 19–2f. The inter-correlations between the strands within the content areas are positive and generally range from moderate to high in value, and correlations between strands across content areas are generally slightly lower, providing contrasting evidence of convergent and discriminant validity.

Table 19–2a. Correlations between Mathematics and ELA Strands for Grade 3

	M.A	M.B	M.C	M.D	E.A	E.B	E.D
M.A	-						
M.B	0.81	-					
M.C	0.68	0.69	-				
M.D	0.79	0.80	0.67	-			
E.A	0.65	0.68	0.61	0.64	-		
E.B	0.66	0.69	0.62	0.65	0.76	-	
E.D	0.62	0.63	0.58	0.60	0.64	0.65	-

Table 19–2b. Correlations between Mathematics, ELA, and Science Strands for Grade 4

	M.A	M.B	M.C	M.D	E.A	E.B	E.D	E.E	S.A	S.B	S.C	S.D
M.A	-											
M.B	0.80	-										
M.C	0.68	0.67	-									
M.D	0.77	0.74	0.65	-								
E.A	0.65	0.67	0.57	0.60	-							
E.B	0.68	0.69	0.60	0.63	0.75	-						
E.D	0.66	0.67	0.60	0.62	0.66	0.68	-					
E.E	0.58	0.59	0.52	0.54	0.58	0.60	0.57	-				
S.A	0.74	0.75	0.65	0.69	0.72	0.74	0.69	0.60	-			
S.B	0.54	0.54	0.49	0.52	0.52	0.55	0.52	0.44	0.63	-		
S.C	0.62	0.63	0.56	0.59	0.60	0.62	0.58	0.51	0.70	0.54	-	
S.D	0.57	0.58	0.52	0.55	0.56	0.58	0.54	0.47	0.66	0.51	0.56	-

Table 19–2c. Correlations between Mathematics and ELA Strands for Grade 5

	M.A	M.B	M.C	M.D	E.A	E.B	E.D	E.E
M.A	-							
M.B	0.75	-						
M.C	0.66	0.58	-					
M.D	0.80	0.69	0.63	-				
E.A	0.69	0.62	0.57	0.66	-			
E.B	0.70	0.63	0.57	0.67	0.76	-		
E.D	0.61	0.55	0.50	0.58	0.62	0.60	-	
E.E	0.58	0.52	0.47	0.56	0.61	0.57	0.48	-

Table 19–2d. Correlations between Mathematics and ELA Strands for Grade 6

	M.A	M.B	M.C	M.D	E.A	E.B	E.D	E.E
M.A	-							
M.B	0.82	-						
M.C	0.74	0.74	-					
M.D	0.72	0.71	0.66	-				
E.A	0.67	0.66	0.56	0.58	-			
E.B	0.70	0.69	0.59	0.60	0.75	-		
E.D	0.58	0.57	0.49	0.50	0.58	0.59	-	
E.E	0.55	0.53	0.48	0.47	0.52	0.54	0.45	-

Table 19–2e. Correlations between Mathematics and ELA Strands for Grade 7

	M.A	M.B	M.C	M.D	E.A	E.B	E.D	E.E
M.A	-							
M.B	0.82	-						
M.C	0.72	0.70	-					
M.D	0.77	0.74	0.66	-				
E.A	0.67	0.64	0.56	0.65	-			
E.B	0.72	0.69	0.61	0.69	0.78	-		
E.D	0.57	0.55	0.49	0.55	0.59	0.60	-	
E.E	0.59	0.54	0.50	0.56	0.59	0.59	0.48	-

Table 19–2f. Correlations between Mathematics, ELA, and Science Strands for Grade 8

	M.A	M.B	M.C	M.D	E.A	E.B	E.D	E.E	S.A	S.B	S.C	S.D
M.A	-											
M.B	0.76	-										
M.C	0.69	0.75	-									
M.D	0.69	0.79	0.68	-								
E.A	0.60	0.65	0.58	0.63	-							
E.B	0.59	0.66	0.59	0.63	0.74	-						
E.D	0.55	0.60	0.53	0.58	0.63	0.61	-					
E.E	0.51	0.53	0.49	0.51	0.59	0.53	0.49	-				
S.A	0.67	0.75	0.67	0.73	0.74	0.74	0.63	0.55	-			
S.B	0.58	0.65	0.58	0.63	0.66	0.65	0.57	0.50	0.76	-		
S.C	0.54	0.62	0.54	0.59	0.55	0.57	0.49	0.39	0.68	0.59	-	
S.D	0.53	0.61	0.54	0.58	0.57	0.58	0.51	0.41	0.69	0.62	0.57	-

The correlations in Tables 19–2a through 19–2f are based on the observed strand scores. These observed-score correlations are weakened by the existing measurement error contained within each strand. As a result, disattenuating the observed correlations can provide an estimate of the relationships between strands if there were no measurement error. (An important caveat is provided further below.) The disattenuated correlation coefficients (R_{xy}) can be computed by using the formula (Spearman 1904, 1910) below:

$$R_{xy} = \frac{r_{xy}}{\sqrt{r_{xx}\, r_{yy}}},$$

where r_{xy} is the observed correlation, and r_{xx} and r_{yy} are the reliabilities for strand X and strand Y. Disattenuated correlations very near 1.00 might suggest that the same or very similar constructs are being measured. Values somewhat less than 1.00 might suggest that different strands are measuring slightly different aspects of the same construct. Values markedly less than 1.00 might suggest the strands reflect different constructs.

Tables 19–3a through 19–3f show the corresponding disattenuated correlations for the 2024 PSSA tests for each grade. Note that with ELA, text-dependent analysis (TDA) items belong to a separate strand and is the only item for the strand. Given that this strand (E.E) has only one item, reliability cannot be computed. Therefore, disattenuated correlation cannot be computed with these strands and is not included in Table 19–3. Where reliability can be computed, the disattenuated strand correlations are higher than their observed score counterparts, given that strand scores do not have perfect reliabilities (see Chapter Eighteen).

Some within-subject correlations are very high (e.g., above 0.95), suggesting that the within-subject strands appear to be measuring essentially the same construct. This, in turn, suggests that some strand scores might not provide entirely unique information about the strengths or weaknesses of students.

Table 19–3a. Disattenuated Strand Correlations for Mathematics and ELA for Grade 3

	M.A	M.B	M.C	M.D	E.A	E.B	E.D
M.A	-						
M.B	1.04	-					
M.C	1.12	1.12	-				
M.D	1.03	1.03	1.10	-			
E.A	0.85	0.88	1.02	0.84	-		
E.B	0.87	0.91	1.04	0.86	1.02	-	
E.D	0.90	0.91	1.06	0.88	0.94	0.96	-

Table 19–3b. Disattenuated Strand Correlations for Mathematics and ELA for Grade 4

	M.A	M.B	M.C	M.D	E.A	E.B	E.D	S.A	S.B	S.C	S.D
M.A	-										
M.B	1.01	-									
M.C	1.03	1.08	-								
M.D	1.01	1.03	1.10	-							
E.A	0.82	0.90	0.93	0.85	-						
E.B	0.85	0.92	0.96	0.88	1.00	-					
E.D	0.85	0.92	0.99	0.89	0.92	0.93	-				
S.A	0.89	0.96	1.00	0.93	0.92	0.94	0.91	-			
S.B	0.84	0.89	0.97	0.90	0.87	0.89	0.88	0.99	-		
S.C	0.88	0.94	1.01	0.94	0.91	0.93	0.90	1.01	1.00	-	
S.D	0.87	0.94	1.01	0.94	0.91	0.93	0.90	1.01	1.02	1.02	-

Table 19–3c. Disattenuated Strand Correlations for Mathematics and ELA for Grade 5

	M.A	M.B	M.C	M.D	E.A	E.B	E.D
M.A	-						
M.B	1.14	-					
M.C	0.97	1.13	-				
M.D	1.06	1.22	1.05	-			
E.A	0.83	0.99	0.86	0.91	-		
E.B	0.88	1.04	0.91	0.96	0.98	-	
E.D	0.85	1.01	0.87	0.92	0.88	0.90	-

Table 19–3d. Disattenuated Strand Correlations for Mathematics and ELA for Grade 6

	M.A	M.B	M.C	M.D	E.A	E.B	E.D
M.A	-						
M.B	1.02	-					
M.C	0.94	0.96	-				
M.D	1.03	1.02	0.97	-			
E.A	0.85	0.86	0.74	0.85	-		
E.B	0.89	0.89	0.78	0.88	0.99	-	
E.D	0.88	0.88	0.77	0.88	0.92	0.93	-

Table19–3e. Disattenuated Strand Correlations for Mathematics and ELA for Grade 7

	M.A	M.B	M.C	M.D	E.A	E.B	E.D
M.A	-						
M.B	1.04	-					
M.C	0.98	0.98	-				
M.D	1.07	1.08	1.01	-			
E.A	0.82	0.81	0.75	0.91	-		
E.B	0.90	0.90	0.83	0.98	0.97	-	
E.D	0.86	0.85	0.82	0.94	0.89	0.91	-

Table 19–3f. Disattenuated Strand Correlations for Mathematics, ELA, and Science for Grade 8

	M.A	M.B	M.C	M.D	E.A	E.B	E.D	S.A	S.B	S.C	S.D
M.A	-										
M.B	1.09	-									
M.C	1.08	0.97	-								
M.D	1.20	1.12	1.07	-							
E.A	0.89	0.80	0.78	0.94	-						
E.B	0.91	0.84	0.81	0.97	0.98	-					
E.D	0.94	0.85	0.82	0.99	0.93	0.93	-				
S.A	0.96	0.89	0.86	1.04	0.91	0.93	0.90	-			
S.B	0.94	0.85	0.84	1.00	0.91	0.93	0.91	1.00	-		
S.C	0.94	0.89	0.85	1.02	0.82	0.87	0.84	0.97	0.94	-	
S.D	0.93	0.88	0.85	1.02	0.86	0.90	0.87	0.99	1.00	0.99	-

Some caution is needed in interpreting the disattenuated results because the reliabilities used to calculate the disattenuated correlations are subject to both upward and downward biases. (These are also discussed in some detail in Chapter Eighteen.) Consequently, some of the values tabled above may be higher or lower than they should be, depending on which bias prevails for any given pair of strand scores. When the reliabilities are lower than they should be, the disattenuated correlations will be inflated (and in some instances, can appear larger than the theoretical correlation maximum value of 1.00).

EVIDENCE BASED ON RELATIONSHIPS WITH OTHER VARIABLES

As described in the *Standards* (2014), "Evidence based on relationships with other variables provides evidence about the degree to which relationships are consistent with the construct underlying the proposed test score interpretations" (p. 16). This category of evidence is classified by three types—convergent, discriminant, and criterion-related evidence. Convergent evidence is provided by relationships between students' performance on different assessments intended to measure a similar construct. Discriminant evidence is provided by relationships between students' performance on different tests intended to measure different constructs. Criterion-related evidence, either predictive or concurrent, is provided by relationships between students' test scores and their performance on a criterion measure (Cronbach, 1971; Messick, 1989).

Evidence of the relationship of the PSSA with other variables for previous PSSA mathematics and reading tests has been examined by HumRRO in a series of independent studies using 2001–2003 PSSA data (Koger, Thacker & Dickinson, 2004; Sinclair & Thacker, 2005; Thacker, Dickinson, & Koger, 2004).

As useful validity studies rely heavily on the technical quality of the criteria measures, the Pennsylvania Classroom Diagnostic Tools (CDT) assessments were used to assess convergent and discriminant validity. The CDT is a well-documented high-quality computer-based series of assessments aligned to the same Assessment Anchors and Eligible Content as the PSSA tests. Table 19–4 shows the correlations between the PSSA and CDT assessments. The within subject correlations are strong, ranging from 0.72 to 0.83. This illustrates a strong positive relationship between the PSSA and the CDT where the subjects are the same or similar. Conversely, the correlations between different content areas in 2024 are noticeably lower, ranging from 0.63 to 0.77. These patterns demonstrate reasonable convergent and discriminant validity of performance on PSSA.

Table 19–4. Correlations among Student Performance on PSSA and CDT

PSSA	CDT	N	R
Mathematics Grade 3	Mathematics - Lower Grades	16261	0.81
Mathematics Grade 3	Reading - Lower Grades	13880	0.72
Mathematics Grade 3	Science - Lower Grades	2185	0.68
Mathematics Grade 3	Writing - Lower Grades	2448	0.71
Mathematics Grade 4	Mathematics - Lower Grades	17599	0.83
Mathematics Grade 4	Reading - Lower Grades	15008	0.73
Mathematics Grade 4	Science - Lower Grades	12427	0.72
Mathematics Grade 4	Writing - Lower Grades	2892	0.69
Mathematics Grade 5	Mathematics - Lower Grades	21059	0.82
Mathematics Grade 5	Reading - Lower Grades	17347	0.73
Mathematics Grade 5	Science - Lower Grades	5294	0.71
Mathematics Grade 5	Writing - Lower Grades	3435	0.68
Mathematics Grade 6	Mathematics	25965	0.83
Mathematics Grade 6	Reading/Literature	21215	0.72
Mathematics Grade 6	Science	12434	0.72
Mathematics Grade 6	Writing/English Comprehension	4250	0.69
Mathematics Grade 7	Mathematics	28107	0.81
Mathematics Grade 7	Reading/Literature	24687	0.70
Mathematics Grade 7	Science	20243	0.69
Mathematics Grade 7	Writing/English Comprehension	6151	0.68
Mathematics Grade 8	Mathematics	23979	0.79
Mathematics Grade 8	Reading/Literature	24499	0.68
Mathematics Grade 8	Science	29475	0.68
Mathematics Grade 8	Writing/English Comprehension	5889	0.63
ELA Grade 3	Mathematics - Lower Grades	16235	0.69
ELA Grade 3	Reading - Lower Grades	13857	0.80
ELA Grade 3	Science - Lower Grades	2188	0.71
ELA Grade 3	Writing - Lower Grades	2447	0.78
ELA Grade 4	Mathematics - Lower Grades	17533	0.74
ELA Grade 4	Reading - Lower Grades	14964	0.81
ELA Grade 4	Science - Lower Grades	12368	0.76
ELA Grade 4	Writing - Lower Grades	2884	0.78
ELA Grade 5	Mathematics - Lower Grades	21040	0.75
ELA Grade 5	Reading - Lower Grades	17324	0.82
ELA Grade 5	Science - Lower Grades	5282	0.76
ELA Grade 5	Writing - Lower Grades	3424	0.78
ELA Grade 6	Mathematics	26002	0.73
ELA Grade 6	Reading/Literature	21240	0.8

PSSA	CDT	N	R
ELA Grade 6	Science	12446	0.74
ELA Grade 6	Writing/English Comprehension	4255	0.78
ELA Grade 7	Mathematics	28181	0.73
ELA Grade 7	Reading/Literature	24750	0.79
ELA Grade 7	Science	20275	0.73
ELA Grade 7	Writing/English Comprehension	6157	0.77
ELA Grade 8	Mathematics	24015	0.71
ELA Grade 8	Reading/Literature	24527	0.76
ELA Grade 8	Science	29534	0.7
ELA Grade 8	Writing/English Comprehension	5891	0.72
Science Grade 4	Mathematics - Lower Grades	17581	0.75
Science Grade 4	Reading - Lower Grades	14990	0.77
Science Grade 4	Science - Lower Grades	12419	0.79
Science Grade 4	Writing - Lower Grades	2893	0.72
Science Grade 8	Mathematics	23885	0.74
Science Grade 8	Reading/Literature	24424	0.74
Science Grade 8	Science	29376	0.78
Science Grade 8	Writing/English Comprehension	5865	0.67

To further assess discriminant validity for the 2024 PSSA tests, correlations between students' test scores on different PSSA tests, including mathematics, ELA, and science are shown in Table 19–5. In this table, both the observed and disattenuated correlations are reported.

Table 19–5. Correlations among Students' Performance on All PSSA Tests

Grade	Mathematics/ELA	Mathematics/Science	ELA/Science
3	0.79(0.88)		
4	0.81(0.92)	0.82(0.91)	0.83(0.95)
5	0.81(0.92)		
6	0.79(0.90)		
7	0.80(0.90)		
8	0.77(0.88)	0.82(0.90)	0.81(0.93)

Note. Numbers in the parenthesis are disattenuated correlations. The PSSA final data file was used for these calculations (see Chapter Nine). Case-wise elimination of missing data was used.

Each PSSA assessment measures a different construct, so the correlations between them were not expected to be extremely high. The values in this table are consistent with this expectation. As can be seen, the correlations between the PSSA subject tests range from 0.77 to 0.83.

As 2015 was the first year of new PSSA mathematics and ELA, several additional analyses were conducted in 2017 in support of the federal peer review process for the PSSA. These studies included 1) an analysis of how well the PSSA scores predict performance (predictive validity) on high school exams in Algebra I and Literature (Keystone exams), and 2) multiple comparisons of PSSA mathematics and ELA results with other external criteria. These studies provide additional evidence in support of arguments for the convergent and discriminant validity of the PSSA test results detailed in the 2015 and 2016 PSSA Technical Reports referenced above. This report provides a summary of these seven additional analyses and results:

- Keystone predictions
- PSSA relation to other variables:
    - PSSA mathematics and ELA relationship with NAEP
    - PSSA mathematics and ELA relationship with Classroom Diagnostic Tools (CDT)
    - PSSA ELA relationship with GRADE (Group Reading Assessment and Diagnostic Evaluation) literacy assessments
    - PSSA mathematics and ELA relationship with Terra Nova Complete Battery ELA and mathematics
    - PSSA mathematics and ELA relationship with teacher ratings of student proficiency
    - PSSA mathematics and ELA subscore correlations

The results of these analyses provide reasonably strong evidence of the convergent and discriminant validity of the PSSA, as well its predictive relationship with college and career readiness expectations. Results for this set of analyses are reported in Appendix T of the 2018 PSSA Technical Report.

EVIDENCE BASED ON CONSEQUENCES OF TESTING

Based on the *Standards* (2014), evidence supporting the appropriateness of the consequences of testing is an additional source of validity information. Often, this part of the validity argument for a test includes evidence that the test serves all students comparably. The most common methods that are used for this purpose are those that examine the invariance of construct measurement across student groups, and those that seek to detect bias in test content that might lead to some construct irrelevant variation in examinee responses.

As reported in Chapter Five and Appendix F, review and consideration of differential item functioning results with respect to gender and ethnicity offers some evidence that construct-irrelevant variance affecting these groups differentially is not present. The presence of construct-irrelevant variance is generally considered to be a serious a threat to the validity of inferences made from test scores, where those differences are due to content that is unrelated to the intended construct for one or more groups. A distinct limitation of DIF methods is that they treat such variance at the examinee group level and not at the individual level. As not all members of a defined group can ever be assumed to share the exact same characteristics, it can be inappropriate to generalize the group level results to all group members. Nevertheless, the presence of suspected group level construct irrelevant variance may indicate the need to review and reconsider the inclusion of items that have been statistically flagged for DIF. As noted in that chapter, field-test items are screened and reviewed for DIF. Only items approved by teacher committees are eligible for operational use.

Additionally, analyses were conducted to assess the comparability of scores across paper-pencil and computer-based modes of assessment (PPT and CBT) by evaluating differences in person fit. Results of these analyses indicate that the PSSA tests are functioning similarly across mode and mode by subgroups. Refer to Appendix S for a detailed discussion of these analyses and findings.

A comprehensive independent study of the invariance of scores across accommodations was also conducted by Sireci and Wells (2016) with results that support claims of measurement invariance across the PSSA tests for accommodated groups with sufficient cases for analysis.

As evidence of consequential validity is related to its uses, as well as to statistical measures of invariance, it is difficult to directly measure all aspects of consequential validity. Test data provide important evidence of the validity of PSSA scores for their intended uses, and as such, may serve to warrant the intended purpose and use that is defined in this technical report and supporting documentation. Generally, the results of the many content development and review procedures, and the statistical analyses discussed throughout this report, provide evidence that PSSA scores are sufficiently comparable across all examinees, regardless of conditions of gender, ethnicity, test mode, and accommodations used. This has remained true under the reduced test length design. Population invariance, however, will be monitored annually for violations.

Regarding the use of test scores, Chapter Sixteen provides an explanation of the different types of scores and shows samples of the various score reports distributed for the PSSA. Chapter Sixteen also provides accurate and clear test score and report information to help users avoid unintended uses and interpretations of the PSSA results. The extent to which various groups of users (e.g., students, teachers, and parents) interpret these scores and reports appropriately affects the validity of subsequent uses of these results. PDE continues to gather evidence to improve or guide decisions pertaining to all aspects of intended and unintended consequences of the PSSA program.

VALIDITY EVIDENCE SUMMARY

Validity evidence related to test content was reviewed earlier in this chapter. Overall, the early chapters of this technical report show that a strong link can be established between each PSSA item and its associated eligible content. Details regarding how the PSSA operational assessments were assembled to reflect the state content standards and detailed information regarding educator reviews (including content, bias, data, and sensitivity reviews) are presented in Chapters Three and Five.

Evidence of the validity of score interpretations is also provided as it relates to response processes. Cognitive labs for Science scenario-based items showed that examinees were responding as intended and routine hand-scoring processes describe in Chapter Eight provide evidence that ratings show reasonable consistency and that rigorous scoring processes are in place to reduce rater bias and increase consistency.

Evidence of the validity related to internal test structure is provided through the results of multiple analyses including, high test score reliabilities, reasonable SEM and CSEM values, good decision consistency and accuracy, strongly unidimensional constructs, and selections of items that have appropriate difficulty ranges, and discriminate performance well.

Strand score inter-correlations are also presented in this chapter. In general, within-subject-area strands (e.g., mathematics) correlate more highly with themselves than they do with other subject-area strands (e.g., ELA). These results, as well as the additional analyses of the relationship between the PSSA ELA and Mathematics tests with other established measures and classroom performance provides evidence of their convergent, discriminant and predictive validity.

A study of the relationship of PSSA scores with CDT scores shows a strong relationship between similar content areas, and a slightly weaker relationship across different content areas, providing useful convergent and discriminant validity evidence.

Last, evidence that PSSA test scores are largely invariant across multiple subgroups of students is also provided through the results of DIF analyses and subsequent item selection processes, a multi-method study on the invariance of accommodated test scores, and a person fit analysis to investigate the comparability of scores from different modes of administration for different populations of students.

APPENDIX A: GENERAL SCORING GUIDELINES

GENERAL DESCRIPTION OF SCORING GUIDELINES FOR READING SHORT-ANSWER QUESTIONS

3 Points

- The response provides a complete answer to the task (e.g., a statement that offers a correct answer as well as text-based support).
- The response provides specific, appropriate, and accurate details (e.g., naming, describing, explaining, or comparing) or examples.

2 Points

- The response provides a partial answer to the task (e.g., indicates some awareness of the task and at least one text-based detail).
- The response attempts to provide sufficient, appropriate details (e.g., naming, describing, explaining, or comparing) or examples; may contain minor inaccuracies.

1 Point

- The response provides an incomplete answer to the task (e.g., indicating either a misunderstanding of the task or no text-based details.
- The response provides insufficient or inappropriate details or examples that have a major effect on accuracy.
- The response consists entirely of relevant copied text.

0 Points

- The response provides insufficient material for scoring.
- The response is inaccurate in all aspects.

Categories within zero reported separately:

BLK (blank)..... No response or written refusal to respond too brief to determine response
OT..... Off task/topic
LOE..... Response in a language other than English
IL..... Illegible

TEXT-DEPENDENT ANALYSIS SCORING GUIDELINES

Score	Description
4	• Effectively addresses all parts of the task demonstrating in-depth analytic understanding of the text(s) • Effective introduction, development, and conclusion identifying an opinion, topic, or controlling idea related to the text(s) • Strong organizational structure that effectively supports the focus and ideas • Thorough analysis of explicit and implicit meanings from text(s) to effectively support claims, opinions, ideas, and inferences • Substantial, accurate, and direct reference to the text(s) using relevant key details, examples, quotes, facts, and/or definitions • Substantial reference to the main idea(s) and relevant key details of the text(s) to support the writer's purpose • Skillful use of transitions to link ideas • Effective use of precise language and domain-specific vocabulary drawn from the text(s) to explain the topic and/or to convey experiences/events • Few errors, if any, are present in sentence formation, grammar, usage, spelling, capitalization, and punctuation; errors present do not interfere with meaning
3	• Adequately addresses all parts of the task demonstrating sufficient analytic understanding of the text(s) • Clear introduction, development, and conclusion identifying an opinion, topic, or controlling idea related to the text(s) • Appropriate organizational structure that adequately supports the focus and ideas • Clear analysis of explicit and implicit meanings from text(s) to support claims, opinions, ideas, and inferences • Sufficient, accurate, and direct reference to the text(s) using relevant details, examples, quotes, facts, and/or definitions • Sufficient reference to the main idea(s) and relevant key details of the text(s) to support the writer's purpose • Appropriate use of transitions to link ideas • Appropriate use of precise language and domain-specific vocabulary drawn from the text(s) to explain the topic and/or to convey experiences/events • Some errors may be present in sentence formation, grammar, usage, spelling, capitalization, and punctuation; errors present seldom interfere with meaning

Score	Description
2	• Inconsistently addresses some parts of the task demonstrating partial analytic understanding of the text(s) • Weak introduction, development, and/or conclusion identifying an opinion, topic, or controlling idea somewhat related to the text(s) • Weak organizational structure that inconsistently supports the focus and ideas • Weak or inconsistent analysis of explicit and/or implicit meanings from text(s) that somewhat supports claims, opinions, ideas, and inferences • Vague reference to the text(s) using some details, examples, quotes, facts, and/or definitions • Weak reference to the main idea(s) and relevant details of the text(s) to support the writer's purpose • Inconsistent use of transitions to link ideas • Inconsistent use of precise language and domain-specific vocabulary drawn from the text(s) to explain the topic and/or to convey experiences/events • Errors may be present in sentence formation, grammar, usage, spelling, capitalization, and punctuation; errors present may interfere with meaning
1	• Minimally addresses part(s) of the task demonstrating inadequate analytic understanding of the text(s) • Minimal evidence of an introduction, development, and/or conclusion • Minimal evidence of an organizational structure • Insufficient or no analysis of the text(s); may or may not support claims, opinions, ideas, and inferences • Insufficient reference to the text(s) using few details, examples, quotes, facts, and/or definitions • Minimal reference to the main idea(s) and/or relevant details of the text(s) • Few, if any, transitions to link ideas • Little or no use of precise language or domain-specific vocabulary drawn from the text(s) • Many errors may be present in sentence formation, grammar, usage, spelling, capitalization, and punctuation; errors present often interfere with meaning

GENERAL DESCRIPTION OF SCORING GUIDELINES FOR MATHEMATICS OPEN-ENDED QUESTIONS

4–The response demonstrates a *thorough* understanding of the mathematical concepts and procedures required by the task.

The response provides correct answer(s) with clear and complete mathematical procedures shown and a correct explanation, as required by the task. Response may contain a minor "blemish" or omission in work or explanation that does not detract from demonstrating a *thorough* understanding.

3–The response demonstrates a *general* understanding of the mathematical concepts and procedures required by the task.

The response and explanation (as required by the task) are mostly complete and correct. The response may have minor errors or omissions that do not detract from demonstrating a *general* understanding.

2–The response demonstrates a *partial* understanding of the mathematical concepts and procedures required by the task.

The response is somewhat correct with *partial* understanding of the required mathematical concepts and/or procedures demonstrated and/or explained. The response may contain some work that is incomplete or unclear.

1–The response demonstrates a *minimal* understanding of the mathematical concepts and procedures required by the task.

0–The response has no correct answer and *insufficient* evidence to demonstrate any understanding of the mathematical concepts and procedures required by the task for that grade level.

Response may show only information copied from the question.

Special Categories within zero reported separately:

BLK (blank).....Blank, entirely erased, or written refusal to respond

OT.....Off-task

LOE.....Response in a language other than English

IL.....Illegible

GENERAL DESCRIPTION OF SCORING GUIDELINES FOR SCIENCE OPEN-ENDED QUESTIONS

2 Points

- The response demonstrates a *thorough* understanding of the scientific content, concepts, and procedures required by the task(s).
- The response provides a clear, complete, and correct response as required by the task(s). The response may contain a minor blemish or omission in work or explanation that does not detract from demonstrating a *thorough* understanding.

1 Point

- The response demonstrates a *partial* understanding of the scientific content, concepts, and procedures required by the task(s).
- The response is somewhat correct with *partial* understanding of the required scientific content, concepts, and/or procedures demonstrated and/or explained. The response may contain some work that is incomplete or unclear.

0 Points

- The response provides *insufficient* evidence to demonstrate any understanding of the scientific content, concepts, and procedures as required by the task(s) for that grade level.
- The response may show only information copied or rephrased from the question or *insufficient* correct information to receive a score of 1.

Special Categories within zero reported separately:

Blank..... Blank, entirely erased, entirely crossed out, or consists entirely of whitespace
Refusal..... Refusal to respond to the task
Off Task..... Makes no reference to the item but is not an intentional refusal
Foreign Language..... Written entirely in a language other than English
Illegible ..... Illegible or incoherent

APPENDIX B: TALLY SHEETS

Grade 03 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-T: Numbers and Operations in Base Ten	1			Use place-value understanding and properties of operations to perform multi-digit arithmetic.		4				4	4		1				1	1
	1	1		Apply place-value strategies to solve problems.	1		2		3		3	1		2		3		3
	1	1	1	Round two- and three-digit whole numbers to the nearest ten or hundred, respectively.	1				1		1	1				1		1
	1	1	2	Add two- and three-digit whole numbers and/or subtract two- and three-digit numbers from three-digit whole numbers.														
	1	1	3	Multiply one-digit whole numbers by two-digit multiples of ten.	1				1		1	1				1		1
	1	1	4	Order a set of whole numbers from least to greatest or greatest to least.	1				1		1	1				1		1
	Total for Assessment Anchor A-T.1 Use place-value understanding and properties of operations to perform multi-digit arithmetic.				4	4	2		6	4	10	4	1	2		6	1	7
Total For Reporting Category A-T					4	4	2		6	4	10	4	1	2		6	1	7

Grade 03 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-F: Numbers and Operations—Fractions	1			Develop an understanding of fractions as numbers.														
	1	1		Develop and apply number theory concepts to compare quantities and magnitudes of fractions and whole numbers.	2				2		2	2				2		2
	1	1	1	Demonstrate that when a whole or set is partitioned into y equal parts, the fraction 1/y represents 1 part of the whole and/or the fraction x/y represents x equal parts of the whole.	1		1		2		2	1		1		2		2
	1	1	2	Represent fractions on a number line.	2				2		2	2				2		2
	1	1	3	Recognize and generate simple equivalent fractions.			1		1		1			1		1		1
	1	1	4	Express whole numbers as fractions, and/or generate fractions that are equivalent to whole numbers.	2		1		3		3	2		1		3		3
	1	1	5	Compare two fractions with the same denominator, using the symbols >, =, or <, and/or justify the conclusions.	1				1		1	1				1		1
	Total for Assessment Anchor A-F.1 Develop an understanding of fractions as numbers.				8		3		11		11	8		3		11		11
Total For Reporting Category A-F					8		3		11		11	8		3		11		11

Grade 03 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
rations and Algebraic Thinking	1			Represent and solve problems involving multiplication and division.			1		1		1			1		1		1
	1	1		Understand various meanings of multiplication and division.			1		1		1			1		1		1
	1	1	1	Interpret and/or describe products of whole numbers.	1				1		1	1				1		1
	1	1	2	Interpret and/or describe whole-number quotients of whole numbers.	1				1		1	1				1		1
	1	2		Solve mathematical and real-world problems using multiplication and division, including determining a missing number in a multiplication and/or division equation.														
	1	2	1	Use multiplication and/or division to solve word problems in situations involving equal groups, arrays, and/or measurement quantities.	1				1		1	1				1		1
	1	2	2	Determine the unknown whole number in a multiplication or division equation relating three whole numbers.	2				2		2	2				2		2
	Total For Assessment Anchor B-O.1 Represent and solve problems involving multiplication and division.				5		2		7		7	5		2		7		7
	2			Understand properties of multiplication and the relationship between multiplication and division.														
	2	1		Use properties to simplify and solve multiplication problems.			2		2		2			2		2		2
	2	1	1	Apply the commutative property of multiplication (not identification or definition of the property).	1				1		1	1				1		1
	2	1	2	Apply the associative property of multiplication (not identification or definition of the property).	1				1		1	1				1		1
	2	2		Relate division to a missing-number multiplication equation.	1				1		1	1				1		1
	2	2	1	Interpret and/or model division as a multiplication equation with an unknown factor.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor B-O.2 Understand properties of multiplication and the relationship between multiplication and division.				4		3		7		7	4		3		7		7

B-O: Ope	3			Solve problems involving the four operations, and identify and explain patterns in arithmetic.															
	3	1		Use operations, patterns, and estimation strategies to solve problems (may include word problems).	1				1		1	1				1		1	
	3	1	1	Solve two-step word problems using the four operations. Limit to problems with whole numbers and having whole-number answers.	1				1		1	1				1		1	
	3	1	2	Represent two-step word problems using equations with a symbol standing for the unknown quantity. Limit to problems with whole numbers and having whole-number answers.															
	3	1	3	Assess the reasonableness of answers. Limit problems posed with whole numbers and having whole-number answers.															
	3	1	4	Solve two-step equations using order of operations (equation is explicitly stated with no grouping symbols).	1				1		1	1				1		1	
	3	1	5	Identify arithmetic patterns (including patterns in the addition table or multiplication table) and/or explain them using properties of operations.	1				1		1	1				1		1	
	3	1	6	Create or match a story to a given combination of symbols and numbers.															
	3	1	7	Identify the missing symbol that makes a number sentence true.	1				1		1	1				1		1	
	Total For Assessment Anchor B-O.3 Solve problems involving the four operations, and identify and explain patterns in arithmetic.				5				5		5	5				5		5	
Total For Reporting Category B-O					14		5		19		19	14		5		19		19	

Grade 03 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C-G: Geometry	1			Reason with shapes and their attributes.		4				4	4		1				1	1
	1	1		Analyze characteristics of polygons.	1		1		2		2	1		1		2		2
	1	1	1	Explain that shapes in different categories may share attributes and that the shared attributes can define a larger category.	1		1		2		2	1		1		2		2
	1	1	2	Recognize rhombi, rectangles, and squares as examples of quadrilaterals and/or draw examples of quadrilaterals that do not belong to any of these subcategories.	1		1		2		2	1		1		2		2
	1	1	3	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.	1				1		1	1				1		1
	Total For Assessment Anchor C-G.1 Reason with shapes and their attributes.				4	4	3		7	4	11	4	1	3		7	1	8
Total For Reporting Category C-G					4	4	3		7	4	11	4	1	3		7	1	8

Grade 03 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
	1			Solve problems involving measurement and estimation of intervals of time, money, liquid volumes, masses, and lengths of objects.														
	1	1		Determine or calculate time and elapsed time.														
	1	1	1	Tell, show, and/or write time (analog) to the nearest minute.	1				1		1	1				1		1
	1	1	2	Calculate elapsed time to the minute in a given situation.			1		1		1			1		1		1
	1	2		Use the attributes of liquid volume, mass, and length of objects.														
	1	2	1	Measure and estimate liquid volumes and masses of objects using standard units and metric units.	1				1		1	1				1		1
	1	2	2	Add, subtract, multiply, and divide to solve one-step word problems involving masses or liquid volumes that are given in the same units.														
	1	2	3	Use a ruler to measure lengths to the nearest quarter inch or centimeter.	1				1		1	1				1		1
	1	3		Count, compare, and make change using a collection of coins and one-dollar bills.														
	1	3	1	Compare total values of combinations of coins and/or dollar bills less than $5.00.	1		1		2		2	1		1		2		2
	1	3	2	Make change for an amount up to $5.00 with no more than $2.00 change given.	1				1		1	1				1		1
	1	3	3	Round amounts of money to the nearest dollar.														
	Total For Assessment Anchor D-M.1 Solve problems involving measurement and estimation of intervals of time, money, liquid volumes, masses, and lengths of objects.				5		2		7		7	5		2		7		7

D-M: Measurement and Data	2			Represent and interpret data.														
	2	1		Organize, display, and answer questions based on data.		4				4	4		1				1	1
	2	1	1	Complete a scaled pictograph and a scaled bar graph to represent a data set with several categories.														
	2	1	2	Solve one- and two-step problems using information to interpret data presented in scaled pictographs and scaled bar graphs.														
	2	1	3	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Display the data by making a line plot, where the horizontal scale is marked in appropriate units—whole numbers, halves, or quarters.	1		1		2		2	1		1		2		2
	2	1	4	Translate information from one type of display to another. Limit to pictographs, tally charts, bar graphs, and tables.														
	Total For Assessment Anchor D-M.2 Represent and interpret data.				1	4	1		2	4	6	1	1	1		2	1	3
	3			Geometric measurement: understand concepts of area and relate area to multiplication and to addition.														
	3	1		Find the areas of plane figures.			1		1		1			1		1		1
	3	1	1	Measure areas by counting unit squares.	2				2		2	2				2		2
	3	1	2	Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.														
	Total For Assessment Anchor D-M.3 Geometric measurement: understand concepts of area and relate area to multiplication and to addition.				2		1		3		3	2		1		3		3

4			Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.	1				1		1	1				1		1
4	1		Find and use the perimeters of plane figures.	1				1		1	1				1		1
4	1	1	Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, exhibiting rectangles with the same perimeter and different areas, and exhibiting rectangles with the same area and different perimeters. Use the same units throughout the problem.			1		1		1			1		1		1
Total For Assessment Anchor D-M.4 Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.				2		1		3		3	2		1		3		3
Total For Reporting Category D-M				10	4	5		15	4	19	10	1	5		15	1	16

Grade 04 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-T: Numbers and Operations in Base Ten	1			Generalize place-value understanding for multi-digit whole numbers.														
	1	1		Apply place-value and numeration concepts to compare, find equivalencies, and round.	2				2		2	2				2		2
	1	1	1	Demonstrate an understanding that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.														
	1	1	2	Read and write whole numbers in expanded, standard, and word form through 1,000,000.	2				2		2	2				2		2
	1	1	3	Compare two multi-digit numbers through 1,000,000 based on meanings of the digits in each place, using >, =, and < symbols.			1		1		1			1		1		1
	1	1	4	Round multi-digit whole numbers to any place.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor A-T.1 Generalize place-value understanding for multi-digit whole numbers.				5		2		7		7	5		2		7		7
	2			Use place-value understanding and properties of operations to perform multi-digit arithmetic.	2				2		2	2				2		2
	2	1		Use operations to solve problems.														
	2	1	1	Add and subtract multi-digit whole numbers.														
	2	1	2	Multiply a whole number of up to four digits by a one-digit whole number and multiply 2 two-digit numbers.	1				1		1	1				1		1
	2	1	3	Divide up to four-digit dividends by one-digit divisors with answers written as whole-number quotients and remainders.	1				1		1	1				1		1
	2	1	4	Estimate the answer to addition, subtraction, and multiplication problems using whole numbers through six digits.														
	Total For Assessment Anchor A-T.2 Use place-value understanding and properties of operations to perform multi-digit arithmetic.				4				4		4	4				4		4
Total For Reporting Category A-T					9		2		11		11	9		2		11		11

Grade 04

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-F: Numbers and Operations—Fractions	1			Extend understanding of fraction equivalence and ordering.														
	1	1		Find equivalencies and compare fractions.			1		1		1			1		1		1
	1	1	1	Recognize and generate equivalent fractions.	1	4	1		2	4	6	1	1	1		2	1	3
	1	1	2	Compare two fractions with different numerators and different denominators using the symbols >, =, or < and justify the conclusions.														
	Total For Assessment Anchor A-F.1 Extend understanding of fraction equivalence and ordering.				1	4	2		3	4	7	1	1	2		3	1	4
	2			Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.														
	2	1		Solve problems involving fractions and whole numbers (straight computation or word problems).	1				1		1	1				1		1
	2	1	1	Add and subtract fractions with a common denominator.														
	2	1	2	Decompose a fraction or a mixed number into a sum of fractions with the same denominator.	1				1		1	1				1		1
	2	1	3	Add and subtract mixed numbers with a common denominator.	1				1		1	1				1		1
	2	1	4	Solve word problems involving addition and subtraction of fractions referring to the same whole or set and having like denominators.														
	2	1	5	Multiply a whole number by a unit fraction.	1				1		1	1				1		1
	2	1	6	Multiply a whole number by a non-unit fraction.														
	2	1	7	Solve word problems involving multiplication of a whole number by a fraction.														
	Total For Assessment Anchor A-F.2 Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.				4				4		4	4				4		4

3			Understand decimal notation for fractions and compare decimal fractions.	1				1		1	1				1		1
3	1		Use operations to solve problems involving decimals, including converting between fractions and decimals.	1		1		2		2	1		1		2		2
3	1	1	Add two fractions with respective denominators 10 and 100.														
3	1	2	Use decimal notation for fractions with denominators of 10 or 100.	1				1		1	1				1		1
3	1	3	Compare two decimals to hundredths using the symbols >, =, or <, and justify the conclusions.														
Total For Assessment Anchor A-F.3 Understand decimal notation for fractions and compare decimal fractions.				3		1		4		4	3		1		4		4
Total For Reporting Category A-F				8	4	3		11	4	15	8	1	3		11	1	12

Grade 04 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B-O: Operations and Algebraic Thinking	1			Use the four operations with whole numbers to solve problems.														
	1	1		Use numbers and symbols to model the concepts of expressions and equations.	1		1		2		2	1		1		2		2
	1	1	1	Interpret a multiplication equation as a comparison. Represent verbal statements of multiplicative comparisons as multiplication equations.														
	1	1	2	Multiply or divide to solve word problems involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison.	1				1		1	1				1		1
	1	1	3	Solve multi-step word problems posed with whole numbers using the four operations. Answers will be either whole numbers or have remainders that must be interpreted yielding a final answer that is a whole number. Represent these problems using equations with a symbol or letter standing for the unknown quantity.	1		1		2		2	1		1		2		2
	1	1	4	Identify the missing symbol that makes a number sentence true.	1				1		1	1				1		1
	Total For Assessment Anchor B-O.1 Use the four operations with whole numbers to solve problems.				4		2		6		6	4		2		6		6
	2			Gain familiarity with factors and multiples.			1		1		1			1		1		1
	2	1		Develop and apply number theory concepts to represent numbers in various ways.	2		1		3		3	2		1		3		3
	2	1	1	Find all factor pairs for a whole number in the interval 1 through 100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the interval 1 through 100 is a multiple of a given one-digit number. Determine whether a given whole number in the interval 1 through 100 is prime or composite.														
	Total For Assessment Anchor B-O.2 Gain familiarity with factors and multiples.				2		2		4		4	2		2		4		4

3			Generate and analyze patterns.		4				4	4		1				1	1
3	1		Recognize, describe, extend, create, and replicate a variety of patterns.	1		1		2		2	1		1		2		2
3	1	1	Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.	1		1		2		2	1		1		2		2
3	1	2	Determine the missing elements in a function table.	1				1		1	1				1		1
3	1	3	Determine the rule for a function given a table.														
Total For Assessment Anchor B-O.3 Generate and analyze patterns.				3	4	2		5	4	9	3	1	2		5	1	6
Total For Reporting Category B-O				9	4	6		15	4	19	9	1	6		15	1	16

Grade 04 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C-G: Geometry	1			Draw and identify lines and angles, and classify shapes by properties of their lines and angles.														
	1	1		List properties, classify, draw, and identify geometric figures in two dimensions.	2		2		4		4	2		2		4		4
	1	1	1	Draw points, lines, line segments, rays, angles, and perpendicular and parallel lines. Identify these in two-dimensional figures.	3				3		3	3				3		3
	1	1	2	Classify two-dimensional figures based on the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.			1		1		1			1		1		1
	1	1	3	Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into mirroring parts. Identify line-symmetric figures and draw lines of symmetry.	2		2		4		4	2		2		4		4
	Total For Assessment Anchor C-G.1 Draw and identify lines and angles, and classify shapes by properties of their lines and angles.				7		5		12		12	7		5		12		12
Total For Reporting Category C-G					7		5		12		12	7		5		12		12

Grade 04 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
easurement and Data	1			Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.		4				4	4		1				1	1
	1	1		Solve problems involving length, weight (mass), liquid volume, time, area, and perimeter.			1		1		1			1		1		1
	1	1	1	Know relative sizes of measurement units within one system of units including standard units, metric units, and time. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit.	1				1		1	1				1		1
	1	1	2	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects; money, including problems involving simple fractions or decimals; and problems that require expressing measurements given in a larger unit in terms of a smaller unit.	1				1		1	1				1		1
	1	1	3	Apply the area and perimeter formulas for rectangles in real-world and mathematical problems.														
	1	1	4	Identify time (analog or digital) as the amount of minutes before or after the hour.														
	Total For Assessment Anchor D-M.1 Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.				2	4	1		3	4	7	2	1	1		3	1	4

D-M: M	2			Represent and interpret data.														
	2	1		Organize, display, and answer questions based on data.	1				1		1	1				1		1
	2	1	1	Make a line plot to display a data set of measurements in fractions of a unit.														
	2	1	2	Solve problems involving addition and subtraction of fractions by using information presented in line plots.														
	2	1	3	Translate information from one type of display to another.	1				1		1	1				1		1
	Total For Assessment Anchor D-M.2 Represent and interpret data.				2				2		2	2				2		2
	3			Geometric measurement: understand concepts of angle; measure and create angles.														
	3	1		Use appropriate tools and units to sketch an angle and determine angle measurements.														
	3	1	1	Measure angles in whole-number degrees using a protractor. With the aid of a protractor, sketch angles of a specified measure.	2				2		2	2				2		2
	3	1	2	Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor D-M.3 Geometric measurement: understand concepts of angle; measure and create angles.				3		1		4		4	3		1		4		4
Total For Reporting Category D-M					7	4	2		9	4	13	7	1	2		9	1	10

Grade 05 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-T: Numbers and Operations in Base Ten	1			Understand the place-value system.			1		1		1			1		1		1
	1	1		Demonstrate understanding of place-value of whole numbers and decimals, and compare quantities or magnitudes of numbers.	1				1		1	1				1		1
	1	1	1	Demonstrate an understanding that in a multi-digit number, a digit in one place represents 1/10 of what it represents in the place to its left.	1				1		1	1				1		1
	1	1	2	Explain patterns in the number of zeros of the product when multiplying a number by powers of 10 and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	1				1		1	1				1		1
	1	1	3	Read and write decimals to thousandths using base-ten numerals, word form, and expanded form.	1		1		2		2	1		1		2		2
	1	1	4	Compare two decimals to thousandths based on meanings of the digits in each place using >, =, and < symbols.	1				1		1	1				1		1
	1	1	5	Round decimals to any place.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor A-T.1 Understand the place-value system.				6		3		9		9	6		3		9		9
	2			Perform operations with multi-digit whole numbers and with decimals to hundredths.	1				1		1	1				1		1
	2	1		Use whole numbers and decimals to compute accurately.	1		1		2		2	1		1		2		2
	2	1	1	Multiply multi-digit whole numbers.	2				2		2	2				2		2
	2	1	2	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.	1				1		1	1				1		1
	2	1	3	Add, subtract, multiply, and divide decimals to hundredths.	2				2		2	2				2		2
	Total For Assessment Anchor A-T.2 Perform operations with multi-digit whole numbers and with decimals to hundredths.				7		1		8		8	7		1		8		8
Total For Reporting Category A-T					13		4		17		17	13		4		17		17

Grade 05 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-F: Numbers and Operations—Fractions	1			Use equivalent fractions as a strategy to add and subtract fractions.	1	4			1	4	5	1	1			1	1	2
	1	1		Solve addition and subtraction problems involving fractions.			2		2		2			2		2		2
	1	1	1	Add and subtract fractions with unlike denominators.	3		1		4		4	3		1		4		4
	Total For Assessment Anchor A-F.1 Use equivalent fractions as a strategy to add and subtract fractions.				4	4	3		7	4	11	4	1	3		7	1	8
	2			Apply and extend previous understandings of multiplication and division to multiply and divide fractions.			1		1		1			1		1		1
	2	1		Solve multiplication and division problems involving fractions and whole numbers.	2				2		2	2				2		2
	2	1	1	Solve word problems involving division of whole numbers leading to answers in the form of fractions.	1		1		2		2	1		1		2		2
	2	1	2	Multiply a fraction by a fraction.	1				1		1	1				1		1
	2	1	3	Demonstrate an understanding of multiplication as scaling.	1				1		1	1				1		1
	2	1	4	Divide unit fractions by whole numbers and whole numbers by unit fractions.	1				1		1	1				1		1
	Total For Assessment Anchor A-F.2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.				6		2		8		8	6		2		8		8
Total For Reporting Category A-F					10	4	5		15	4	19	10	1	5		15	1	16

Grade 05 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items Core		Number of Items EB		Total Number of Items (Core & EB)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B-O: Operations and Algebraic Thinking	1			Write and interpret numerical expressions.														
	1	1		Analyze and complete calculations by applying the order of operations.			1		1		1			1		1		1
	1	1	1	Use multiple grouping symbols in numerical expressions and evaluate expressions containing these symbols.	1	4	1		2	4	6	1	1	1		2	1	3
	1	1	2	Write simple expressions that model calculations with numbers and interpret numerical expressions without evaluating them.	1				1		1	1				1		1
	Total For Assessment Anchor B-O.1 Write and interpret numerical expressions.				2	4	2		4	4	8	2	1	2		4	1	5
	2			Analyze patterns and relationships.														
	2	1		Create, extend, and analyze patterns.			1		1		1			1		1		1
	2	1	1	Generate two numerical patterns using two given rules.	1				1		1	1				1		1
	2	1	2	Identify apparent relationships between corresponding terms of two patterns with the same starting numbers that follow different rules.	1				1		1	1				1		1
	Total For Assessment Anchor B-O.2 Analyze patterns and relationships.				2		1		3		3	2		1		3		3
Total For Reporting Category B-O					4	4	3		7	4	11	4	1	3		7	1	8

Grade 05 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C-G: Geometry	1			Graph points on the coordinate plane to solve real-world and mathematical problems.	1	4			1	4	5	1	1			1	1	2
	1	1		Identify parts of a coordinate grid and describe or interpret points given an ordered pair.														
	1	1	1	Identify parts of the coordinate plane and the ordered pair. Limit the coordinate plane to quadrant I.	1				1		1	1				1		1
	1	1	2	Represent real-world and mathematical problems by plotting points in quadrant I of the coordinate plane and interpret coordinate values of points in the context of the situation.			1		1		1			1		1		1
	Total For Assessment Anchor C-G.1 Graph points on the coordinate plane to solve real-world and mathematical problems.				2	4	1		3	4	7	2	1	1		3	1	4
	2			Classify two-dimensional figures into categories based on their properties.	1				1		1	1				1		1
	2	1		Use basic properties to classify two-dimensional figures.			1		1		1			1		1		1
	2	1	1	Classify two-dimensional figures in a hierarchy based on properties.	1		2		3		3	1		2		3		3
	Total For Assessment Anchor C-G.2 Classify two-dimensional figures into categories based on their properties.				2		3		5		5	2		3		5		5
Total For Reporting Category C-G					4	4	4		8	4	12	4	1	4		8	1	9

Grade 05 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D-M: Measurement and Data	1			Convert like measurement units within a given measurement system.														
	1	1		Solve problems using simple conversions.	1				1		1	1				1		1
	1	1	1	Convert between different-sized measurement units within a given measurement system.	2		1		3		3	2		1		3		3
	Total for Assessment Anchor D-M.1 Convert like measurement units within a given measurement system.				3		1		4		4	3		1		4		4
	2			Represent and interpret data.														
	2	1		Organize, display, and answer questions based on data.	1				1		1	1				1		1
	2	1	1	Solve problems involving computation of fractions by using information presented in line plots.	1				1		1	1				1		1
	2	1	2	Display and interpret data shown in tallies, tables, charts, pictographs, bar graphs, and line graphs, and use a title, appropriate scale, and labels. A grid will be provided to display data on bar graphs or line graphs.	1				1		1	1				1		1
	Total For Assessment Anchor D-M.2 Represent and interpret data.				3				3		3	3				3		3
	3			Geometric measurement: understand concepts of volume and relate volume to mutliplication and to addition.														
	3	1		Use, describe, and develop procedures to solve problems involving volume.														
	3	1	1	Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for rectangular prisms with whole-number edge lengths in the context of solving real-world and mathematical problems.	2		1		3		3	2		1		3		3
	3	1	2	Find volumes of solid figures composed of two non-overlapping right rectangular prisms.	1				1		1	1				1		1
	Total For Assessment Anchor D-M.3 Geometric measurement: understand concepts of volume and relate volume to mutliplication and to addition.				3		1		4		4	3		1		4		4
Total For Reporting Category D-M					9		2		11		11	9		2		11		11

Grade 06 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
	1			Apply and extend previous understandings of multiplication and division to divide fractions by fractions.														
	1	1		Solve real-world and mathematical problems involving division of fractions.														
	1	1	1	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions.	1	4			1	4	5	1	1			1	1	2
	Total For Assessment Anchor A-N.1 Apply and extend previous understandings of multiplication and division to divide fractions by fractions.				1	4			1	4	5	1	1			1	1	2
	2			Compute with multi-digit numbers and find common factors and multiples.														
	2	1		Compute with multi-digit numbers using the four arithmetic operations with or without a calculator.														
	2	1	1	Solve problems involving operations with whole numbers, decimals, straight computation, or word problems.	2				2		2	2				2		2
	2	2		Apply number theory concepts.	1				1		1	1				1		1
	2	2	1	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12.														
	2	2	2	Apply the distributive property to express a sum of two whole numbers, 1 through 100, with a common factor as a multiple of a sum of two whole numbers with no common factor.														
tem	Total For Assessment Anchor A-N.2 Compute with multi-digit numbers and find common factors and multiples.				3				3		3	3				3		3

A-N: The Number Syst	3			Apply and extend previous understandings of numbers to the system of rational numbers.			1		1		1			1		1		1
	3	1		Understand that positive and negative numbers are used together to describe quantities having opposite directions or values and locations on the number line and coordinate plane.														
	3	1	1	Represent quantities in real-world contexts using positive and negative numbers, explaining the meaning of 0 in each situation.														
	3	1	2	Determine the opposite of a number and recognize that the opposite of the opposite of a number is the number itself.														
	3	1	3	Locate and plot integers and other rational numbers on a horizontal or vertical number line; locate and plot pairs of integers and other rational numbers on a coordinate plane.	1				1		1	1				1		1
	3	2		Understand ordering and absolute value of rational numbers.														
	3	2	1	Write, interpret, and explain statements of order for rational numbers in real-world contexts.														
	3	2	2	Interpret the absolute value of a rational number as its distance from 0 on the number line and as a magnitude for a positive or negative quantity in a real-world situation.	1				1		1	1				1		1
	3	2	3	Solve real-world and mathematical problems by plotting points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.														
	Total For Assessment Anchor A-N.3 Apply and extend previous understandings of numbers to the system of rational numbers.				2		1		3		3	2		1		3		3
Total For Reporting Category A-N					6	4	1		7	4	11	6	1	1		7	1	8

Grade 06 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-R: Ratios and Proportional Relationships	1			Understand ratio concepts and use ratio reasoning to solve problems.		4				4	4		1				1	1
	1	1		Represent and/or solve real-world and mathematical problems using rates, ratios, and/or percents.	1		3		4		4	1		3		4		4
	1	1	1	Use ratio language and notation to describe a ratio relationship between two quantities.	1		1		2		2	1		1		2		2
	1	1	2	Find the unit rate a/b associated with a ratio a:b and use rate language in the context of a ratio relationship.	1		1		2		2	1		1		2		2
	1	1	3	Construct tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and/or plot the pairs of values on the coordinate plane. Use tables to compare ratios.	1				1		1	1				1		1
	1	1	4	Solve unit rate problems including those involving unit pricing and constant speed.	1				1		1	1				1		1
	1	1	5	Find a percent of a quantity as a rate per 100; solve problems involving finding the whole, given a part and the percentage.	1				1		1	1				1		1
	Total For Assessment Anchor A-R.1 Understand ratio concepts and use ratio reasoning to solve problems.				6	4	5		11	4	15	6	1	5		11	1	12
Total For Reporting Category A-R					6	4	5		11	4	15	6	1	5		11	1	12

Grade 06 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B-E: Expressions and Equations	1			Apply and extend previous understandings of arithmetic to numerical and algebraic expressions.		4				4	4		1				1	1
	1	1		Identify, write, and evaluate numerical and algebraic expressions.			1		1		1			1		1		1
	1	1	1	Write and evaluate numerical expressions involving whole-number exponents.	1				1		1	1				1		1
	1	1	2	Write algebraic expressions from verbal descriptions.	2				2		2	2				2		2
	1	1	3	Identify parts of an expression using mathematical terms.			1		1		1			1		1		1
	1	1	4	Evaluate expressions at specific values of their variables, including expressions that arise from formulas used in real-world problems.														
	1	1	5	Apply the properties of operations to generate equivalent expressions.														
	Total For Assessment Anchor B-E.1 Apply and extend previous understandings of arithmetic to numerical and algebraic expressions.				3	4	2		5	4	9	3	1	2		5	1	6
	2			Interpret and solve one-variable equations and inequalities.	1				1		1	1				1		1
	2	1		Create, solve, and interpret one-variable equations or inequalities in real-world and mathematical problems.			1		1		1			1		1		1
	2	1	1	Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	1				1		1	1				1		1
	2	1	2	Write algebraic expressions to represent real-world or mathematical problems.														
	2	1	3	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q, and x are all non-negative rational numbers.	1				1		1	1				1		1
	2	1	4	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem and/or represent solutions of such inequalities on number lines.	1				1		1	1				1		1
	Total For Assessment Anchor B-E.2 Interpret and solve one-variable equations and inequalities.				4		1		5		5	4		1		5		5

	3			Represent and analyze quantitative relationships between dependent and independent variables.															
	3	1		Use variables to represent two quantities in a real-world problem that change in relationship to one another.	1		1		2		2	1		1		2		2
	3	1	1	Write an equation to express the relationship between the dependent and independent variables.	1				1		1	1				1		1
	3	1	2	Analyze the relationship between the dependent and independent variables using graphs and tables and/or relate these to an equation.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor B-E.3 Represent and analyze quantitative relationships between dependent and independent variables.				3		2		5		5	3		2		5		5
Total For Reporting Category B-E					10	4	5		15	4	19	10	1	5		15	1	16

Grade 06 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C-G: Geometry	1			Solve real-world and mathematical problems involving area, surface area, and volume.			1		1		1			1		1		1
	1	1		Find area, surface area, and volume by applying formulas and using various strategies.			1		1		1			1		1		1
	1	1	1	Determine the area of triangles and special quadrilaterals.	1				1		1	1				1		1
	1	1	2	Determine the area of irregular or compound polygons.	2		1		3		3	2		1		3		3
	1	1	3	Determine the volume of right rectangular prisms with fractional edge lengths.	1				1		1	1				1		1
	1	1	4	Given coordinates for the vertices of a polygon in the plane, use the coordinates to find side lengths and area of the polygon.	1				1		1	1				1		1
	1	1	5	Represent three-dimensional figures using nets made of rectangles and triangles.	2				2		2	2				2		2
	1	1	6	Determine the surface area of triangular and rectangular prisms.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor C-G.1 Solve real-world and mathematical problems involving area, surface area, and volume.				8		4		12		12	8		4		12		12
Total For Reporting Category C-G					8		4		12		12	8		4		12		12

Grade 06 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D-S: Statistics and Probability	1			Demonstrate understanding of statistical variability by summarizing and describing distributions.			1		1		1			1		1		1
	1	1		Display, analyze, and summarize numerical data sets in relation to their context.	2		1		3		3	2		1		3		3
	1	1	1	Display numerical data in plots on a number line, including line plots, histograms, and box-and-whisker plots.	2				2		2	2				2		2
	1	1	2	Determine quantitative measures of center and variability.	2				2		2	2				2		2
	1	1	3	Describe any overall pattern and any deviations from the overall pattern with reference to the context in which the data were gathered.	2				2		2	2				2		2
	1	1	4	Relate the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.	2		1		3		3	2		1		3		3
	Total For Assessment Anchor D-S.1 Demonstrate understanding of statistical variability by summarizing and describing distributions.				10		3		13		13	10		3		13		13
Total For Reporting Category D-S					10		3		13		13	10		3		13		13

Grade 07 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-N: The Number System	1			Apply and extend previous understandings of operations to add, subtract, multiply, and divide rational numbers.														
	1	1		Solve real-world and mathematical problems involving the four operations with rational numbers.		4	1		1	4	5		1	1		1	1	2
	1	1	1	Apply properties of operations to add and subtract rational numbers, including real-world contexts.	2				2		2	2				2		2
	1	1	2	Represent addition and subtraction on a horizontal or vertical number line.	1				1		1	1				1		1
	1	1	3	Apply properties of operations to multiply and divide rational numbers, including real-world contexts; demonstrate that the decimal form of a rational number terminates or eventually repeats.	2				2		2	2				2		2
	Total For Assessment Anchor A-N.1 Apply and extend previous understandings of operations to add, subtract, multiply, and divide rational numbers.				5	4	1		6	4	10	5	1	1		6	1	7
Total For Reporting Category A-N					5	4	1		6	4	10	5	1	1		6	1	7

Grade 07 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items Core		Number of Items EB		Total Number of Items (Core & EB)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-R: Ratios and Proportional Relationships	1			Demonstrate an understanding of proportional relationships.														
	1	1		Analyze, recognize, and represent proportional relationships and use them to solve real-world and mathematical problems.	1				1		1	1				1		1
	1	1	1	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.	2	4			2	4	6	2	1			2	1	3
	1	1	2	Determine whether two quantities are proportionally related.	1		1		2		2	1		1		2		2
	1	1	3	Identify the constant of proportionality in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	1		1		2		2	1		1		2		2
	1	1	4	Represent proportional relationships by equations.	1		1		2		2	1		1		2		2
	1	1	5	Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r), where r is the unit rate.	2		1		3		3	2		1		3		3
	1	1	6	Use proportional relationships to solve multi-step ratio and percent problems.	1		2		3		3	1		2		3		3
	Total For Assessment Anchor A-R.1 Demonstrate an understanding of proportional relationships.				9	4	6		15	4	19	9	1	6		15	1	16
Total For Reporting Category A-R					9	4	6		15	4	19	9	1	6		15	1	16

Grade 07 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items Core		Number of Items EB		Total Number of Items (Core & EB)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B-E: Expressions and Equations	1			Represent expressions in equivalent forms.														
	1	1		Use properties of operations to generate equivalent expressions.	1		1		2		2	1		1		2		2
	1	1	1	Apply properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients.	1	4	1		2	4	6	1	1	1		2	1	3
	Total For Assessment Anchor B-E.1 Represent expressions in equivalent forms.				2	4	2		4	4	8	2	1	2		4	1	5
	2			Solve real-world and mathematical problems using numerical and algebraic expressions, equations, and inequalities.	1				1		1	1				1		1
	2	1		Solve multi-step real-world and mathematical problems posed with positive and negative rational numbers.														
	2	1	1	Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate.	1				1		1	1				1		1
	2	2		Use variables to represent quantities in a real-world or mathematical problem and construct simple equations and inequalities to solve problems.	1				1		1	1				1		1
	2	2	1	Solve word problems leading to equations of the form $px + q = r$ and $p(x+q) = r$, where p, q, and r are specific rational numbers.	1				1		1	1				1		1
	2	2	2	Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers, and graph the solution set of the inequality.	1				1		1	1				1		1
	2	3		Determine the reasonableness of the answer(s) in problem-solving situations.														
	2	3	1	Determine the reasonableness of answer(s) or interpret the solution(s) in the context of the problem.	2		1		3		3	2		1		3		3
	Total For Assessment Anchor B-E.2 Solve real-world and mathematical problems using numerical and algebraic expressions, equations, and inequalities.				7		1		8		8	7		1		8		8
Total For Reporting Category B-E					9	4	3		12	4	16	9	1	3		12	1	13

Grade 07 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items Core		Number of Items EB		Total Number of Items (Core & EB)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C-G: Geometry	1			Demonstrate an understanding of geometric figures and their properties.														
	1	1		Demonstrate and apply properties of geometric figures.														
	1	1	1	Solve problems involving scale drawings of geometric figures, including finding length and area.	1		1		2		2	1		1		2		2
	1	1	2	Identify or describe the properties of all types of triangles based on angle and side measures.	1				1		1	1				1		1
	1	1	3	Use and apply the triangle inequality theorem.														
	1	1	4	Describe the two-dimensional figures that result from slicing three-dimensional figures.	2				2		2	2				2		2
	Total For Assessment Anchor C-G.1 Demonstrate an understanding of geometric figures and their properties.				4		1		5		5	4		1		5		5
	2			Solve real-world and mathematical problems involving angle measure, circumference, area, surface area, and volume.	1				1		1	1				1		1
	2	1		Identify, use, and describe properties of angles and their measures.			1		1		1			1		1		1
	2	1	1	Identify and use properties of supplementary, complementary, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	1				1		1	1				1		1
	2	1	2	Identify and use properties of angles formed when two parallel lines are cut by a transversal.														
	2	2		Determine circumference, area, surface area, and volume.			1		1		1			1		1		1
	2	2	1	Find the area and circumference of a circle. Solve problems involving area and circumference of a circle(s).	2				2		2	2				2		2
	2	2	2	Solve real-world and mathematical problems involving area, volume, and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor C-G.2 Solve real-world and mathematical problems involving angle measure, circumference, area, surface area, and volume.				5		3		8		8	5		3		8		8
Total For Reporting Category C-G					9		4		13		13	9		4		13		13

Grade 07 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D-S: Statistics and Probability	1			Use random sampling to draw inferences about a population.														
	1	1		Use random samples.			1		1		1			1		1		1
	1	1	1	Determine whether a sample is a random given a real-world situation.	1				1		1	1				1		1
	1	1	2	Use data from a random sample to draw inferences about a population with an unknown characteristic of interest.	1				1		1	1				1		1
	Total For Assessment Anchor D-S.1 Use random sampling to draw inferences about a population.				2		1		3		3	2		1		3		3
	2			Draw comparative inferences about populations.														
	2	1		Use statistical measures to compare two numerical data distributions.														
	2	1	1	Compare two numerical data distributions using measures of center and variability.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor D-S.2 Draw comparative inferences about populations.				1		1		2		2	1		1		2		2
	3			Investigate chance processes and develop, use, and evaluate probability models.														
	3	1		Predict or determine the likelihood of outcomes.	1				1		1	1				1		1
	3	1	1	Predict or determine whether some outcomes are certain, more likely, less likely, equally likely, or impossible.	2				2		2	2				2		2
	3	2		Use probability to predict outcomes.			1		1		1			1		1		1
	3	2	1	Determine the probability of a chance event given relative frequency. Predict the approximate relative frequency given the probability.	1				1		1	1				1		1
	3	2	2	Find the probability of a simple event, including the probability of a simple event not occurring.			1		1		1			1		1		1
	3	2	3	Find probabilities of independent compound events using organized lists, tables, tree diagrams, and simulation.	1				1		1	1				1		1
	Total For Assessment Anchor D-S.3 Investigate chance processes and develop, use, and evaluate probability models.				5		2		7		7	5		2		7		7
Total For Reporting Category D-S					8		4		12		12	8		4		12		12

Grade 08 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A-N: The Number System	1			Demonstrate an understanding of rational and irrational numbers.														
	1	1		Apply concepts of rational and irrational numbers.	2				2		2	2				2		2
	1	1	1	Determine whether a number is rational or irrational. For rational numbers, show that the decimal expansion terminates or repeats.	2		1		3		3	2		1		3		3
	1	1	2	Convert a terminating or repeating decimal to a rational number.	1				1		1	1				1		1
	1	1	3	Estimate the value of irrational numbers without a calculator.	1				1		1	1				1		1
	1	1	4	Use rational approximations of irrational numbers to compare and order irrational numbers.	2				2		2	2				2		2
	1	1	5	Locate/identify rational and irrational numbers at their approximate locations on a number line.														
	Total For Assessment Anchor A-N.1 Demonstrate an understanding of rational and irrational numbers.				8		1		9		9	8		1		9		9
Total For Reporting Category A-N					8		1		9		9	8		1		9		9

Grade 08					Mathematics														
Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
	1			Demonstrate an understanding of expressions and equations with radicals and integer exponents.														
	1	1		Represent and use expressions and equations to solve problems involving radicals and integer exponents.														
	1	1	1	Apply one or more properties of integer exponents to generate equivalent numerical expressions without a calculator.	1				1		1	1				1		1
	1	1	2	Use square root and cube root symbols to represent solutions to equations of the form x^2 = p and x^3 = p, where p is a positive rational number. Evaluate square roots of perfect squares and cube roots of perfect cubes without a calculator.	1				1		1	1				1		1
	1	1	3	Estimate very large or very small quantities by using numbers expressed in the form of a single digit times an integer power of 10 and express how many times larger or smaller one number is than another.														
	1	1	4	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Express answers in scientific notation and choose units of appropriate size for measurements of very large or very small quantities. Interpret scientific notation that has been generated by technology.	2				2		2	2				2		2
	Total For Assessment Anchor B-E.1 Demonstrate an understanding of expressions and equations with radicals and integer exponents.				4				4		4	4				4		4

B-E: Expressions and Equations	2			Understand the connections between proportional relationships, lines, and linear equations.														
	2	1		Analyze and describe linear relationships between two variables, using slope.	2		1		3		3	2		1		3		3
	2	1	1	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.														
	2	1	2	Use similar right triangles to show and explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane.														
	2	1	3	Derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.	1				1		1	1				1		1
	Total For Assessment Anchor B-E.2 Understand the connections between proportional relationships, lines, and linear equations.				3		1		4		4	3		1		4		4

3			Analyze and solve linear equations and pairs of simultaneous linear equations.			1		1		1			1		1		1
3	1		Write, solve, graph, and interpret linear equations in one or two variables, using various methods.														
3	1	1	Write and identify linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms until an equivalent equation of the form x = a, a = a, or a = b results.	1		1		2		2	1		1		2		2
3	1	2	Solve linear equations that have rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	1				1		1	1				1		1
3	1	3	Interpret solutions to a system of two linear equations in two variables as points of intersection of their graphs because points of intersection satisfy both equations simultaneously.	1				1		1	1				1		1
3	1	4	Solve systems of two linear equations in two variables algebraically and estimate solutions by graphing the equations. Solve simple cases by inspection.	1				1		1	1				1		1
3	1	5	Solve real-world and mathematical problems leading to two linear equations in two variables.	1	4			1	4	5	1	1			1	1	2
Total For Assessment Anchor B-E.3 Analyze and solve linear equations and pairs of simultaneous linear equations.				5	4	2		7	4	11	5	1	2		7	1	8
Total For Reporting Category B-E				12	4	3		15	4	19	12	1	3		15	1	16

Grade 08 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B-F: Functions	1			Analyze and interpret functions.			1		1		1			1		1		1
	1	1		Define, evaluate, and compare functions displayed algebraically, graphically, or numerically in tables or by verbal descriptions.	2		1		3		3	2		1		3		3
	1	1	1	Determine whether a relation is a function.	1				1		1	1				1		1
	1	1	2	Compare properties of two functions, each represented in a different way.	2		1		3		3	2		1		3		3
	1	1	3	Interpret the equation $y = mx + b$ as defining a linear function whose graph is a straight line; give examples of functions that are not linear.														
	Total For Assessment Anchor B-F.1 Analyze and interpret functions.				5		3		8		8	5		3		8		8
	2			Use functions to model relationships between quantities.														
	2	1		Represent or interpret functional relationships between quantities using tables, graphs, and descriptions.	2		1		3		3	2		1		3		3
	2	1	1	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models and in terms of its graph or a table of values.	2		1		3		3	2		1		3		3
	2	1	2	Describe qualitatively the functional relationship between two quantities by analyzing a graph. Sketch or determine a graph that exhibits the qualitative features of a function that has been described verbally.	2		1		3		3	2		1		3		3
	Total For Assessment Anchor B-F.2 Use functions to model relationships between quantities.				6		3		9		9	6		3		9		9
Total For Reporting Category B-F					11		6		17		17	11		6		17		17

Grade 08 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C-G: Geometry	1			Demonstrate an understanding of geometric transformations.		4				4	4		1				1	1
	1	1		Apply properties of geometric transformations to verify congruence or similarity.	1				1		1	1				1		1
	1	1	1	Identify and apply properties of rotations, reflections, and translations.														
	1	1	2	Given two congruent figures, describe a sequence of transformations that exhibits the congruence between them.			1		1		1			1		1		1
	1	1	3	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.			1		1		1			1		1		1
	1	1	4	Given two similar two-dimensional figures, describe a sequence of transformations that exhibits the similarity between them.	1				1		1	1				1		1
	Total For Assessment Anchor C-G.1 Demonstrate an understanding of geometric transformations.				2	4	2		4	4	8	2	1	2		4	1	5
	2			Understand and apply the Pythagorean theorem.														
	2	1		Solve problems involving right triangles by applying the Pythagorean theorem.														
	2	1	1	Apply the converse of the Pythagorean theorem to show a triangle is a right triangle.	1		1		2		2	1		1		2		2
	2	1	2	Apply the Pythagorean theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	1		1		2		2	1		1		2		2
	2	1	3	Apply the Pythagorean theorem to find the distance between two points in a coordinate system.														
	Total For Assessment Anchor C-G.2 Understand and apply the Pythagorean theorem.				2		2		4		4	2		2		4		4

3			Solve real-world and mathematical problems involving volume.			1		1		1			1		1		1
3	1		Apply volume formulas of cones, cylinders, and spheres.														
3	1	1	Apply formulas for the volumes of cones, cylinders, and spheres to solve real-world and mathematical problems.	1				1		1	1				1		1
Total For Assessment Anchor C-G.3 Solve real-world and mathematical problems involving volume.				1		1		2		2	1		1		2		2
Total For Reporting Category C-G				5	4	5		10	4	14	5	1	5		10	1	11

Grade 08 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D-S: Statistics and Probability	1			Investigate patterns of association in bivariate data.		4				4	4		1				1	1
	1	1		Analyze and interpret bivariate data displayed in multiple representations.														
	1	1	1	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative correlation, linear association, and nonlinear association.	1				1		1	1				1		1
	1	1	2	For scatter plots that suggest a linear association, identify a line of best fit by judging the closeness of the data points to the line.	1		1		2		2	1		1		2		2
	1	1	3	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpeting the slope and intercept.	1		1		2		2	1		1		2		2
	1	2		Understand that patterns of association can be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table.														
	1	2	1	Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible associations between the two variables.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor D-S.1 Investigate patterns of association in bivariate data.				4	4	3		7	4	11	4	1	3		7	1	8
Total For Reporting Category D-S					4	4	3		7	4	11	4	1	3		7	1	8

Grade 03 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
A: Literature Text	A-K	1	1	1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	2						2			2	2						2			2
		1	1	2	Recount poems, dramas, or stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text.	3						3			3	3						3			3
		1	1	3	Describe characters in a story and explain how their actions contribute to the sequence of events.	1		3				1		3	4	1		1				1		1	2
		Total For Assessment Anchor A-K.1 Key Ideas and Details				6		3				6		3	9	6		1				6		1	7
	A-C	2	1	1	Explain the point of view from which a story is narrated, including the difference between first- and third-person narrations.	1	2					1	2		3	1	1					1	1		2
		Total For Assessment Anchor A-C.2 Craft and Structure				1	2					1	2		3	1	1					1	1		2
	A-C	3	1	1	Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters.	1	2					1	2		3	1	1					1	1		2
		Total For Assessment Anchor A-C.3 Integration of Knowledge and Ideas				1	2					1	2		3	1	1					1	1		2
	A-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies.	1						1			1	1						1			1
		4	1	2	Demonstrate understanding of word relationships and nuances in word meanings.	2						2			2	2						2			2
		Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				3						3			3	3						3			3
Total For Reporting Category A						11	4	3				11	4	3	18	11	2	1				11	2	1	14

Grade 03 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
B: Informational Text	B-K	1	1	1	Answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	2						2			2	2						2			2
	B-K	1	1	2	Determine the main idea of a text; recount the key details and explain how they support the main idea.	1	3					1	3		4	1	1					1	1		2
	B-K	1	1	3	Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.	1	3	3				1	3	3	7	1	1	1				1	1	1	3
		Total For Assessment Anchor B-K.1 Key Ideas and Details				4	6	3				4	6	3	13	4	2	1				4	2	1	7
	B-C	2	1	1	Explain the point of view from which a text is written.	1						1			1	1						1			1
	B-C	2	1	2	Use text features and search tools to efficiently locate information relevant to a given topic.	1						1			1	1						1			1
		Total For Assessment Anchor B-C.2 Craft and Structure				2						2			2	2						2			2
	B-C	3	1	1	Describe the logical connection between particular sentences and paragraphs to support specific points in a text.	2						2			2	2						2			2
	B-C	3	1	2	Compare and contrast the most important points and key details presented in two texts on the same topic.																				
	B-C	3	1	3	Use information gained from illustrations, maps, photographs, and the words in a text to demonstrate understanding of the text.																				
		Total For Assessment Anchor B-C.3 Integration of Knowledge and Ideas				2						2			2	2						2			2
	B-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies.	1						1			1	1						1			1
	B-V	4	1	2	Demonstrate understanding of word relationships and nuances in word meanings.																				
		Total For Assessment Anchor B-V.4 Vocabulary Acquisition and Use				1						1			1	1						1			1
Total For Reporting Category B						9	6	3				9	6	3	18	9	2	1				9	2	1	12

Grade 03 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total	MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total
C: Writing	C	1	1		Write opinion pieces on topics or texts, supporting a point of view with reasons.																				
	C	1	2		Write informative/explanatory texts to examine a topic and convey ideas and information clearly.																				
	C	1	3		Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.																				
		Total For Assessment Anchor C.1 Text Types and Purposes																							
Total For Reporting Category C																									

Grade 03 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
D: Language	D	1	1	1	Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences.				1			1			1				1			1			1
		1	1	2	Form and use regular and irregular plural nouns.	1						1			1	1						1			1
		1	1	3	Use abstract nouns.	1						1			1	1						1			1
		1	1	4	Form and use regular and irregular verbs.				2			2			2				2			2			2
		1	1	5	Form and use the simple verb tenses.	1			1			2			2	1			1			2			2
		1	1	6	Ensure subject-verb and prounoun-antecedent agreement.	1						1			1	1						1			1
		1	1	7	Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified.	1						1			1	1						1			1
		1	1	8	Use coordinating and subordinating conjunctions.				1			1			1				1			1			1
		1	1	9	Produce simple, compound, and complex sentences.	1			1			2			2	1			1			2			2
		1	2	1	Capitalize appropriate words in titles.				2			2			2				2			2			2
		1	2	2	Use commas in addresses.																				
		1	2	3	Use commas and quotation marks in dialogue.				1			1			1				1			1			1
		1	2	4	Form and use possessives.																				
		1	2	5	Use conventional spelling for high-frequency and other studied words and for adding suffixes to base words.	1						1			1	1						1			1
		1	2	6	Use spelling patterns and generalizations in writing words.	1						1			1	1						1			1
		Total For Assessment Anchor D.1 Conventions of Standard English				8			9			17			17	8			9			17			17
		2	1	1	Choose words and phrases for effect.	1						1			1	1						1			1
		Total For Assessment Anchor D.2 Knowledge of Language				1						1			1	1						1			1
Total For Reporting Category D						9			9			18			18	9			9			18			18

Grade 04 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
A: Literature Text	A-K	1	1	1	Refer to details and examples in a text when explaining what the text explicitly says and when drawing inferences from the text.	4						4			4	4						4			4
		1	1	2	Determine a theme of a story, drama, or poem from details in the text; summarize the text.	1	3					1	3		4	1	1					1	1		2
		1	1	3	Describe in depth a character, setting, or event in a story, drama, or poem, drawing on specific details in the text.	1	5					1	5		6	1	2					1	2		3
		Total For Assessment Anchor A-K.1 Key Ideas and Details				6	8					6	8		14	6	3					6	3		9
	A-C	2	1	1	Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations.	2						2			2	2						2			2
		Total For Assessment Anchor A-C.2 Craft and Structure				2						2			2	2						2			2
		3	1	1	Compare and contrast the treatment of similar themes and topics and patterns of events in stories, myths, and traditional literature from different cultures.																				
		Total For Assessment Anchor A-C.3 Integration of Knowledge and Ideas																							
	A-V	4	1	1	Determine or clarify the meaning of unknown multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.	3						3			3	3						3			3
		4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.																				
		Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				3						3			3	3						3			3
Total For Reporting Category A						11	8					11	8		19	11	3					11	3		14

Grade 04 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
B: Informational Text	B-K	1	1	1	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.																				
		1	1	2	Determine the main idea of a text and explain how it is supported by key details; summarize the text.		5						5		5		2						2		2
		1	1	3	Explain events, procedures, ideas, steps, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.	3						3			3	3						3			3
		Total For Assessment Anchor B-K.1 Key Ideas and Details				3	5					3	5		8	3	2					3	2		5
	B-C	2	1	1	Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.																				
		2	1	2	Describe the overall structure of events, ideas, concepts, or information and text features in a text or part of a text.	1						1			1	1						1			1
		Total For Assessment Anchor B-C.2 Craft and Structure				1						1			1	1						1			1
	B-C	3	1	1	Explain how an author uses reasons and evidence to support particular points in a text.	2	2					2	2		4	2	1					2	1		3
		3	1	2	Integrate information from two texts on the same topic in order to demonstrate subject knowledge.																				
		3	1	3	Interpret text features and/or make connections between text and the content of text features.	2						2			2	2						2			2
		Total For Assessment Anchor B-C.3 Integration of Knowledge and Ideas				4	2					4	2		6	4	1					4	1		5
	B-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.	2						2			2	2						2			2
		4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	2						2			2	2						2			2
		Total For Assessment Anchor B-V.4 Vocabulary Acquisition and Use				4						4			4	4						4			4
Total For Reporting Category B						12	7					12	7		19	12	3					12	3		15

Grade 04 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items Core			Number of Items EB			Total Number of Items (Core & EB)			
						MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total	MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total
C: Writing	C	1	1		Write opinion pieces on topics or texts, supporting a point of view with reasons and information.																				
		1	2		Write informative/explanatory texts to examine a topic and convey ideas and information clearly.																				
		1	3		Write narratives to develop real or imagined experiences or events using effective techniques, descriptive details, and clear event sequences.																				
		Total For Assessment Anchor C.1 Text Types and Purposes																							
Total For Reporting Category C																									

Grade 04 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items Core			Number of Items EB			Total Number of Items (Core & EB)			
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
D: Language	D	1	1	1	Use relative pronouns and relative adverbs.																				
		1	1	2	Form and use the progressive verb tenses.				1			1			1				1			1			1
		1	1	3	Use modal auxiliaries to convey various conditions.				1			1			1				1			1			1
		1	1	4	Order adjectives within sentences according to conventional patterns.																				
		1	1	5	Form and use prepositional phrases.	1						1			1	1						1			1
		1	1	6	Produce complete sentences, recognizing and correcting inappropriate fragments and run-on sentences.	1			2			3			3	1			2			3			3
		1	1	7	Correctly use frequently confused words.	1			1			2			2	1			1			2			2
		1	1	8	Ensure subject-verb and pronoun-antecedent agreement.				1			1			1				1			1			1
		1	2	1	Use correct capitalization.	1						1			1	1						1			1
		1	2	2	Use commas and quotation marks to mark direct speech and quotations from a text.																				
		1	2	3	Use a comma before a coordinating conjunction in a compound sentence.				1			1			1				1			1			1
		1	2	4	Spell grade-appropriate words correctly.																				
		Total For Assessment Anchor D.1 Conventions of Standard English				4			7			11			11	4			7			11			11
	D	2	1	1	Choose words and phrases to convey ideas precisely.	3						3			3	3						3			3
		2	1	2	Choose punctuation for effect.				1			1			1				1			1			1
		2	1	3	Choose words and phrases for effect.	2			1			3			3	2			1			3			3
		Total For Assessment Anchor D.2 Knowledge of Language				5			2			7			7	5			2			7			7
Total For Reporting Category D						9			9			18			18	9			9			18			18

Grade 04 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items Core			Number of Items EB			Total Number of Items (Core & EB)			
						MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total	MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total
E: Text-Dependent Analysis	E	1	1		Draw evidence from literary or informational texts to support analysis, reflection, and/or research.			4						4	4			1						1	1
		Total For Assessment Anchor E.1 Evidence-based Analysis of Text						4						4	4			1						1	1
Total For Reporting Category E								4						4	4			1						1	1

Grade 05 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points									Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB					
						MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total	MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total
A: Literature Text	A-K	1	1	1	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences and/or making generalizations from the text.	2	5					2	5		7	2	2					2	2		4
		1	1	2	Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text.	2						2			2	2						2			2
		1	1	3	Compare and contrast two or more characters, settings, or events in a story, drama, or poem, drawing on specific details in the text.	3						3			3	3						3			3
		Total For Assessment Anchor A-K.1 Key Ideas and Details				7	5					7	5		12	7	2					7	2		9
	A-C	2	1	1	Describe how a narrator's or speaker's point of view influences how events are described; describe an author's purpose and explain how it is conveyed in the text.	1	3					1	3		4	1	1					1	1		2
		Total For Assessment Anchor A-C.2 Craft and Structure				1	3					1	3		4	1	1					1	1		2
	A-C	3	1	1	Compare and contrast stories in the same genre on their approaches to similar themes and topics.																				
		Total For Assessment Anchor A-C.3 Integration of Knowledge and Ideas																							
	A-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.	1						1			1	1						1			1
		4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	2						2			2	2						2			2
		Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				3						3			3	3						3			3
Total For Reporting Category A						11	8					11	8		19	11	3					11	3		14

Grade 05 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total	MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total
B: Informational Text	B-K	1	1	1	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences and/or making generalizations from the text.	2						2			2	2						2			2
		1	1	2	Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.	1						1			1	1						1			1
		1	1	3	Explain the relationships or interactions between two or more individuals, events, ideas, steps, or concepts in a historical, scientific, or technical text based on specific information in the text.	1	5					1	5		6	1	2					1	2		3
		Total For Assessment Anchor B-K.1 Key Ideas and Details				4	5					4	5		9	4	2					4	2		6
	B-C	2	1	1	Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.																				
		2	1	2	Compare and contrast the overall structure of events, ideas, concepts, or information and text features in two or more texts.																				
		Total For Assessment Anchor B-C.2 Craft and Structure																							
	B-C	3	1	1	Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s).	3	2					3	2		5	3	1					3	1		4
		3	1	2	Integrate information from several texts on the same topic in order to demonstrate subject knowledge.																				
		3	1	3	Interpret text features and/or make connections between text and the content of text features.	2						2			2	2						2			2
		Total For Assessment Anchor B-C.3 Integration of Knowledge and Ideas				5	2					5	2		7	5	1					5	1		6
	B-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.	1						1			1	1						1			1
		4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	2						2			2	2						2			2
		Total For Assessment Anchor B-V.4 Vocabulary Acquisition and Use				3						3			3	3						3			3
Total For Reporting Category B						12	7					12	7		19	12	3					12	3		15

Grade 05 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points									Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB					
						MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total	MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total
C: Writing	C	1	1		Write opinion pieces on topics or texts, supporting a point of view with reasons and information.																				
		1	2		Write informative/explanatory texts to examine a topic and convey ideas and information clearly.																				
		1	3		Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.																				
		Total For Assessment Anchor C.1 Text Types and Purposes																							
Total For Reporting Category C																									

Grade 05 **English Language Arts**

Reporting Category		Assessment	Descriptor (Sub-)	Eligible Content	Focus	Points										Items									
						Student (Core			Equating Block (EB)			Total Points (Core &				Number of Items Core			EB			Total Number (Core &			
						MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total	MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total
D: Language	D	1	1	1	Explain the function of conjunctions, prepositions, and interjections in general and their function in particular sentences.	1						1			1	1						1			1
		1	1	2	Form and use the perfect verb tenses.	1						1			1	1						1			1
		1	1	3	Use verb tense to convey various times, sequences, states, and conditions.				1			1			1				1			1			1
		1	1	4	Recognize and correct inappropriate shifts in verb tense.				1			1			1				1			1			1
		1	1	5	Use correlative conjunctions.	1						1			1	1						1			1
		1	1	6	Produce complete sentences, recognizing and correcting inappropriate fragments and run-on sentences.	1						1			1	1						1			1
		1	1	7	Correctly use frequently confused words.				1			1			1				1			1			1
		1	1	8	Ensure subject-verb and pronoun-antecedent agreement.	1			1			2			2	1			1			2			2
		1	2	1	Use punctuation to separate items in a series.				1			1			1				1			1			1
		1	2	2	Use a comma to separate an introductory element from the rest of the sentence.				1			1			1				1			1			1
		1	2	3	Use a comma to set off the words yes and no, to set off a tag question from the rest of the sentence, and to indicate direct address.	1						1			1	1						1			1
		1	2	4	Use underlining, quotation marks, or italics to indicate titles of works.	1			1			2			2	1			1			2			2
		1	2	5	Spell grade-appropriate words correctly.																				
		Total For Assessment Anchor D.1 Conventions of Standard English				7			7			14			14	7			7			14			14
		2	1	1	Expand, combine, and reduce sentences for meaning, reader/listener interest, and style.				1			1			1				1			1			1
		2	1	2	Choose words and phrases to convey ideas precisely.																				
		2	1	3	Choose punctuation for effect.	1						1			1	1						1			1
		2	1	4	Choose words and phrases for effect.	1			1			2			2	1			1			2			2
		Total For Assessment Anchor D.2 Knowledge of Language				2			2			4			4	2			2			4			4
Total For Reporting Category D						9			9			18			18	9			9			18			18

Grade 05 **English Language Arts**

Reporting Category		Assessment	Descriptor (Sub-)	Eligible Content	Focus	Points										Items									
						Student (Core			Equating Block (EB)			Total Points (Core &				Number of Items Core			EB			Total Number (Core &			
						MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total	MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total
E: Text-Dependent Analysis	E	1	1		Draw evidence from literary or informational texts to support analysis, reflection, and/or research.			4						4	4			1						1	1
		Total For Assessment Anchor E.1 Evidence-based Analysis of Text						4						4	4			1						1	1
Total For Reporting Category E								4						4	4			1						1	1

Grade 06 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
A: Literature Text	A-K	1	1	1	Cite textual evidence to support analysis of what the text says explicitly as well as inferences and/or generalizations drawn from the text.	3	3					3	3		6	3	1					3	1		4
		1	1	2	Determine a theme or central idea of a text and how it is conveyed through relevant details; provide a summary of the text distinct from personal opinions or judgments.	2						2			2	2						2			2
		1	1	3	Describe how the plot of a particular story, drama, or poem unfolds; as well as how the characters respond or change as the plot moves toward a resolution.		3						3		3		1						1		1
		Total For Assessment Anchor A-K.1 Key Ideas and Details				5	6					5	6		11	5	2					5	2		7
	A-C	2	1	1	Determine an author's purpose in a text and explain how it is conveyed in the text; explain how an author develops the point of view of the narrator or speaker in a text; describe the effectiveness of the point of view used by the author.		2						2		2		1						1		1
		2	1	2	Analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a text and contributes to the development of the theme, setting, or plot.	1						1			1	1						1			1
		2	1	3	Determine how the author uses the meaning of words or phrases, including figurative and connotative meanings, in a text; analyze the impact of a specific word choice on meaning and tone.	2						2			2	2						2			2
		Total For Assessment Anchor A-C.2 Craft and Structure				3	2					3	2		5	3	1					3	1		4
		3	1	1	Compare and contrast texts in different forms or genres in terms of their approaches to similar themes and topics.																				
		Total For Assessment Anchor A-C.3 Integration of Knowledge and Ideas																							
	A-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies.	1						1			1	1						1			1
		4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	2						2			2	2						2			2
		Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				3						3			3	3						3			3
Total For Reporting Category A						11	8					11	8		19	11	3					11	3		14

Grade 06 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
B: Informational Text	B-K	1	1	1	Cite textual evidence to support analysis of what the text says explicitly as well as inferences and/or generalizations drawn from the text.	2						2			2	2						2			2
		1	1	2	Determine a central idea of a text and how it is conveyed through relevant details; provide a summary of the text distinct from personal opinions or judgments.	2						2			2	2						2			2
		1	1	3	Analyze in detail how a key individual, event, or idea is introduced, illustrated, or elaborated in a text.	1	4					1	4		5	1	2					1	2		3
		Total For Assessment Anchor B-K.1 Key Ideas and Details				5	4					5	4		9	5	2					5	2		7
	B-C	2	1	1	Determine an author's point of view or purpose in a text and explain how it is conveyed in the text.	1						1			1	1						1			1
		2	1	2	Analyze how a particular sentence, paragraph, chapter, section, or text feature fits into the overall development of the ideas.	2	3					2	3		5	2	1					2	1		3
		2	1	3	Determine how the author uses the meaning of words or phrases, including figurative, connotative, or technical meanings, in a text.																				
		Total For Assessment Anchor B-C.2 Craft and Structure				3	3					3	3		6	3	1					3	1		4
		3	1	1	Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not.	1						1			1	1						1			1
		3	1	2	Compare and contrast one author's presentation of events with that of another.																				
		Total For Assessment Anchor B-C.3 Integration of Knowledge and Ideas				1						1			1	1						1			1
	B-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies.	1						1			1	1						1			1
		4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	2						2			2	2						2			2
		Total For Assessment Anchor B-V.4 Vocabulary Acquisition and Use				3						3			3	3						3			3
Total For Reporting Category B						12	7					12	7		19	12	3					12	3		15

Grade 06 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total	MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total
C: Writing	C	1	1		Write arguments to support claims with clear reasons and relevant evidence.																				
		1	2		Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.																				
		1	3		Write narratives to develop real or imagined experiences or events using effective techniques, relevant descriptive details, and well-structured event sequences.																				
		Total For Assessment Anchor C.1 Text Types and Purposes																							
Total For Reporting Category C																									

Grade 06 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points									Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)			Number of Items						Total Number of Items (Core & EB)			
															Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
D: Language	D	1	1	1	Ensure that pronouns are in the proper case.																			
		1	1	2	Use intensive pronouns.																			
		1	1	3	Recognize and correct inappropriate shifts in pronoun number and person.	1			1			2			2	1			1			2			2
		1	1	4	Recognize and correct vague pronouns.	1						1			1	1						1			1
		1	1	5	Recognize and correct inappropriate shifts in verb tense.																			
		1	1	6	Produce complete sentences, recognizing and correcting inappropriate fragments and run-on sentences.	1			1			2			2	1			1			2			2
		1	1	7	Correctly use frequently confused words.	1						1			1	1						1			1
		1	1	8	Ensure subject-verb and pronoun-antecedent agreement.																			
		1	2	1	Use punctuation to set of nonrestrictive/parenthetical elements.				1			1			1				1			1			1
		1	2	2	Spell correctly.	1			1			2			2	1			1			2			2
		1	2	3	Use punctuation to separate items in a series.				2			2			2				2			2			2
		Total For Assessment Anchor D.1 Conventions of Standard English				5			6			11			11	5			6			11			11
		2	1	1	Vary sentence patterns for meaning, reader/listener interest, and style.	1						1			1	1						1			1
		2	1	2	Maintain consistency in style and tone.	1			1			2			2	1			1			2			2
		2	1	3	Choose words and phrases to convey ideas precisely.	1			1			2			2	1			1			2			2
		2	1	4	Choose punctuation for effect.				1			1			1				1			1			1
		2	1	5	Choose words and phrases for effect.	1						1			1	1						1			1
		Total For Assessment Anchor D.2 Knowledge of Language				4			3			7			7	4			3			7			7
Total For Reporting Category D						9			9			18			18	9			9			18			18

Grade 06 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points									Items								
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)			Number of Items						Total Number of Items (Core & EB)			
															Core			EB					
						MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total	MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total
E: Text-Dependent	E	1	1		Draw evidence from literary or informational texts to support analysis, reflection, and/or research.			4						4	4			1						1	1
		Total For Assessment Anchor E.1 Evidence-based Analysis of Text						4						4	4			1						1	1
Total For Reporting Category E								4						4	4			1						1	1

Grade 07 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
A: Literature Text	A-K	1	1	1	Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences, conclusions, and/or generalizations drawn from the text.		3						3		3		1						1		1
		1	1	2	Determine a theme or central idea of a text and analyze its development over the course of the text; provide an objective summary of the text.	2						2			2	2						2			2
		1	1	3	Analyze how particular elements of a story, drama, or poem interact.	1	2					1	2		3	1	1					1	1		2
		Total For Assessment Anchor A-K.1 Key Ideas and Details				3	5					3	5		8	3	2					3	2		5
	A-C	2	1	1	Analyze how an author develops and contrasts the points of view of different characters or narrators in a text.	2	2					2	2		4	2	1					2	1		3
		2	1	2	Analyze how a drama's or poem's form or structure contributes to its meaning.																				
		2	1	3	Determine how the author uses the meaning of words or phrases, including figurative and connotative meanings, in a text; analyze the impact of rhymes and other repititions of sounds on a specific verse or stanza of a poem or section of a story or drama.	3						3			3	3						3			3
		Total For Assessment Anchor A-C.2 Craft and Structure				5	2					5	2		7	5	1					5	1		6
	A-C	3	1	1	Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history.																				
		Total For Assessment Anchor A-C.3 Integration of Knowledge and Ideas																							
	A-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.	2						2			2	2						2			2
		4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	1						1			1	1						1			1
		Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				3						3			3	3						3			3
Total For Reporting Category A						11	7					11	7		18	11	3					11	3		14

Grade 07 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
Informational Text	B-K	1	1	1	Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences, conclusions, and/or generalizations drawn from the text.																				
		1	1	2	Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.	2						2			2	2						2			2
		1	1	3	Analyze the interactions between individuals, events, and ideas in a text.	1	5					1	5		6	1	2					1	2		3
		Total For Assessment Anchor B-K.1 Key Ideas and Details				3	5					3	5		8	3	2					3	2		5
	B-C	2	1	1	Determine an author's point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others.	2						2			2	2						2			2
		2	1	2	Analyze the structure an author uses to organize a text, including how major sections and text features contribute to the whole and to the development of the ideas.	1						1			1	1						1			1
		2	1	3	Determine how the author uses the meaning of words or phrases, including figurative, connotative, or technical meanings, in a text; analyze the impact of a specific word choice on meaning and tone.	2						2			2	2						2			2
		Total For Assessment Anchor B-C.2 Craft and Structure				5						5			5	5						5			5

B: In	B-C	3	1	1	Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.	1	3					1	3		4	1	1					1	1		2
		3	1	2	Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts.																				
		Total For Assessment Anchor B-C.3 Integration of Knowledge and Ideas				1	3					1	3		4	1	1					1	1		2
	B-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.	1						1			1	1						1			1
		4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	2						2			2	2						2			2
		Total For Assessment Anchor B-V.4 Vocabulary Acquisition and Use				3						3			3	3						3			3
Total For Reporting Category B						12	8					12	8		20	12	3					12	3		15

Grade 07 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total	MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total
C: Writing	**C**	1	1		Write arguments to support claims with clear reasons and relevant evidence.																				
		1	2		Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.																				
		1	3		Write narratives to develop real or imagined experiences or events using effective techniques, relevant descriptive details, and well-structured event sequences.																				
		Total For Assessment Anchor C.1 Text Types and Purposes																							
Total For Reporting Category C																									

Grade 07 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
D: Language	D	1	1	1	Explain the function of phrases and clauses in general and their function in specific sentences.																				
		1	1	2	Choose among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas.	1						1			1	1						1			1
		1	1	3	Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.	1			1			2			2	1			1			2			2
		1	1	4	Recognize and correct inappropriate shifts in pronoun number and person.				1			1			1				1			1			1
		1	1	5	Recognize and correct vague pronouns.																				
		1	1	6	Recognize and correct inappropriate shifts in verb tense.	1			1			2			2	1			1			2			2
		1	1	7	Produce complete sentences, recognizing and correcting inappropriate fragments and run-on sentences.				1			1			1				1			1			1
		1	1	8	Correctly use frequently confused words.	1						1			1	1						1			1
		1	1	9	Ensure subject-verb and pronoun-antecedent agreement.																				
		1	2	1	Use a comma to separate coordinate adjectives.	1			1			2			2	1			1			2			2
		1	2	2	Spell correctly.																				
		1	2	3	Use punctuation to set of nonrestrictive/parenthetical elements.				1			1			1				1			1			1
		1	2	4	Use punctuation to separate items in a series.	1						1			1	1						1			1
		Total For Assessment Anchor D.1 Conventions of Standard English				6			6			12			12	6			6			12			12
		2	1	1	Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.	1			1			2			2	1			1			2			2
		2	1	2	Vary sentence patterns for meaning, reader/listener interest, and style.				1			1			1				1			1			1
		2	1	3	Maintain consistency in style and tone.				1			1			1				1			1			1
		2	1	4	Choose punctuation for effect.																				
		2	1	5	Choose words and phrases for effect.	2						2			2	2						2			2
		Total For Assessment Anchor D.2 Knowledge of Language				3			3			6			6	3			3			6			6
Total For Reporting Category D						9			9			18			18	9			9			18			18

Grade 07 **English Language Arts**

Reporting Category		Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total	MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total
E: Text-Dependent Analysis	**E**	1	1		Draw evidence from literary or informational texts to support analysis, reflection, and/or research.			4						4	4			1						1	1
		Total For Assessment Anchor E.1 Evidence-based Analysis of Text						4						4	4			1						1	1
Total For Reporting Category E								4						4	4			1						1	1

Grade 08 **English Language Arts**

Reporting Category		Assessment Anchor	DesESRiptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
A: Literature Text	A-K	1	1	1	Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences, conclusions, and/or generalizations drawn from the text.		3						3		3		1						1		1
	A-K	1	1	2	Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; provide an objective summary of the text.	2						2			2	2						2			2
	A-K	1	1	3	Analyze how particular lines of dialogue or incidents in a story, drama, or poem propel the action, reveal aspects of a character, or provoke a decision.	2	5					2	5		7	2	2					2	2		4
		Total For Assessment Anchor A-K.1 Key Ideas and Details				4	8					4	8		12	4	3					4	3		7
	A-C	2	1	1	Analyze how differences in the points of view of the characters and the audience or reader ESReate such effects as suspense or humor.	1	2					1	2		3	1	1					1	1		2
	A-C	2	1	2	Compare and contrast the structure of two or more texts, and analyze how the differing structure of each text contributes to its meaning and style.																				
	A-C	2	1	3	Determine how the author uses the meaning of words or phrases, including figurative and connotative meanings, in a text; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.	2						2			2	2						2			2
		Total For Assessment Anchor A-C.2 ESRaft and Structure				3	2					3	2		5	3	1					3	1		4
	A-C	3	1	1	Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths and traditional stories, including desESRibing how the material is rendered new.																				
		Total For Assessment Anchor A-C.3 Integration of Knowledge and Ideas																							
	A-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on grade 8 reading and content, choosing flexibly from a range of strategies.	2						2			2	2						2			2
	A-V	4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	1						1			1	1						1			1
		Total For Assessment Anchor A-V.4 Vocabulary Acquisition and Use				3						3			3	3						3			3
Total For Reporting Category A						10	10					10	10		20	10	4					10	4		14

Grade 08 **English Language Arts**

Reporting Category		Assessment Anchor	DesESRiptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
B: Informational Text	B-K	1	1	1	Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences, conclusions and/or generalizations drawn from the text.	1						1			1	1						1			1
	B-K	1	1	2	Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.	1	2					1	2		3	1	1					1	1		2
	B-K	1	1	3	Analyze how a text makes connections among and distinctions between individuals, ideas, or events.		3						3		3		1						1		1
		Total For Assessment Anchor B-K.1 Key Ideas and Details				2	5					2	5		7	2	2					2	2		4
	B-C	2	1	1	Determine an author's point of view or purpose in a text and analyze how the author acknowledges and responds to conflicting evidence or viewpoints.	1						1			1	1						1			1
	B-C	2	1	2	Analyze in detail the structure of a specific paragraph in a text, including the role of particular sentences in developing and refining a key concept.	2						2			2	2						2			2
	B-C	2	1	3	Determine how the author uses the meaning of words or phrases, including figurative, connotative, or technical meanings, in a text; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.	2						2			2	2						2			2
		Total For Assessment Anchor B-C.2 ESRaft and Structure				5						5			5	5						5			5
	B-C	3	1	1	Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced.	4						4			4	4						4			4
	B-C	3	1	2	Analyze a case in which two or more texts provide conflicting information on the same topic, and identify where the texts disagree on matters of fact or interpretation.																				
		Total For Assessment Anchor B-C.3 Integration of Knowledge and Ideas				4						4			4	4						4			4
	B-V	4	1	1	Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on grade 8 reading and content, choosing flexibly from a range of strategies.	1						1			1	1						1			1
	B-V	4	1	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	1						1			1	1						1			1
		Total For Assessment Anchor B-V.4 Vocabulary Acquisition and Use				2						2			2	2						2			2
Total For Reporting Category B						13	5					13	5		18	13	2					13	2		15

Grade 08 **English Language Arts**

Reporting Category		Assessment Anchor	DesESRiptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items						Total Number of Items (Core & EB)			
																Core			EB						
						MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total	MC	ESR	WP	MC	ESR	WP	MC	ESR	WP	Total
C: Writing	C	1	1		Write arguments to support claims with clear reasons and relevant evidence.																				
	C	1	2		Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.																				
	C	1	3		Write narratives to develop real or imagined experiences or events using effective techniques, relevant desESRiptive details, and well-structured event sequences.																				
		Total For Assessment Anchor C.1 Text Types and Purposes																							
Total For Reporting Category C																									

Grade 08 **English Language Arts**

Reporting Category		Assessment Anchor	DesESRiptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items Core			Number of Items EB			Total Number of Items (Core & EB)			
						MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total	MC	ESR	OE	MC	ESR	OE	MC	ESR	OE	Total
D: Language	D	1	1	1	Explain the function of verbals in general and their function in particular sentences.	1			1			2			2	1			1			2			2
	D	1	1	2	Form and use verbs in the active and passive voice.																				
	D	1	1	3	Form and use verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood.																				
	D	1	1	4	Recognize and correct inappropriate shifts in verb voice and mood.				1			1			1				1			1			1
	D	1	1	5	Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.	1						1			1	1						1			1
	D	1	1	6	Recognize and correct inappropriate shifts in pronoun number and person.																				
	D	1	1	7	Recognize and correct vague pronouns.																				
	D	1	1	8	Recognize and correct inappropriate shifts in verb tense.				1			1			1				1			1			1
	D	1	1	9	Produce complete sentences, recognizing and correcting inappropriate fragments and run-on sentences.				1			1			1				1			1			1
	D	1	1	10	Correctly use frequently confused words.																				
	D	1	1	11	Ensure subject-verb and pronoun-antecedent agreement.				1			1			1				1			1			1
	D	1	2	1	Use punctuation to indicate a pause or a break.	1			1			2			2	1			1			2			2
	D	1	2	2	Use an ellipsis to indicate an omission.	1						1			1	1						1			1
	D	1	2	3	Spell correctly.																				
	D	1	2	4	Use punctuation to set of nonrestrictive/parenthetical elements.	1			1			2			2	1			1			2			2
	D	1	2	5	Use punctuation to separate items in a series.																				
		Total For Assessment Anchor D.1 Conventions of Standard English				5			7			12			12	5			7			12			12
	D	2	1	1	Use verbs in the active and passive voice and in the conditional and subjunctive mood to achieve particular effects.	1						1			1	1						1			1
	D	2	1	2	Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.	1			1			2			2	1			1			2			2
	D	2	1	3	Vary sentence patterns for meaning, reader/listener interest, and style.	1			1			2			2	1			1			2			2
	D	2	1	4	Maintain consistency in style and tone.	1						1			1	1						1			1
	D	2	1	5	Choose punctuation for effect.																				
	D	2	1	6	Choose words and phrases for effect.																				
		Total For Assessment Anchor D.2 Knowledge of Language				4			2			6			6	4			2			6			6
Total For Reporting Category D						9			9			18			18	9			9			18			18

Grade 08 **English Language Arts**

Reporting Category		Assessment Anchor	DesESRiptor (Sub-anchor)	Eligible Content	Focus	Points										Items									
						Student Scores (Core Points)			Equating Block (EB)			Total Points (Core & EB)				Number of Items Core			Number of Items EB			Total Number of Items (Core & EB)			
						MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total	MC	ESR	TDA	MC	ESR	TDA	MC	ESR	TDA	Total
E: Text-Dependent Analysis	E	1	1		Draw evidence from literary or informational texts to support analysis, reflection, and/or research.			4						4	4			1						1	1
		Total For Assessment Anchor E.1 Evidence-based Analysis of Text						4						4	4			1						1	1
Total For Reporting Category E								4						4	4			1						1	1

Grade 04 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items		
												Core		EB		(Core & EB)		
					MC	SCR	MC	SCR	MC	SCR	Total	MC	SCR	MC	SCR	MC	SCR	Total
	1	1	1	Distinguish between a scientific fact and an opinion, providing clear explanations that connect observations and results (e.g., a scientific fact can be supported by making observations).	1	2	1		2	2	4	1	1	1		2	1	3
	1	1	2	Identify and describe examples of common technological changes past to present in the community (e.g., energy production, transportation, communications,	1				1		1	1				1		1
	1	3	1	Observe and record change by using time and measurement.	2				2		2	2				2		2
	1	3	2	Describe relative size, distance, or motion.														
	1	3	3	Observe and describe the change to objects caused by temperature change or light.	1				1		1	1				1		1
	1	3	4	Explain what happens to a living organism when its food supply, access to water, shelter, or space is changed (e.g., it might die, migrate, change behavior, eat something else).														
	1	3	5	Provide examples, predict, or describe how everyday human activities (e.g., solid waste production, food production and consumption, transportation, water consumption, energy production and use) may change the environment.	1				1		1	1				1		1
	Total For Assessment Anchor A.1 Reasoning and Analysis				6	2	1		7	2	9	6	1	1		7	1	8

A	2	1	1	Generate questions about objects, organisms, or events that can be answered through scientific investigations.	2		1		3		3	2		1		3		3
	2	1	2	Design and describe an investigation (a fair test) to test one variable.			1		1		1			1		1		1
	2	1	3	Observe a natural phenomenon (e.g., weather changes, length of daylight/night, movement of shadows, animal migrations, growth of plants), record observations, and then make a prediction based on those observations.	1				1		1	1				1		1
	2	1	4	State a conclusion that is consistent with the information/data.	1		1		2		2	1		1		2		2
	2	2	1	Identify appropriate tools or instruments for specific tasks and describe the information they can provide (e.g., measuring: length - ruler, mass - balance scale, volume - beaker, temperature - thermometer; making observations: hand lens, binoculars, telescope).	1				1		1	1				1		1
	Total For Assessment Anchor A.2 Processes, Procedures, and Tools of Scientific Investigations				5		3		8		8	5		3		8		8

3	1	1	Categorize systems as either natural or human-made (e.g., ballpoint pens, simple electrical circuits, plant anatomy, water cycle).	1	2			1	2	3	1	1			1	1	2
3	1	2	Explain a relationship between the living and nonliving components in a system (e.g., food web, terrarium).	1		1		2		2	1		1		2		2
3	1	3	Categorize the parts of an ecosystem as either living or nonliving and describe their roles in the system.	1				1		1	1				1		1
3	1	4	Identify the parts of the food and fiber systems as they relate to agricultural products from the source to the consumer.														
3	2	1	Identify what different models represent (e.g., maps show physical features, directions, distances; globes represent Earth; drawings of watersheds depict terrain; dioramas show ecosystems; concept maps show relationships of ideas).Identify what different models represent														
3	2	2	Use models to make observations to explain how systems work (e.g., water cycle, Sun-Earth-Moon system).	3				3		3	3				3		3
3	2	3	Use appropriate, simple modeling tools and techniques to describe or illustrate a system (e.g., two cans and string to model a communications system, terrarium to model an ecosystem).														
3	3	1	Identify and describe observable patterns (e.g., growth patterns in plants, weather, water cycle).	1		1		2		2	1		1		2		2
3	3	2	Predict future conditions/events based on observable patterns (e.g., day/night, seasons, sunrise/sunset, lunar phases).	2		1		3		3	2		1		3		3
Total For Assessment Anchor A.3 Systems, Models, and Patterns				9	2	3		12	2	14	9	1	3		12	1	13
Total For Reporting Category A: Nature of Science				20	4	7		27	4	31	20	2	7		27	2	29

Grade 04 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	SCR	MC	SCR	MC	SCR	Total	MC	SCR	MC	SCR	MC	SCR	Total
	1	1	1	Identify life processes of living things (e.g., growth, digestion, respiration).			1		1		1			1		1		1
	1	1	2	Compare similar functions of external characteristics of organisms (e.g., anatomical characteristics: appendages, type of covering, body segments).														
	1	1	3	Describe basic needs of plants and animals (e.g., air, water, food).														
	1	1	4	Describe how different parts of a living thing work together to provide what the organism needs (e.g., parts of plants: roots, stems, leaves).														
	1	1	5	Describe the life cycles of different organisms (e.g., moth, grasshopper, frog, seed-producing plant).	1	2			1	2	3	1	1			1	1	2
	Total For Assessment Anchor B.1 Structures and Functions of Organisms				1	2	1		2	2	4	1	1	1		2	1	3
	2	1	1	Identify characteristics for plant and animal survival in different environments (e.g., wetland, tundra, desert, prairie, deep ocean, forest).	1				1		1	1				1		1
	2	1	2	Explain how specific adaptations can help a living organism survive (e.g., protective coloration, mimicry, leaf sizes and shapes, ability to catch or retain water).			1		1		1			1		1		1
	2	2	1	Identify physical characteristics (e.g., height, hair color, eye color, attached earlobes, ability to roll tongue) that appear in both parents and could be passed on to offspring.	1				1		1	1				1		1
	Total For Assessment Anchor B.2 Continuity of Life				2		1		3		3	2		1		3		3

B	3	1	1	Describe the living and nonliving components of a local ecosystem (e.g., lentic and lotic systems, forest, cornfield, grasslands, city park, playground).	1				1		1	1				1		1
	3	1	2	Describe interactions between living and nonliving components (e.g. plants – water, soil, sunlight, carbon dioxide, temperature; animals – food, water, shelter, oxygen, temperature) of a local ecosystem.	1				1		1	1				1		1
	3	2	1	Describe what happens to a living thing when its habitat is changed.														
	3	2	2	Describe and predict how changes in the environment (e.g., fire, pollution, flood, building dams) can affect systems.														
	3	2	3	Explain and predict how changes in seasons affect plants, animals, or daily human life (e.g., food availability, shelter, mobility).	1				1		1	1				1		1
	3	3	1	Identify everyday human activities (e.g., driving, washing, eating, manufacturing, farming) within a community that depend on the natural environment.														
	3	3	2	Describe the human dependence on the food and fiber systems from production to consumption (e.g., food, clothing, shelter, products).														
	3	3	3	Identify biological pests (e.g., fungi – molds, plants – foxtail, purple loosestrife, Eurasian water milfoil; animals – aphides, ticks, zebra mussels, starlings, mice) that compete with humans for resources.														
	3	3	4	Identify major land uses in the urban, suburban and rural communities (e.g., housing, commercial, recreation).														
	3	3	5	Describe the effects of pollution (e.g., litter) in the community.														
	Total For Assessment Anchor B.3 Ecological Behavior and Systems				3				3		3	3				3		3
Total For Reporting Category B: Biology					6	2	2		8	2	10	6	1	2		8	1	9

Grade 04 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	SCR	MC	SCR	MC	SCR	Total	MC	SCR	MC	SCR	MC	SCR	Total
C	1	1	1	Use physical properties [e.g., mass, shape, size, volume, color, texture, magnetism, state to describe matter.			1		1		1			1		1		1
	1	1	2	Categorize/group objects using physical characteristics.														
	Total For Assessment Anchor C.1 Structures, Properties, and Interaction of Matter and Energy						1		1		1			1		1		1
	2	1	1	Identify energy forms, energy transfer, and energy examples (e.g., light, heat, electrical).	1				1		1	1				1		1
	2	1	2	Describe the flow of energy through an object or system (e.g., feeling radiant heat from a light bulb, eating food to get energy, using a battery to light a bulb or run a fan).	2				2		2	2				2		2
	2	1	3	Recognize or illustrate simple direct current series and parallel circuits composed of batteries, light bulbs (or other common loads), wire, and on/off switches.														
	2	1	4	Identify characteristics of sound (e.g., pitch, loudness, reflection).														
	Total For Assessment Anchor C.2 Forms, Sources, Conversions, and Transer of Energy				3				3		3	3				3		3
	3	1	1	Describe changes in motion caused by forces (e.g., magnetic, pushes or pulls, gravity, friction).	1	2			1	2	3	1	1			1	1	2
	3	1	2	Compare the relative movement of objects or describe types of motion that are evident (e.g., bouncing ball, moving in a straight line, back and forth, merry-go-round).	1				1		1	1				1		1
	3	1	3	Describe the position of an object by locating it relative to another object or a stationary background (e.g., geographic direction, left, up).	1				1		1	1				1		1
	Total For Assessment Anchor C.3 Principles of Motion and Force				3	2			3	2	5	3	1			3	1	4
Total For Reporting Category C: Physical Sciences					6	2	1		7	2	9	6	1	1		7	1	8

Grade 04 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items		
												Core		EB		(Core & EB)		
					MC	SCR	MC	SCR	MC	SCR	Total	MC	SCR	MC	SCR	MC	SCR	Total
D	1	1	1	Describe how prominent Earth features in Pennsylvania (e.g., mountains, valleys, caves, sinkholes, lakes, rivers) were formed.	1		1		2		2	1		1		2		2
	1	1	2	Identify various Earth structures (e.g., mountains, watersheds, peninsulas, lakes, rivers, valleys) through the use of models.														
	1	1	3	Describe the composition of soil as weathered rock and decomposed organic remains.	1				1		1	1				1		1
	1	2	1	Identify products and by-products of plants and animals for human use (e.g., food, clothing, building materials, paper products).	1				1		1	1				1		1
	1	2	2	Identify the types and uses of Earth materials for renewable, nonrenewable, and reusable products (e.g., human-made products: concrete, paper, plastics, fabrics).														
	1	2	3	Recognize ways that humans benefit from the use of water resources (e.g., agriculture, energy, recreation).														
	1	3	1	Describe types of freshwater and saltwater bodies (e.g., lakes, rivers, wetlands, oceans).														
	1	3	2	Explain how water goes through phase changes (i.e., evaporation, condensation, freezing, and melting).														
	1	3	3	Describe or compare lentic systems (i.e., ponds, lakes, and bays) and lotic systems (i.e., streams, creeks, and rivers).	1				1		1	1				1		1
	1	3	4	Explain the role and relationship of a watershed or a wetland on water sources (e.g., water storage, groundwater recharge, water filtration, water source, water cycle).	1	2	1		2	2	4	1	1	1		2	1	3
	Total For Assessment Anchor D.1 Earth Features and Processes that Change Earth and its Resources				5	2	2		7	2	9	5	1	2		7	1	8

2	1	1	Identify basic cloud types (i.e., cirrus, cumulus, stratus, and cumulonimbus) and make connections to basic elements of weather (e.g., changes in temperature, precipitation).																
2	1	2	Identify weather patterns from data charts or graphs of the data (e.g., temperature, wind direction, wind speed, cloud types, precipitation).																
2	1	3	Identify appropriate instruments (i.e., thermometer, rain gauge, weather vane, anemometer, and barometer) to study weather and what they measure.																
Total For Assessment Anchor D.2 Weather, Climate, and Atmospheric Processes																			
3	1	1	Describe motions of the Sun - Earth - Moon system.																
3	1	2	Explain how the motion of the Sun - Earth - Moon system relates to time (e.g., days, months, years).	1				1		1	1				1		1		
3	1	3	Describe the causes of seasonal change as they relate to the revolution of Earth and the tilt of Earth's axis.																
Total For Assessment Anchor D.3 Composition and Structure of the Universe				1				1		1	1				1		1		
Total For Reporting Category D: Earth and Space Sciences				6	2	2		8	2	10	6	1	2		8	1	9		

Grade 08 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items		
												Core		EB		(Core & EB)		
					MC	SCR	MC	SCR	MC	SCR	Total	MC	SCR	MC	SCR	MC	SCR	Total
	1	1	1	Distinguish between a scientific theory and an opinion, explaining how a theory is supported with evidence, or how new data/information may change existing theories and practices														
	1	1	2	Explain how certain questions can be answered through scientific inquiry and/or technological design.	1				1		1	1				1		1
	1	1	3	Use evidence, such as observations or experimental results, to support inferences about a relationship.														
	1	1	4	Develop descriptions, explanations, predictions, and models using evidence.	1				1		1	1				1		1
	1	2	1	Describe the positive and negative, intended and unintended, effects of specific scientific results or technological developments (e.g., air/space travel, genetic engineering, nuclear fission/fusion, artificial intelligence, lasers, organ transplants).	1				1		1	1				1		1
	1	2	2	Identify environmental issues and explain their potential long-term health effects (e.g., pollution, pest controls, vaccinations).	1		1		2		2	1		1		2		2

1	2	3	Describe fundamental scientific or technological concepts that could solve practical problems (e.g., Newton's laws of motion, Mendelian genetics).	1				1		1	1				1		1
1	2	4	Explain society's standard of living in terms of technological advancements and how these advancements impact on agriculture (e.g., transportation, processing, production, storage).			1		1		1			1		1		1
1	3	1	Use ratio to describe change (e.g., percents, parts per million, grams per cubic centimeter, mechanical advantage).	1		1		2		2	1		1		2		2
1	3	2	Use evidence, observations, or explanations to make inferences about change in systems over time (e.g., carrying capacity, succession, population dynamics, loss of mass in chemical reactions, indicator fossils in geologic time scale) and the variables affecting these changes.		2				2	2		1				1	1
1	3	3	Examine systems changing over time, identifying the possible variables causing this change, and drawing inferences about how these variables affect this change.	1		1		2		2	1		1		2		2
1	3	4	Given a scenario, explain how a dynamically changing environment provides for the sustainability of living systems.														
Total For Assessment Anchor A.1 Reasoning and Analysis				7	2	4		11	2	13	7	1	4		11	1	12

A: Nature of Science	2	1	1	Use evidence, observations, or a variety of scales (e.g., mass, distance, volume, temperature) to describe relationships.	1	2			1	2	3	1	1			1	1	2
	2	1	2	Use space/time relationships, define concepts operationally, raise testable questions, or formulate hypotheses.	1				1		1	1				1		1
	2	1	3	Design a controlled experiment by specifying how the independent variables will be manipulated, how the dependent variable will be measured, and which variables will be held constant.			1		1		1			1		1		1
	2	1	4	Interpret data/observations; develop relationships among variables based on data/observations to design models as solutions.														
	2	1	5	Use evidence from investigations to clearly communicate and support conclusions.	2				2		2	2				2		2
	2	1	6	Identify a design flaw in a simple technological system and devise possible working solutions.	2				2		2	2				2		2
	2	2	1	Describe the appropriate use of instruments and scales to accurately and safely measure time, mass, distance, volume, or temperature under a variety of conditions.														
	2	2	2	Apply appropriate measurement systems (e.g., time, mass, distance, volume, temperature) to record and interpret observations under varying conditions.	1				1		1	1				1		1
	2	2	3	Describe ways technology (e.g., microscope, telescope, micrometer, hydraulics, barometer) extends and enhances human abilities for specific purposes.	1				1		1	1				1		1
	Total For Assessment Anchor A.2 Processes, Procedures, and Tools of Scientific Investigations				8	2	1		9	2	11	8	1	1		9	1	10

3	1	1	Describe a system (e.g., watershed, circulatory system, heating system, agricultural system) as a group of related parts with specific roles that work together to achieve an observed result.															
3	1	2	Explain the concept of order in a system [e.g., (first to last: manufacturing steps, trophic levels); (simple to complex: cell, tissue, organ, organ system)].	2				2		2	2				2		2
3	1	3	Distinguish between system inputs, system processes, system outputs, and feedback (e.g., physical, ecological, biological, informational).															
3	1	4	Distinguish between open loop (e.g., energy flow, food web) and closed loop (e.g., materials in the nitrogen and carbon cycles, closed-switch) systems.															
3	1	5	Explain how components of natural and human-made systems play different roles in a working system.															
3	2	1	Describe how scientists use models to explore relationships in natural systems (e.g., an ecosystem, river system, the solar system).			1		1		1			1		1		1
3	2	2	Describe how engineers use models to develop new and improved technologies to solve problems.	2				2		2	2				2		2
3	2	3	Given a model showing simple cause- and-effect relationships in a natural system, predict results that can be used to test the assumptions in the model (e.g., photosynthesis, water cycle, diffusion, infiltration).	1				1		1	1				1		1
3	3	1	Identify and describe patterns as repeated processes or recurring elements in human-made systems (e.g., trusses, hub-and-spoke system in communications and transportation systems, feedback controls in regulated systems).															
3	3	2	Describe repeating structure patterns in nature(e.g., veins in a leaf, tree rings, crystals, water waves) or periodic patterns (e.g., daily, monthly, annually).															
Total For Assessment Anchor A.3 Systems, Models, and Patterns				5		1		6		6	5		1		6		6
Total For Reporting Category A				20	4	6		26	4	30	20	2	6		26	2	28

Grade 08 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items		
												Core		EB		(Core & EB)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Biological Sciences	1	1	1	Describe the structures of living things that help them function effectively in specific ways (e.g., adaptations, characteristics).														
	1	1	2	Compare similarities and differences in internal structures of organisms (e.g., invertebrate/vertebrate, vascular/nonvascular, single-celled/multi-celled) and external structures (e.g., appendages, body segments, type of covering, size, shape).														
	1	1	3	Apply knowledge of characteristic structures to identify or categorize organisms (i.e., plants, animals, fungi, bacteria, and protista).	1				1		1	1				1		1
	1	1	4	Identify the levels of organization from cell to organism and describe how specific structures (parts), which underlie larger systems, enable the system to function as a whole.														
	Total For Assessment Anchor B.1 Structures and Functions of Organisms				1				1		1	1				1		1
	2	1	1	Explain how inherited structures or behaviors help organisms survive and reproduce in different environments.														
	2	1	2	Explain how different adaptations in individuals of the same species may affect survivability or reproduction success.														
	2	1	3	Explain that mutations can alter a gene and are the original source of new variations.	1				1		1	1				1		1
	2	1	4	Describe how selective breeding or biotechnology can change the genetic makeup of organisms.														
	2	1	5	Explain that adaptations are developed over long periods of time and are passed from one generation to another														
	2	2	1	Identify and explain differences between inherited and acquired traits.														
	2	2	2	Recognize that the gene is the basic unit of inheritance, that there are dominant and recessive genes, and that traits are inherited.														
	Total For Assessment Anchor B.2 Continuity of Life				1				1		1	1				1		1

3	1	1	Explain the flow of energy through an ecosystem (e.g., food chains, food webs).	1				1		1	1				1		1
3	1	2	Identify major biomes and describe abiotic and biotic components (e.g., abiotic: different soil types, air, water sunlight; biotic: soil microbes, decomposers).														
3	1	3	Explain relationships among organisms (e.g., producers/consumers, predator/prey) in an ecosystem.		2				2	2		1				1	1
3	2	1	Use evidence to explain factors that affect changes in populations (e.g., deforestation, disease, land use, natural disaster, invasive species).			1		1		1			1		1		1
3	2	2	Use evidence to explain how diversity affects the ecological integrity of natural systems			1		1		1			1		1		1
3	2	3	Describe the response of organisms to environmental changes (e.g., changes in climate, hibernation, migration, coloration) and how those changes affect survival.														
3	3	1	Explain how human activities may affect local, regional, and global environments.		2				2	2		1				1	1
3	3	2	Explain how renewable and nonrenewable resources provide for human needs (i.e., energy, food, water, clothing, and shelter).														
3	3	3	Describe how waste management affects the environment (e.g., recycling, composting, landfills, incineration, sewage treatment).	1				1		1	1				1		1
3	3	4	Explain the long-term effects of using integrated pest management (e.g., herbicides, natural predators, biogenetics) on the environment.														
Total For Assessment Anchor B.3 Ecological Behavior and Systems				2	4	2		4	4	8	2	2	2		4	2	6
Total For Reporting Category B				4	4	2		6	4	10	4	2	2		6	2	8

Grade 08 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C: Physical Sciences	1	1	1	Explain the differences among elements, compounds, and mixtures.	1				1		1	1				1		1
	1	1	2	Use characteristic physical or chemical properties to distinguish one substance from another (e.g., density, thermal expansion/contraction, freezing/melting points, streak test).	2				2		2	2				2		2
	1	1	3	Identify and describe reactants and products of simple chemical reactions.	1				1		1	1				1		1
	Total For Assessment Anchor C.1 Structures, Properties, and Interaction of Matter and Energy				4				4		4	4				4		4
	2	1	1	Distinguish among forms of energy (e.g., electrical, mechanical, chemical, light, sound, nuclear) and sources of energy (i.e., renewable and nonrenewable energy)														
	2	1	2	Explain how energy is transferred from one place to another through convection, conduction, or radiation.														
	2	1	3	Describe how one form of energy (e.g., electrical, mechanical, chemical, light, sound, nuclear) can be converted into a different form of energy.			1		1		1			1		1		
	2	2	1	Describe the Sun as the major source of energy that impacts the environment.														
	2	2	2	Compare the time span of renewability for fossil fuels and the time span of renewability for alternative fuels.	1				1		1	1				1		
	2	2	3	Describe the waste (i.e., kind and quantity) derived from the use of renewable and nonrenewable resources and their potential impact on the environment.	1				1		1	1				1		
	Total For Assessment Anchor C.2 Forms, Sources, Conversions, and Transer of Energy				2		1		3		3	2		1		3		

3	1	1	Describe forces acting on objects (e.g., friction, gravity, balanced versus unbalanced).															
3	1	2	Distinguish between kinetic and potential energy.	2		1		3		3	2		1		3		3	
3	1	3	Explain that mechanical advantage helps to do work (physics) by either changing a force or changing the direction of the applied force (e.g., simple machines, hydraulic systems).															
Total For Assessment Anchor C.3 Principles of Motion and Force				2		1		3		3	2		1		3		3	
Total For Reporting Category C				8		2		10		10	8		2		10		7	

Grade 08 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items		
												Core		EB		(Core & EB)		
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
	1	1	1	Explain the rock cycle as changes in the solid earth and rock types found in Pennsylvania (igneous – granite, basalt, pumice; sedimentary – limestone, sandstone, shale, coal; and metamorphic – slate, quartzite, marble, gneiss).			1		1		1			1		1		1
	1	1	2	Describe natural processes that change Earth's surface (e.g., landslides, volcanic eruptions, earthquakes, mountain building, new land being formed, weathering, erosion, sedimentation, soil formation).		2				2	2		1				1	1
	1	1	3	Identify soil types (i.e., humus, topsoil, subsoil, loam, loess, and parent material) and their characteristics (i.e., particle size, porosity, and permeability) found in different biomes and in Pennsylvania, and explain how they formed.	1				1		1	1				1		1
	1	1	4	Explain how fossils provide evidence about plants and animals that once lived throughout Pennsylvania's history (e.g., fossils provide evidence of different environments).	1				1		1	1				1		1
	1	2	1	Describe a product's transformation process from production to consumption (e.g., prospecting, propagating, growing, maintaining, adapting, treating, converting, distributing, disposing) and explain the process's potential impact on Earth's resources.														
	1	2	2	Describe potential impacts of human-made processes (e.g., manufacturing, agriculture, transportation, mining) on Earth's resources, both nonliving (i.e., air, water, or earth materials) and living (i.e., plants and animals).														

D: Earth and Space Sciences	1	3	1	Describe the water cycle and the physical processes on which it depends (i.e., evaporation, condensation, precipitation, transpiration, runoff, infiltration, energy inputs, and phase changes).														
	1	3	2	Compare and contrast characteristics of freshwater and saltwater systems on the basis of their physical characteristics (i.e., composition, density, and electrical conductivity) and their use as natural resources.			1		1		1			1		1		1
	1	3	3	Distinguish among different water systems (e.g., wetland systems, ocean systems, river systems, watersheds) and describe their relationships to each other as well as to landforms.	1				1		1	1				1		1
	1	3	4	Identify the physical characteristics of a stream and how these characteristics determine the types of organisms found within the stream environment (e.g., biological diversity, water quality, flow rate, tributaries, surrounding watershed).														
	Total For Assessment Anchor D.1 Earth Features and Processes that Change Earth and its Resources				3	2	2		5	2	7	3	1	2		5	1	6
	2	1	1	Explain the impact of water systems on the local weather or the climate of a region (e.g., lake effect snow, land/ocean breezes).	1				1		1	1				1		1
	2	1	2	Identify how global patterns of atmospheric movement influence regional weather and climate.														
	2	1	3	Identify how cloud types, wind directions, and barometric pressure changes are associated with weather patterns in different regions of the country.														
	Total For Assessment Anchor D.2 Weather, Climate, and Atmospheric Processes				1				1		1	1				1		1

	3	1	1	Describe patterns of Earth's movements (i.e., rotation and revolution) and the Moon's movements (i.e., phases, eclipses, and tides) in relation to the Sun.															
	3	1	2	Describe the role of gravity as the force that governs the movement of the solar system and universe.	1				1		1	1				1		1	
	3	1	3	Compare and contrast characteristics of celestial bodies found in the solar system (e.g., moons, asteroids, comets, meteors, inner and outer planets).	1				1		1	1				1		1	
	Total For Assessment Anchor D.3 Composition and Structure of the Universe				2				2		2	2				2		2	
Total For Reporting Category D					6	2	2		8	2	10	6	1	2		8	1	9	

APPENDIX C: ITEM AND TEST DEVELOPMENT PROCESS

ITEM AND TEST DEVELOPMENT PROCESS FOR PSSA

Step	Description
1. Review Guiding Documentation	Each year item and test development specialists meet internally to review all guiding documentation related to the PSSA. Documentation reviewed includes the test design blueprints, the Pennsylvania Assessment Anchors and Eligible Content, the test item specifications, the test style specifications (style guide), and all test content descriptions.
2. Meet with PDE to Confirm Understanding of Program	The goal of the meeting each year is to ensure that item and test development teams have a clear understanding of PDE's vision for test development. A successful development cycle requires a clear understanding of Pennsylvania's content-area test specifications and of any unique interpretations of the Pennsylvania Assessment Anchors (if any).
3. Create Preliminary Test Item Development Plan	Item and test development specialists generate a preliminary development plan which includes an overview of the program, the internal and external (PDE) review and approval processes, a projected schedule for development of test items—including the number of test items to be developed for review by PDE and subsequent review by the committees of Pennsylvania educators. Item and test development specialists also generate strategies for securing passages and developing science scenarios and passage-based items, etc.
4. Meet with PDE to Finalize Test Item Development Plan	Over the course of the meeting, item and test development specialists verify all steps in the development process including timelines and schedules for test item/test development.
5. Analyze Item Bank	Existing test items in the current PSSA Item Bank are reviewed for technical psychometric quality as well as for their match to the Assessment Anchors. During this phase, test development specialists also make a tally of the test items by Assessment Anchor—including test development specialists' best thinking regarding the number of usable test items in the existing item bank. A tally is also made of the number of usable passages, as well as other stimulus prompts in the bank, including science scenarios.
6. Refine Test Item Development Plan to Include Writers and Subcontractors	Item and test development specialists identify the writers who will write the test items (test development specialists or other professional item writers, subcontractors, etc.), the estimated number of writers needed, the qualifications of writers, and the approximate number of test items to be submitted by each source.
7. Train Item Writers	Item and test development specialists train item writers, as needed. Item writers who have written for the PSSA in the past receive updated information, as needed.
8. Write and Review Items	Test items are written by item writers after training is complete, and feedback is provided by the item and test development specialists to item writers on a regular basis. As test items are written, they are reviewed and edited in a series of internal reviews. Item and test development specialists review and edit items to include, but not limited to, the following: match to Assessment Anchor/Eligible Content, relevance to purpose, accuracy of content, item difficulty, interest level, grade appropriateness, depth of knowledge and cognitive complexity, adherence to the principles of Universal Design, and freedom from issues of bias/fairness/sensitivity. At the same time, the process of procuring permissions also begins, including securing permissions for passages, art, etc.
9. Enter Test Items into Database	Upon acceptance from item writers, test items are entered into the item management system, IDEAS (*Item Development and Educational Assessment System*). Item data stored in the system database includes, but is not limited to, the following: readability, cognitive level, estimated level of difficulty, alignment to Assessment Anchors, and correlation to stimulus prompts and passages.
10. Prepare Item Set for Sample Item Review by PDE	Item and test development specialists prepare a subset of the items for review by PDE.

Step	Description
11. PDE Conducts Sample Item Review	After a subset of the items is submitted to PDE for review, PDE reviews the items and provides feedback to item and test development teams via a conference call. Items are revised per PDE feedback.
12. Continue to Write and Review Items	The remaining items are written, and feedback is provided by the item and test development specialists to item writers on a regular basis. Items are entered into the item management system, IDEAS (*Item Development and Educational Assessment System*) (See step 8 and step 9).
13. Review Items Prior to Test Item Review and Validation Sessions	Prior to New Item Content Review, all items are submitted to PDE for review. Item and test development specialists incorporate all PDE feedback, and PDE-requested edits to items are made.
14. Prepare for Test Item Review Sessions (the New Item Content Review and the Bias, Fairness, and Sensitivity Review)	Item and test development specialists prepare all items and stimulus passages for review by the New Item Content Review Committee (consisting of Pennsylvania educators) and by the separate Bias, Fairness, and Sensitivity Committee (consisting of a panel of experts including Pennsylvania educators). Item and test development specialists also prepare training materials needed for training committee members to review items for content or for bias, fairness, and sensitivity issues. All training materials and other ancillary materials (e.g., agendas, presentations, etc.) are also developed and then submitted to PDE for review and approval. Invitations are sent to Pennsylvania educators and national experts from PDE-approved committee lists.
15. Conduct Test Item Review Sessions (the New Item Content Review and the Bias, Fairness, and Sensitivity Review)	Committees of Pennsylvania educators and national experts review items in two meetings: one addressing item content and quality, the other addressing bias, fairness, and sensitivity. PDE, with support from item and test development specialists, presents training on how to review new test items for content considerations or bias/fairness/sensitivity issues. At the New Item Content Review, suggested edits to test items are made and/or replacement test items are written during the actual item review so that both the committee and the PDE are able to observe changes to the test items and approve the test items during the committee review process. At the Bias, Fairness, and Sensitivity Review, experts in bias, fairness, and sensitivity review all test items and passages and come to a consensus about any issues that are noted. At both meetings the results are carefully documented.
16. Conduct Item Review Resolution and Cleanup	Following the conclusion of the New Item Content Review Committee meetings, PDE re-examines the consensus changes suggested by the committee members during the New Item Content Review Committee meetings. DRC item and test development specialists then record all of PDE's follow-up decisions and changes. During this cleanup process, PDE either accepts the changes as requested by the committee or rejects the decision of the committee. If a committee decision is rejected, PDE provides an alternate decision for DRC to implement. During this cleanup process, PDE also interprets the report from the Bias, Fairness, and Sensitivity Committee meetings and subsequently identifies changes to test items and passages. DRC item and test development specialists then apply the changes to the test items and passages per PDE's decisions.
17. Submit Field-Test Items for Final Sign-Off	PDE-approved changes are applied to the items, scenarios, non-permissioned passages, prompts, etc. (Changes reflect PDE's arbitration of the committee decisions.) Once all revisions to the items, non-permissioned passage text, and/or the art used by test items and passages are completed, the test items are submitted to PDE for final review and sign-off. (Changes requested to permissioned passages are sought from the publisher of record, and, if approved by the copyright holders, changes are implemented.) [PDE's approval process for field-test items generally occurs simultaneously with PDE's approval of the core test forms. See step 25.]
*To follow the path for new field-test items, skip to **step 22**, or to follow the chronological test development path, continue with **step 18**.*	

Step	Description
18. Review Results of the Field Test	Following the administration of a field-test form and the subsequent rangefinding and field-test scoring processes for field-test items, performance data for all field-test items are analyzed by DRC psychometricians and test development specialists. Test item performance data that meet certain triggering criteria are flagged for additional reviews by test development specialists. Flagged field-test items with extreme performance data are considered psychometrically unusable and are removed from future operational consideration. Field-test items with marginal performance data are prepared for the Field-Test Item Data Review meeting.
19. Prepare for Field-Test Item Data Review	Test development specialists prepare the items and stimulus passages for review by the Field-Test Item Data Review Committee (which consists of Pennsylvania educators). Psychometricians also prepare training materials needed for training committee members to review items for their performance. All training materials and other ancillary materials (e.g., agendas, presentations, etc.) are submitted to PDE for review and approval. Invitations are also sent to Pennsylvania educators from PDE-approved committee lists.
20. Conduct Field-Test Item Data Review	Committees of Pennsylvania educators review the performance data of flagged field-test items. Psychometricians present training on how to review field-test items based on their performance data. At the Item Data Review, committee members examine the performance of the items and determine whether each field-test item is technically sound and appropriate for use on an operational PSSA test. Since test items cannot be modified at the Field-Test Item Data Review, the committee can either accept an item as is, or the committee can reject the item.
21. Conduct Field-Test Item Data Review Reconciliation	Following the conclusion of the Field-Test Item Data Review Committee meetings, PDE re-examines the consensus decisions (accept or reject) suggested by the committee members during the Field-Test Item Data Review Committee meetings. Test development specialists record all of PDE's follow-up decisions and changes. During this cleanup process, PDE either accepts the decisions of the data review committee, or PDE rejects the decisions of the data review committee. If a committee decision is not accepted, PDE provides an alternate decision for test development specialists to implement. All PDE-approved changes to the test items status (accepted or rejected) are incorporated into the *Item Development and Educational Assessment System*, IDEAS.
22. Select Items to Fill Core, Field-Test, and Equating Block Positions in Core and Field-Test Forms	After the PDE-approved changes to the new field-test items is completed AND the results of the prior field test have been finalized following data review, test development specialists collaborate with psychometricians to follow the Test Design Blueprints and build requirements to make the initial selection of items for core, field-test, and equating block positions for all test forms.
23. Review Core and Equating Block Selections	After test content and psychometric requirements have been achieved for core and equating block positions, the core and equating block items are provided to PDE for review and approval. Any changes to the content of the core or equating block requested by PDE are balanced with psychometric requirements until all core and equating block positions are approved by PDE, test development specialists, and psychometricians. Test development specialists work with psychometricians and PDE staff to create scrambled versions of the core items that will appear across forms.
24. Construct Test Forms	Items, passages, and test components are assembled into forms using the form construction and typesetting function of DRC's *Item Development and Educational Assessment System*, IDEAS. Forms are reviewed internally for style and formatting requirements.
25. Review Typeset Forms	After forms are constructed in IDEAS, draft hard copies of the forms are produced and presented to PDE for review and approval. Any changes to the content of the core or equating block requested by PDE are balanced with psychometric requirements until all core and equating block positions are approved by PDE, test development specialists, and psychometricians. PDE also re-reviews all field-test items appearing in the test forms. DRC applies changes to the field-test items as required.

Step	Description
26. Print Test Forms	Following PDE's approval of the test forms, DRC completes a series of final proofing of all test forms. Final forms (along with ancillary materials) are then approved for printing.
27. Assemble Documentation of Test Materials	Metadata for each test item and form is documented and proofed, including: grade, form, session/section, item sequence, reporting category, Assessment Anchor, descriptor (sub-anchor), Eligible Content, number of points, item type, number of answer options, item usage, stimulus ID, etc.
28. Prepare Online Forms	Following approval of the print forms, all online forms are prepared. Forms are rendered in form sets, and items and forms are compared for continuity with the print forms as well as to ensure that all tools and features are functioning as expected.
*To follow the path for new field-test items, return to **step 18**.*	

APPENDIX D: ITEM AND DATA REVIEW CARD EXAMPLES

ITEM REVIEW CARD EXAMPLE

Standard: Use the four operations with whole numbers to solve problems.

1.

A.

B.

PA - Item Card

Item ID
Content Area
Mathematics
Passage ID
Passage Title
Grade
4
CCAACS Standards
B-O.1
Item Type
Open Ended
Points
4
Depth of Knowledge
2
Bloom's Taxonomy
Est Difficulty
Medium
Key
Calculator
C

1. ***Continued.*** Please refer to the previous page for task explanation.

C.

Standard: Describe how prominent Earth features in Pennsylvania (e.g., mountains, valleys, caves, sinkholes, lakes, rivers) were formed.

1. [redacted]

PA - Data Card

Item ID
[redacted]
Content Area
Science
Passage ID
Passage Title
Grade
4
Standards
AACS: D.1.1.1
Item Type
Multiple Choice
Points
1
Depth of Knowledge
2
Est Difficulty
Medium
Key
A
Focus

Data Recognition Corporation [redacted]

PA - Master Statistics Data Card

Administration(s)

Form Name	Use Function	Rptg Flag	Seq	Period	Year	Session	Calc	Model/Ext	Grade	N	P-Value	Item Total Corr
				Spring	2015		Yes	Rasch	4	1548	0.54	0.34

Traditional Statistics

N	P-Val	Mean	Item Total Corr
122762	0.54		0.34

Distractor/Step Specific

Label	Proportion	Corr	Avg Meas	Step Meas
A*	0.54	0.34		
B	0.20	-0.10		
C	0.14	-0.21		
D	0.12	-0.16		
MULTS	0.00			
OMITS	0.00			

DIF Analysis

Category	Bias Code	Num Value	N - Ref	N - Focal
MALEFEMALE	A-	-0.26	5349	5011
WHITEBLACK	A+	0.14	7285	1569
WHITEHISPANIC	A-	-0.40	7285	889

Data Recognition Corporation

Reviewer Signature: _____

Item Rating Sheet

Content Area: _____ Grade: _____

	Content Alignment	Rigor Level Alignment				Technical Design			Universal Design		STATUS
	Standards	Grade	Difficulty	Depth of Knowledge	Source of Challenge	Correct Answer	Distractors	Graphics	Language Demand	Bias	Acceptance Status
Unique ID number	—Higher —Lower —None	—Above —At —Below	—Hard —Medium —Easy	—Recall —Application —Strategic Thinking	—Yes —No	—Yes —No	—Yes —No	—Yes —No	—Yes —No	—Yes —No	— Approved as is — Accepted with suggested revisions — Dissenting View

Item Review Criteria Guidelines

The purpose of this form is to provide guidelines to the item review process in terms of item characteristics that are essential in building a fair and balanced assessment. Use these guidelines in conjunction with the Item Rating Sheet when recording your feedback on individual items.

Content Alignment		Options
Standards, Anchors, Eligible Content	Does the content of the item align with the Standard/Anchor/Eligible Content? Each item was written to assess a particular Standard/Anchor/ Eligible Content statement which is indicated on the individual Item Card. Consider the degree to which the item is, in fact, aligned with the indicated eligible content. In making this judgment, it is important to consider whether the **content** is aligned (e.g., do the eligible content and the item both deal with fractions) and whether the required **performance** is aligned (e.g., if the eligible content calls for a comparison to be made, is this reflected in the item).	**HIGHER**—Aligns to the higher level of the EC **LOWER**—Aligns to the lower level of the EC **NONE**—No alignment with EC

Rigor Level Alignment		Options
Grade	Is the item grade-level appropriate? Is the content consistent with the experiences of a student at the grade level assessed? Is the challenge level appropriate for the grade?	**ABOVE** Grade Level **AT** Grade Level **BELOW** Grade Level
Difficulty	Do you agree with the item's difficulty rating? Item Difficulty is indicated as Easy, Medium, and Hard? Is your rating in agreement with the difficulty rating on the Item Form?	**HARD** **MEDIUM** **EASY**
Depth of Knowledge	Depth of Knowledge is based on the alignment work of Norman Webb. Rate each item based on the cognitive demand, using the following levels: 1. Recall – ***Recall*** of a fact, information, or procedure. 2. Basic Application of Skill or Concept – ***Use*** of information, conceptual knowledge, procedures, two or more steps, etc. 3. Strategic Thinking – Requires reasoning, developing a plan or sequence of steps; has some complexity; more than one possible answer. 4. Extended Thinking – Requires an investigation, time to think and process multiple conditions of the problem or task, and more than 10 minutes to do non-routine manipulations. (This level is generally not assessed in on-demand assessments.)	**4** = Extended Thinking **3** = Strategic Thinking **2** = Basic Application **1** = Recall

Source of Challenge	Is the source of challenge appropriately targeted to the content? The hardest part of the item (i.e., source of challenge) should be the content that is targeted. For example, in mathematics, the mathematics should be the major source of challenge rather than the wording or graphic. Students should not give an incorrect answer to a mathematics item because the reading level is too high or a graphic is flawed. Conversely, students should not give correct answers for reasons such as prior knowledge that make the answer to the question obvious (e.g., if the question asks which country has the largest population and students are to read a graph that includes China, there is no need to read the graph to answer the question).	**Y** = Yes **N** = No

Technical Design		**Options**
Correct Answer	Is there one clear, correct answer? There should be no other answer that "could" be correct. CAUTION: This does not mean that "good" distractors are unfair.	**Y** = Yes **N** = No
Distractors	Are distractors fair and appropriate? Distractors that are appropriate offer students reasonable choices that can be arrived at by making common errors. There should be no distractors that make no sense at all. It should be possible to examine each option and to reason how a student with some deficiency in knowledge or skill could choose it. The distractors should be formatted according to acceptable standards of test construction (e.g., a phrase that is common to each distractor should be placed in the stem).	**Y** = Yes **N** = No
Graphics	Are the graphics clear and accurate?	**Y** = Yes **N** = No

Universal Design		**Options**
Language Demand	Is language clear, well-formatted, and precise? Does the item use correct terminology for the content area? In order for all students to enter into the questions of the assessment, they must be able to understand them. If the items are formatted poorly, use unnecessarily complex words or phrases, or use figures or layouts that are difficult to understand, some students will give incorrect answers due to these factors rather than the content that is being assessed.	**Y** = Yes **N** = No
Bias	Is the item free of bias? All students will not be able to enter into the assessment if bias considerations are not resolved. Does the item contain clear bias problems? *A thorough, independent bias review* (separate from this meeting) *will be completed for all items.*	**Y** = Yes **N** = No

Status		**Options**
Acceptance Status	This is an overall judgment about the item. Based on the consensus of the committee, indicate whether the item was approved without revision to the content of the item or whether the item was accepted by the committee after revision of the content of the item. If there is a dissenting view (opposed to the committee consensus), record a brief explanation of the dissenting view on the back of the Item Rating Sheet.	**—Approved** as is **—Accepted** with suggested revisions **—Dissenting View**

NOTES:

- If you leave a box blank on the Item Rating Sheet, it will be recorded to indicate that you did not have any specific feedback for that item or issue.
- If you object to the consensus of the committee, please note this on the item rating sheet and then record a brief explanation of the dissenting view on the back of the Item Rating Sheet.
- **Do NOT remove any items from the item binder at any time.**
- You must sign your Item Rating Sheet.

APPENDIX F: ITEM STATISTICS

Appendix contains item statistics for each item type (multiple-choice, evidence-based selected-response, open-ended, text-dependent analysis, and technology-enhanced) by each mode (paper/pencil, and computer-based). A form number of 0 indicates that the item was presented on all forms.

Multiple-Choice Paper/Pencil Item Statistics

Column Heading	Definition
Content	Content Area
Grade	Grade
PubID	Item ID
Form	Form Number
Stand	Standard
Depth	Depth of Knowledge
N	N
PValue	*P*-Value
P(A)	Proportion A
P(B)	Proportion B
P(C)	Proportion C
P(D)	Proportion D
P(OMIT)	Proportion Omits
P(INV)	Proportion Invalid Responses
PtBis	Point Biserial
Corr(A)	Correlation A
Corr(B)	Correlation B
Corr(C)	Correlation C
Corr(D)	Correlation D
Corr(OMIT)	Correlation Omits
Corr(INV)	Correlation Invalid Responses
Final	IRT Difficulty Estimate
Final Err	IRT Difficulty Error
Infit-Z	Infit Z-Standardized
Infit-MS	Infit Mean Square
Outfit-Z	Outfit Z-Standardized
Outfit-MS	Outfit Mean Square
M/F	Male/Female DIF Code
W/B	White/Black DIF Code
W/H	White/Hispanic DIF Code

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	3	660237	0	A-C	3	86005	0.4831	0.1277	0.1733	0.2074	0.4751	0.0144	0.0021	0.4635	-0.1874	-0.192	-0.2095	0.4675	-0.0895	-0.058	0.7715	0.0223	-2.959	0.9749	-1.679	0.9806	A+	A+	A+
ELA	3	710614	0	A-C	2	85083	0.4343	0.1985	0.2246	0.4225	0.1274	0.0262	0.0008	0.3199	-0.1094	-0.1176	0.3305	-0.1427	-0.137	-0.0375	0.957	0.0225	9.9011	1.1347	9.9012	1.2176	A-	A+	A+
ELA	3	660244	0	A-K	2	85681	0.3427	0.2073	0.3358	0.1059	0.3309	0.0191	0.001	0.3804	-0.159	0.3844	-0.2936	-0.0245	-0.1016	-0.0399	1.4151	0.0236	5.3711	1.0569	9.4712	1.162	A-	A+	A+
ELA	3	660246	0	A-K	3	84753	0.3695	0.1748	0.3392	0.0971	0.3581	0.0295	0.0012	0.3334	-0.2361	0.0639	-0.285	0.3383	-0.1013	-0.0358	1.2496	0.0231	7.9911	1.0798	9.9012	1.1811	A+	A+	A+
ELA	3	660248	0	A-K	3	85726	0.5422	0.5316	0.122	0.1135	0.2133	0.0187	0.0009	0.3803	0.3863	-0.2151	-0.2631	-0.0606	-0.096	-0.0361	0.3803	0.0222	4.471	1.0379	3.861	1.0441	A-	A+	A+
ELA	3	710616	0	A-K	1	85261	0.7647	0.0754	0.7456	0.0743	0.0797	0.0244	0.0006	0.5103	-0.2835	0.5204	-0.2141	-0.2714	-0.1389	-0.0286	-1.1588	0.027	3.7511	1.0564	-2.4591	0.9355	A+	A-	A+
ELA	3	710617	0	A-K	2	85334	0.6499	0.6342	0.1112	0.1201	0.1104	0.0228	0.0013	0.5088	0.5183	-0.2284	-0.2812	-0.2051	-0.1366	-0.0493	-0.2929	0.0232	-4.859	0.9533	-5.7691	0.9133	A-	A+	A+
ELA	3	660254	0	A-V	3	86087	0.694	0.1211	0.1095	0.6833	0.0706	0.0144	0.0011	0.5616	-0.2768	-0.2856	0.5656	-0.2736	-0.1003	-0.047	-0.3015	0.0232	-9.8992	0.8109	-9.8993	0.7303	A+	A+	A+
ELA	3	710620	0	A-V	1	85235	0.5054	0.1505	0.1321	0.1995	0.4927	0.0247	0.0005	0.4052	-0.2638	-0.281	0.0066	0.4128	-0.1213	-0.0316	0.4255	0.0222	2.161	1.0181	2.301	1.0259	A-	A+	A+
ELA	3	710726	0	A-V	2	85281	0.54	0.213	0.5266	0.097	0.1387	0.024	0.0007	0.3277	-0.1812	0.3397	-0.2037	-0.0415	-0.1296	-0.0362	0.5021	0.0222	9.9011	1.0962	9.9011	1.1164	A-	A+	A-
ELA	3	625452	0	B-C	2	85275	0.4923	0.48	0.134	0.0945	0.2667	0.0239	0.0009	0.381	0.3856	-0.2386	-0.2853	-0.0279	-0.0949	-0.0367	0.5079	0.0222	5.191	1.0439	5.6011	1.0636	A-	A+	A+
ELA	3	625454	0	B-C	2	86080	0.5771	0.0787	0.0772	0.5681	0.2604	0.0147	0.0008	0.2021	-0.2772	-0.25	0.2128	0.1115	-0.0992	-0.0338	0.0128	0.0226	9.9012	1.2144	9.9013	1.3266	A-	A-	A-
ELA	3	663183	0	B-C	2	85518	0.5136	0.1987	0.1485	0.5023	0.1285	0.0211	0.0009	0.4489	-0.1491	-0.175	0.4531	-0.2672	-0.0995	-0.0375	0.6298	0.0222	-1.789	0.985	-1.139	0.9872	A-	A+	A+
ELA	3	663184	0	B-C	2	86286	0.3923	0.1533	0.187	0.2593	0.3871	0.0127	0.0005	0.256	-0.1813	-0.0114	-0.107	0.2606	-0.0861	-0.0289	1.2753	0.0232	9.9013	1.2505	9.9014	1.393	A+	A-	A-
ELA	3	663187	0	B-C	3	86039	0.4644	0.4569	0.1243	0.2023	0.2005	0.0139	0.0021	0.395	0.3985	-0.2934	-0.1476	-0.078	-0.0807	-0.0375	0.6113	0.0222	4.841	1.0412	4.6111	1.0524	A-	A+	A+
ELA	3	625451	0	B-K	2	85988	0.7237	0.12	0.0768	0.075	0.7117	0.0161	0.0006	0.5794	-0.2828	-0.2961	-0.2996	0.5832	-0.1095	-0.0346	-0.7238	0.0247	-9.8991	0.8732	-9.8992	0.7512	A-	A-	A-
ELA	3	663188	0	B-K	2	85875	0.596	0.0606	0.5853	0.113	0.2232	0.0174	0.0006	0.5806	-0.2664	0.583	-0.2437	-0.3183	-0.1016	-0.0313	0.243	0.0223	-9.8992	0.8259	-9.8992	0.7859	A-	A+	A+
ELA	3	663191	0	B-K	2	86016	0.593	0.1992	0.0635	0.1376	0.5834	0.0153	0.001	0.4597	-0.263	-0.2135	-0.1714	0.4643	-0.094	-0.0376	0.2336	0.0223	-6.4291	0.9463	-6.8391	0.9218	A+	A-	A+
ELA	3	663192	0	B-K	3	86190	0.7117	0.7015	0.1069	0.0894	0.0879	0.0138	0.0005	0.4876	0.4928	-0.2401	-0.2767	-0.2131	-0.0974	-0.0288	-0.4268	0.0236	-9.8991	0.8821	-9.8992	0.8343	A-	A+	A+
ELA	3	633104	0	B-V	2	86092	0.4918	0.4842	0.1432	0.0528	0.3044	0.0148	0.0006	0.4701	0.4736	-0.3039	-0.264	-0.1279	-0.0945	-0.0372	0.621	0.0222	-4.739	0.9607	-3.589	0.9603	A-	A+	A+
ELA	3	662651	0	D	3	86574	0.3445	0.4489	0.1016	0.0984	0.3411	0.0091	0.0008	0.3619	-0.1297	-0.1859	-0.1496	0.3637	-0.0663	-0.0307	1.3793	0.0235	6.6511	1.0696	9.9012	1.1757	A-	A+	A+
ELA	3	662659	0	D	3	86583	0.675	0.6684	0.1873	0.0614	0.0731	0.0086	0.0013	0.2863	0.2917	-0.0634	-0.2493	-0.1755	-0.0644	-0.0326	-0.3994	0.0235	9.9011	1.1073	9.9012	1.2258	A+	A-	A-
ELA	3	662720	0	D	2	85719	0.4684	0.1901	0.1713	0.4592	0.1597	0.0187	0.001	0.3681	-0.1043	-0.1599	0.3699	-0.2003	-0.0648	-0.0321	0.7777	0.0223	7.9811	1.0698	8.7011	1.1044	A+	A+	A+
ELA	3	662723	0	D	2	86620	0.4997	0.1602	0.1896	0.495	0.1458	0.008	0.0014	0.4099	-0.2632	-0.1849	0.4125	-0.0852	-0.0679	-0.0292	0.4111	0.0222	3.551	1.03	3.221	1.0365	A+	A-	A-
ELA	3	714296	0	D	1	86691	0.4659	0.4619	0.1984	0.141	0.1901	0.0078	0.0008	0.4177	0.4194	-0.2494	-0.1039	-0.1715	-0.0624	-0.0245	0.7669	0.0223	3.401	1.0293	3.841	1.0451	A-	A-	B-
ELA	3	714297	0	D	1	86442	0.7057	0.0723	0.6976	0.0753	0.1433	0.0073	0.0042	0.5151	-0.3053	0.5176	-0.275	-0.2213	-0.0716	-0.0379	-0.3585	0.0234	-9.8992	0.8465	-9.8992	0.7782	A-	A-	A-
ELA	3	714299	0	D	1	86418	0.4036	0.2362	0.0996	0.3989	0.2536	0.0088	0.0029	0.2808	-0.127	-0.0904	0.2845	-0.1147	-0.0695	-0.0349	1.1725	0.023	9.9012	1.1658	9.9013	1.2605	A+	A-	A-
ELA	3	714809	0	D	1	86563	0.6284	0.0525	0.1657	0.6221	0.1496	0.0094	0.0007	0.4702	-0.2053	-0.2709	0.472	-0.2118	-0.0633	-0.0268	-0.0463	0.0226	-9.1391	0.9199	-8.3391	0.8925	A+	A-	B-
ELA	3	714811	0	D	3	85962	0.4952	0.1902	0.1222	0.1838	0.4868	0.0155	0.0014	0.4938	-0.2285	-0.2044	-0.212	0.4926	-0.0515	-0.0284	0.6481	0.0222	-6.7291	0.9444	-6.1191	0.9327	A+	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	3	737074	1	A-C	2	9648	0.5984	0.1075	0.5919	0.1719	0.1178	0.0104	0.0005	0.4732	-0.2166	0.4757	-0.2227	-0.2324	-0.0706	-0.0276	0.0873	0.0672	-3.1691	0.9194	-3.3591	0.8809	A-	A-	A+
ELA	3	737069	1	A-K	2	9663	0.5849	0.0729	0.5795	0.103	0.2353	0.0086	0.0007	0.4088	-0.2344	0.4106	-0.242	-0.1467	-0.0559	-0.0315	0.12	0.0671	-0.939	0.9754	-0.839	0.9693	A+	A+	A+
ELA	3	737070	1	A-K	2	9657	0.2389	0.1174	0.2688	0.2365	0.3673	0.0095	0.0004	0.2497	-0.1503	0.0392	0.2517	-0.1433	-0.0643	-0.0296	1.7148	0.0772	2.3611	1.0959	3.6313	1.2582	A-	A-	A-
ELA	3	737071	1	A-K	2	9630	0.6887	0.1153	0.0691	0.1229	0.6799	0.0122	0.0005	0.51	-0.2276	-0.2386	-0.2962	0.5096	-0.0607	-0.0276	-0.3059	0.0686	-5.3291	0.8616	-5.1392	0.7876	A+	A-	A-
ELA	3	737073	1	A-K	3	9634	0.5702	0.5632	0.1793	0.1094	0.1358	0.0117	0.0006	0.4762	0.4771	-0.1853	-0.2455	-0.237	-0.0666	-0.0225	0.2369	0.0671	-3.8891	0.9016	-3.5591	0.8787	A+	A+	A-
ELA	3	737065	1	A-V	2	9658	0.6441	0.0503	0.1229	0.1791	0.6378	0.0094	0.0004	0.3532	-0.2256	-0.2631	-0.0749	0.3577	-0.0717	-0.0261	-0.1569	0.0679	-0.689	0.9816	-0.829	0.9659	A+	A-	A-
ELA	3	737066	1	A-V	2	9482	0.5072	0.0968	0.1114	0.493	0.2709	0.009	0.0189	0.4892	-0.2344	-0.2057	0.4868	-0.221	-0.0779	-0.0274	0.5226	0.0674	-3.8391	0.8999	-2.9091	0.9002	A-	A-	A-
ELA	3	737067	1	A-V	2	9689	0.5963	0.5924	0.1723	0.0565	0.1721	0.0064	0.0003	0.3803	0.3824	-0.127	-0.2876	-0.1819	-0.0559	-0.0233	0.069	0.0672	-0.359	0.9904	-0.339	0.9869	A-	A-	A-
ELA	3	743406	1	D	2	19163	0.5616	0.553	0.3656	0.0461	0.0199	0.0145	0.0008	0.379	0.3826	-0.2402	-0.1911	-0.1758	-0.0733	-0.04	0.1532	0.0473	0.821	1.0147	-0.609	0.9842	A-	C-	C-
ELA	3	743415	1	D	2	9640	0.7619	0.0908	0.0687	0.753	0.0758	0.0112	0.0005	0.4382	-0.2378	-0.2129	0.4406	-0.2266	-0.0704	-0.0194	-0.7407	0.072	-3.8591	0.8833	-2.8992	0.8394	A+	A+	A+
ELA	3	743481	1	D	2	9579	0.7463	0.7329	0.079	0.0917	0.0784	0.0177	0.0002	0.4918	0.4934	-0.243	-0.2493	-0.2569	-0.0866	-0.0201	-0.5719	0.0704	-6.5592	0.819	-6.0493	0.715	A-	A-	B-
ELA	3	743447	2	A-C	3	9510	0.4584	0.1895	0.2101	0.448	0.1298	0.0214	0.0011	0.3049	-0.099	-0.0187	0.3103	-0.2795	-0.0856	-0.0465	0.721	0.0664	2.3911	1.0598	2.6811	1.0915	A-	A+	A+
ELA	3	743440	2	A-K	2	9628	0.5506	0.2455	0.5449	0.1034	0.0959	0.0097	0.0007	0.4229	-0.1293	0.4272	-0.2216	-0.2722	-0.0862	-0.0378	0.3106	0.0666	-2.2291	0.9449	-1.6191	0.9461	A+	A-	A-
ELA	3	743441	2	A-K	2	9627	0.7795	0.7713	0.0539	0.0463	0.1181	0.0096	0.0009	0.401	0.4053	-0.2498	-0.2385	-0.1741	-0.066	-0.0374	-0.9366	0.0779	-3.5891	0.8596	-2.7892	0.8173	A-	A-	A-
ELA	3	743443	2	A-K	3	9610	0.5236	0.2337	0.1321	0.5172	0.1047	0.0104	0.0019	0.4581	-0.243	-0.2005	0.4627	-0.1602	-0.0888	-0.0562	0.429	0.0664	-2.7891	0.9324	-2.4491	0.9217	A-	A-	A-
ELA	3	743446	2	A-K	2	9583	0.528	0.0797	0.5201	0.1946	0.1907	0.0139	0.0011	0.3336	-0.2223	0.3387	-0.1291	-0.1217	-0.0749	-0.0389	0.3959	0.0664	2.9411	1.0743	2.4211	1.0815	A-	A+	A+
ELA	3	743436	2	A-V	2	9652	0.8751	0.0486	0.0432	0.0322	0.8681	0.0074	0.0005	0.4579	-0.2595	-0.2699	-0.2194	0.4567	-0.0488	-0.0414	-1.7591	0.097	-2.6892	0.8344	-4.9295	0.5373	A-	A-	A-
ELA	3	743437	2	A-V	2	9578	0.6715	0.6611	0.1483	0.1008	0.0742	0.0153	0.0002	0.3332	0.3473	-0.1306	-0.2474	-0.1029	-0.1313	-0.0257	-0.3566	0.0704	0.311	1.0092	0.961	1.0458	A+	A-	A-
ELA	3	743438	2	A-V	2	9617	0.5725	0.1899	0.1603	0.0723	0.5659	0.0105	0.001	0.4254	-0.2885	-0.0688	-0.2547	0.428	-0.062	-0.0443	0.1551	0.0671	-2.5891	0.9342	-1.9991	0.9301	A-	A-	B-
ELA	3	743407	2	D	2	19167	0.5819	0.574	0.0594	0.0769	0.2761	0.0128	0.0008	0.3313	0.3345	-0.2542	-0.2599	-0.0637	-0.0634	-0.0171	0.0744	0.0476	0.941	1.0173	1.541	1.0411	A-	A-	A-
ELA	3	743416	2	D	2	9613	0.7934	0.0736	0.067	0.0635	0.7839	0.0108	0.0011	0.438	-0.2517	-0.2164	-0.2179	0.4415	-0.0689	-0.0469	-1.0925	0.0807	-4.2792	0.8208	-4.2593	0.7073	A-	A-	A-
ELA	3	743482	2	D	2	9562	0.8302	0.0865	0.032	0.0484	0.8159	0.0168	0.0004	0.4322	-0.2617	-0.2137	-0.2119	0.439	-0.0993	-0.0352	-1.3271	0.0855	-3.2992	0.8412	-4.6094	0.645	A+	A-	A-
ELA	3	743367	3	A-C	2	9582	0.5271	0.2193	0.1197	0.5187	0.1263	0.0126	0.0033	0.4988	-0.1971	-0.2801	0.5016	-0.2012	-0.0659	-0.0684	0.4105	0.0675	-4.1591	0.892	-3.6891	0.8706	A-	A-	A-
ELA	3	743368	3	A-K	2	9652	0.5931	0.2221	0.0898	0.0914	0.588	0.008	0.0007	0.4932	-0.2169	-0.2593	-0.2532	0.4948	-0.0607	-0.0333	0.015	0.0688	-3.8691	0.8928	-3.5091	0.8591	A+	A-	A-
ELA	3	743369	3	A-K	2	9608	0.6955	0.1321	0.6862	0.074	0.0944	0.013	0.0002	0.5581	-0.2925	0.5553	-0.2663	-0.2815	-0.0555	-0.0207	-0.4614	0.0723	-6.0292	0.8136	-5.8993	0.7064	A+	A+	A-
ELA	3	743370	3	A-K	2	9598	0.3997	0.2503	0.1949	0.394	0.1466	0.0134	0.0009	0.251	-0.0669	0.0008	0.254	-0.248	-0.0596	-0.0312	1.022	0.0684	3.7411	1.1065	4.5012	1.1944	A-	A+	A+
ELA	3	743371	3	A-K	2	9531	0.6268	0.161	0.1428	0.0615	0.6135	0.0207	0.0004	0.4499	-0.2358	-0.1729	-0.2654	0.4444	-0.0337	-0.031	-0.0526	0.0691	-1.649	0.9523	-0.129	0.9938	A+	A-	A-
ELA	3	743373	3	A-V	2	9666	0.5312	0.147	0.5274	0.2549	0.0635	0.0067	0.0006	0.3863	-0.2458	0.3892	-0.1636	-0.1219	-0.0665	-0.0335	0.3876	0.0676	-1.439	0.9615	-1.3991	0.949	A-	A-	A-
ELA	3	743374	3	A-V	2	9630	0.8447	0.8354	0.046	0.0629	0.0448	0.0105	0.0005	0.4897	0.4886	-0.2597	-0.265	-0.2669	-0.0628	-0.0386	-1.4977	0.0891	-4.7392	0.7667	-5.1894	0.5519	A-	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	3	743375	3	A-V	2	9662	0.6527	0.6476	0.0985	0.1209	0.1253	0.0073	0.0004	0.4339	0.4361	-0.2206	-0.2504	-0.1676	-0.0593	-0.0213	-0.2699	0.0706	-1.9991	0.9391	-1.7391	0.9158	A-	A-	A-
ELA	3	743408	3	D	2	19051	0.8536	0.8394	0.0502	0.0245	0.0693	0.0162	0.0004	0.4472	0.4418	-0.2459	-0.1886	-0.2806	-0.0607	-0.0217	-1.5147	0.0633	-3.6791	0.8638	-5.4693	0.6537	A-	A-	B-
ELA	3	743417	3	D	2	9609	0.3476	0.0892	0.343	0.0585	0.496	0.012	0.0011	0.3444	-0.1562	0.3451	-0.2433	-0.1117	-0.05	-0.0257	1.3054	0.07	3.0111	1.0915	4.6112	1.234	A-	A+	A-
ELA	3	743483	3	D	2	9558	0.5968	0.1452	0.1746	0.5858	0.076	0.0175	0.0009	0.3825	-0.1445	-0.1789	0.386	-0.2294	-0.0705	-0.0418	0.0692	0.0685	0.951	1.0269	0.431	1.0172	A-	A-	A-
ELA	3	744000	4	A-C	2	9530	0.4773	0.4708	0.1509	0.2914	0.0732	0.0119	0.0019	0.3669	0.3721	-0.1421	-0.0989	-0.3015	-0.0825	-0.0568	0.5986	0.0662	-0.169	0.9957	0.061	1.0015	A-	A-	A-
ELA	3	744001	4	A-K	2	9580	0.7492	0.7427	0.0801	0.0951	0.0735	0.0072	0.0013	0.5307	0.533	-0.2264	-0.331	-0.2572	-0.0623	-0.0562	-0.7541	0.0746	-6.8792	0.7684	-6.6194	0.6461	A+	A-	A-
ELA	3	744004	4	A-K	2	9535	0.6642	0.1135	0.1697	0.6554	0.0481	0.0118	0.0014	0.463	-0.2228	-0.2389	0.4666	-0.2414	-0.0717	-0.0528	-0.3013	0.0696	-2.4491	0.9291	-2.6891	0.8816	A+	A-	A-
ELA	3	744005	4	A-K	2	9556	0.6786	0.0671	0.1877	0.6711	0.063	0.0098	0.0012	0.4255	-0.2196	-0.2072	0.4296	-0.2368	-0.0692	-0.0459	-0.3332	0.0698	-2.1591	0.9364	-1.6991	0.922	A+	A+	A+
ELA	3	744006	4	A-K	2	9575	0.6309	0.0856	0.203	0.0771	0.6252	0.0086	0.0005	0.4183	-0.1472	-0.1729	-0.3264	0.4195	-0.0474	-0.0374	-0.0983	0.0681	-2.6791	0.9285	-2.2891	0.91	A+	A-	A-
ELA	3	744008	4	A-V	2	9581	0.6344	0.0684	0.2585	0.0356	0.629	0.0078	0.0007	0.3745	-0.279	-0.1456	-0.2261	0.3788	-0.0691	-0.0311	-0.1169	0.0682	-1.329	0.9636	0.061	1.0018	A-	A+	A-
ELA	3	744009	4	A-V	2	9556	0.5752	0.056	0.5689	0.2909	0.0732	0.0102	0.0008	0.3466	-0.2623	0.352	-0.0704	-0.28	-0.0799	-0.0384	0.152	0.0668	-0.219	0.9942	-0.259	0.9903	A-	A-	A-
ELA	3	744010	4	A-V	2	9563	0.5378	0.1865	0.5322	0.0759	0.1951	0.0097	0.0006	0.3787	-0.269	0.3815	-0.2694	-0.0178	-0.0675	-0.0224	0.306	0.0664	-1.719	0.9581	-1.459	0.9516	A-	A-	B-
ELA	3	743409	4	D	2	9530	0.7054	0.0481	0.6956	0.0253	0.2172	0.013	0.0007	0.3386	-0.2514	0.3434	-0.1748	-0.1652	-0.0702	-0.0254	-0.5477	0.072	-0.159	0.9943	0.251	1.0125	A-	A-	A-
ELA	3	743475	4	D	1	9518	0.3457	0.1702	0.3405	0.2964	0.1779	0.014	0.001	0.0824	-0.1052	0.0869	0.0934	-0.0962	-0.057	-0.024	1.2921	0.0693	9.4213	1.2971	9.9015	1.549	A-	A+	A-
ELA	3	743484	4	D	2	9482	0.8707	0.0559	0.8544	0.0357	0.0353	0.0182	0.0005	0.4316	-0.2444	0.4293	-0.2281	-0.2283	-0.0787	-0.0138	-1.6551	0.0931	-3.2392	0.8157	-3.2793	0.6898	A-	A-	A-
ELA	3	745852	5	A-C	2	9614	0.4743	0.1744	0.4682	0.2192	0.1254	0.0115	0.0013	0.323	-0.2367	0.3259	-0.0667	-0.113	-0.0569	-0.0481	0.6196	0.0665	1.411	1.0356	1.311	1.0429	A-	A-	A+
ELA	3	745846	5	A-K	2	9596	0.3732	0.3677	0.3041	0.1804	0.1331	0.0092	0.0054	0.3184	0.3207	0.0191	-0.2188	-0.2087	-0.0647	-0.0296	1.1379	0.0683	1.521	1.0422	2.0811	1.0844	A+	A+	A-
ELA	3	745847	5	A-K	3	9619	0.4977	0.1905	0.1649	0.4915	0.1408	0.01	0.0024	0.3734	-0.1689	-0.1591	0.378	-0.1532	-0.0865	-0.0358	0.5273	0.0664	-0.169	0.9956	-0.369	0.9875	A+	A-	A-
ELA	3	745848	5	A-K	3	9601	0.4979	0.2531	0.4908	0.1309	0.111	0.0116	0.0026	0.3516	-0.069	0.3582	-0.2494	-0.1661	-0.0954	-0.0505	0.5387	0.0664	2.4511	1.0623	1.9411	1.0639	A+	A-	A+
ELA	3	745851	5	A-K	2	9592	0.5809	0.1333	0.1203	0.1592	0.5721	0.0145	0.0006	0.4734	-0.2579	-0.2671	-0.1407	0.4742	-0.0644	-0.0365	0.1393	0.0671	-6.4092	0.8421	-6.0692	0.7958	A+	A+	A-
ELA	3	745841	5	A-V	2	9634	0.6963	0.0795	0.1137	0.6888	0.1073	0.01	0.0008	0.4672	-0.2545	-0.2123	0.4695	-0.2382	-0.0623	-0.0432	-0.4948	0.0716	-4.4191	0.8646	-4.5592	0.7771	A+	A-	A-
ELA	3	745842	5	A-V	2	9586	0.6362	0.1005	0.0847	0.1728	0.6262	0.0149	0.0008	0.499	-0.2756	-0.2764	-0.1906	0.5001	-0.0723	-0.044	-0.1393	0.0686	-4.2591	0.8853	-4.7192	0.8135	A+	A+	A+
ELA	3	745843	5	A-V	2	9669	0.6949	0.6899	0.111	0.1228	0.0691	0.0064	0.0008	0.3754	0.3774	-0.2156	-0.156	-0.2015	-0.0494	-0.0209	-0.4998	0.0717	-2.1391	0.9324	-1.6191	0.9158	A-	A+	A-
ELA	3	743410	5	D	2	9630	0.6082	0.1275	0.2187	0.6014	0.0412	0.0103	0.0009	0.3127	-0.2051	-0.0938	0.3159	-0.2054	-0.058	-0.026	-0.0494	0.068	0.841	1.0229	1.231	1.0496	A+	A-	A-
ELA	3	743476	5	D	1	9632	0.4568	0.1808	0.1904	0.4518	0.166	0.01	0.001	0.2975	-0.1593	-0.0821	0.2988	-0.1344	-0.0442	-0.0247	0.7226	0.0666	4.1611	1.1084	3.9711	1.1372	A+	A-	A-
ELA	3	743485	5	D	2	9574	0.5417	0.5325	0.3037	0.0682	0.0787	0.0161	0.0008	0.5352	0.5367	-0.3885	-0.1259	-0.1688	-0.0863	-0.0371	0.2399	0.0668	-6.1091	0.8516	-5.5092	0.8209	A+	A-	A-
ELA	3	747201	6	B-C	2	9640	0.4649	0.19	0.2014	0.1363	0.4585	0.0128	0.0011	0.3736	-0.1793	-0.0939	-0.204	0.3769	-0.0735	-0.0464	0.7019	0.0664	-0.059	0.9983	0.941	1.0304	A-	A+	A+
ELA	3	747202	6	B-C	1	9646	0.4668	0.142	0.4606	0.1127	0.2714	0.0127	0.0006	0.3384	-0.2461	0.3426	-0.078	-0.1126	-0.0836	-0.0327	0.6451	0.0663	1.711	1.0422	1.9811	1.0645	A+	A-	A-
ELA	3	747203	6	B-C	2	9658	0.4214	0.1643	0.227	0.1803	0.4163	0.0111	0.0009	0.3906	-0.1944	-0.079	-0.2082	0.3928	-0.0656	-0.051	0.9329	0.0672	-1.469	0.9622	-0.399	0.9855	A+	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	3	747205	6	B-K	1	9655	0.4384	0.1809	0.2884	0.433	0.0854	0.0115	0.0009	0.3744	-0.1815	-0.1062	0.3767	-0.2145	-0.0708	-0.0391	0.8358	0.0668	0.141	1.0034	0.341	1.0113	A+	A+	A+
ELA	3	747206	6	B-K	1	9649	0.7049	0.6958	0.1493	0.0633	0.0786	0.0114	0.0016	0.3784	0.3815	-0.1685	-0.2225	-0.198	-0.0581	-0.0462	-0.5062	0.0711	-0.479	0.9846	1.5811	1.0816	A-	A+	A-
ELA	3	747208	6	B-K	1	9652	0.6063	0.5986	0.2072	0.0937	0.0878	0.0119	0.0008	0.3675	0.3686	-0.1081	-0.251	-0.2027	-0.0493	-0.0372	-0.0015	0.0673	0.951	1.0247	1.151	1.0427	A+	A+	A+
ELA	3	747211	6	B-V	2	9689	0.353	0.5359	0.3498	0.0664	0.039	0.008	0.0009	0.1678	0.0248	0.1709	-0.2232	-0.1661	-0.0573	-0.036	1.2539	0.0692	6.4612	1.1994	7.0613	1.334	A-	A-	A+
ELA	3	747212	6	B-V	2	9657	0.8281	0.0556	0.0563	0.818	0.0579	0.011	0.0011	0.4462	-0.2332	-0.2544	0.449	-0.224	-0.0709	-0.0422	-1.2879	0.0833	-2.8691	0.8678	-2.6092	0.7951	A-	A-	A-
ELA	3	743411	6	D	2	9635	0.464	0.4573	0.1855	0.1657	0.1771	0.0135	0.0009	0.3552	0.3585	-0.1175	-0.1806	-0.1463	-0.0787	-0.0279	0.665	0.0663	1.231	1.0303	1.291	1.0419	A+	A-	A-
ELA	3	743477	6	D	2	9641	0.3903	0.2576	0.1922	0.1515	0.3849	0.0099	0.0039	0.3798	-0.2054	-0.0818	-0.149	0.3834	-0.0643	-0.0759	1.0541	0.0678	-1.529	0.959	-0.589	0.9773	A-	A-	A-
ELA	3	743486	6	D	2	9605	0.4893	0.2252	0.114	0.1625	0.4808	0.0131	0.0044	0.3154	-0.1061	-0.2391	-0.0738	0.3222	-0.0722	-0.08	0.602	0.0662	1.941	1.0478	2.0211	1.0655	A+	A-	A-
ELA	3	747246	7	B-C	2	9592	0.5401	0.1355	0.1053	0.5338	0.2137	0.0104	0.0013	0.3968	-0.244	-0.2406	0.3973	-0.0849	-0.0402	-0.0547	0.3445	0.0664	-0.249	0.9937	0.661	1.0223	A-	A-	A-
ELA	3	747254	7	B-C	2	9516	0.4482	0.0932	0.3369	0.1109	0.4394	0.0163	0.0033	0.3437	-0.2383	-0.0478	-0.2156	0.3485	-0.0739	-0.0704	0.8215	0.0669	-0.199	0.9947	0.471	1.0159	A-	A-	A-
ELA	3	747255	7	B-C	2	9535	0.4346	0.427	0.1818	0.0791	0.2945	0.0163	0.0013	0.2485	0.2524	-0.1258	-0.2413	-0.0041	-0.0601	-0.0467	0.8435	0.067	4.5911	1.123	4.5512	1.1658	A-	A+	A-
ELA	3	747257	7	B-C	2	9524	0.4394	0.1669	0.4312	0.1759	0.2073	0.0164	0.0024	0.2743	-0.088	0.2792	-0.1095	-0.1284	-0.0637	-0.0749	0.8383	0.067	3.8611	1.1026	3.8211	1.1378	A-	A+	A-
ELA	3	747250	7	B-K	2	9573	0.6176	0.126	0.6091	0.1164	0.1348	0.0122	0.0015	0.4314	-0.2546	0.4323	-0.193	-0.1673	-0.0475	-0.0558	-0.017	0.0675	-0.709	0.9815	-0.999	0.9599	A-	A-	A-
ELA	3	747253	7	B-K	2	9587	0.532	0.5254	0.2038	0.1531	0.1054	0.0107	0.0015	0.4267	0.4293	-0.1874	-0.1794	-0.2145	-0.0612	-0.0546	0.4229	0.0663	-2.5991	0.9378	-2.6091	0.9149	A-	A-	A-
ELA	3	747247	7	B-V	2	9478	0.5032	0.1134	0.1138	0.2579	0.4913	0.0225	0.001	0.3564	-0.1846	-0.1915	-0.1114	0.36	-0.0707	-0.0446	0.5585	0.0663	0.971	1.0239	0.761	1.025	A-	A-	A-
ELA	3	747248	7	B-V	2	9617	0.3648	0.3073	0.2217	0.3614	0.1004	0.008	0.0011	0.1328	0.0266	-0.173	0.1352	-0.0025	-0.0352	-0.0427	1.2	0.0689	9.3113	1.294	9.1414	1.4247	A+	A-	A-
ELA	3	743412	7	D	2	9554	0.4021	0.1771	0.3958	0.1669	0.2445	0.0138	0.0019	0.3183	-0.2144	0.3224	-0.1746	0.0001	-0.0777	-0.0394	1.0069	0.0677	3.2411	1.0898	3.4811	1.1344	A+	A-	A-
ELA	3	743478	7	D	2	9584	0.8477	0.0556	0.0405	0.837	0.0543	0.0117	0.0008	0.4069	-0.2349	-0.2013	0.4043	-0.2191	-0.0464	-0.0404	-1.4477	0.0875	-3.0792	0.8432	-4.0994	0.6496	A-	A-	B-
ELA	3	747166	8	B-C	2	9522	0.3744	0.2622	0.3674	0.2264	0.1253	0.0149	0.0037	0.2738	-0.0522	0.2793	-0.0311	-0.2568	-0.076	-0.0727	1.1842	0.0687	3.3011	1.0956	3.9612	1.1713	A+	A+	A+
ELA	3	747168	8	B-C	1	9564	0.3541	0.2987	0.1608	0.1772	0.3491	0.0129	0.0014	0.3544	-0.0989	-0.1535	-0.1547	0.3566	-0.0735	-0.0257	1.1888	0.0687	0.981	1.0277	1.9211	1.0806	A+	A-	A-
ELA	3	747169	8	B-C	2	9632	0.6648	0.6599	0.1657	0.1161	0.0509	0.0066	0.0007	0.3896	0.3927	-0.24	-0.1625	-0.1778	-0.0588	-0.0344	-0.294	0.0696	-1.309	0.9619	-1.7191	0.9201	A-	A-	A-
ELA	3	747170	8	B-K	1	9596	0.6205	0.1016	0.6136	0.1908	0.083	0.0104	0.0006	0.4893	-0.2279	0.4902	-0.2287	-0.2663	-0.0558	-0.0349	-0.0757	0.0681	-3.6291	0.9048	-4.3092	0.8319	A-	A-	A-
ELA	3	747173	8	B-K	2	9625	0.2946	0.5126	0.1421	0.2923	0.0449	0.0065	0.0015	0.1954	0.0106	-0.1213	0.1984	-0.222	-0.0626	-0.0557	1.5377	0.0718	3.5411	1.1201	5.2013	1.2899	A+	A-	A-
ELA	3	747174	8	B-K	2	9555	0.5683	0.1573	0.0887	0.5596	0.1791	0.0143	0.0009	0.4813	-0.2459	-0.2115	0.481	-0.2116	-0.056	-0.0441	0.2037	0.0668	-5.2791	0.8724	-5.2992	0.8219	A-	A-	A-
ELA	3	747176	8	B-V	1	9598	0.8748	0.0543	0.0357	0.0339	0.8653	0.0104	0.0004	0.452	-0.2665	-0.2301	-0.2412	0.4512	-0.0649	-0.0362	-1.695	0.0945	-2.4091	0.8564	-4.0794	0.6087	A-	A+	A-
ELA	3	747177	8	B-V	2	9583	0.4283	0.423	0.2592	0.1443	0.1612	0.0116	0.0007	0.28	0.2844	-0.0213	-0.156	-0.1819	-0.0784	-0.0388	0.8508	0.067	4.1211	1.1088	4.5312	1.1663	A-	A-	A-
ELA	3	743413	8	D	2	9576	0.462	0.2762	0.1618	0.093	0.4559	0.0117	0.0013	0.397	-0.1453	-0.216	-0.1612	0.3985	-0.0598	-0.0199	0.6911	0.0665	-2.1891	0.9461	-1.9791	0.9348	A+	A-	A-
ELA	3	743479	8	D	2	9585	0.6782	0.0935	0.67	0.1295	0.0948	0.0113	0.0008	0.4121	-0.2039	0.4131	-0.1914	-0.2192	-0.0527	-0.0283	-0.3443	0.07	-1.149	0.9657	-0.839	0.9591	A-	A-	A-
ELA	3	745223	9	B-C	2	9501	0.4446	0.2124	0.128	0.4384	0.2072	0.0131	0.0009	0.4594	-0.2384	-0.2392	0.4606	-0.1046	-0.0671	-0.0357	0.8445	0.0671	-2.5891	0.9344	-1.219	0.957	A-	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	3	745224	9	B-C	3	9534	0.2471	0.0857	0.2445	0.4551	0.2041	0.0095	0.001	-0.0717	-0.2769	-0.0656	0.2343	-0.004	-0.0843	-0.036	1.8891	0.0763	6.5913	1.2754	9.6618	1.7701	A-	A+	A+
ELA	3	745225	9	B-C	3	9516	0.4625	0.1371	0.2246	0.4567	0.1692	0.0113	0.0011	0.3733	-0.2135	-0.0609	0.3761	-0.2139	-0.0679	-0.0331	0.7539	0.0668	0.171	1.0042	1.101	1.0377	A-	A-	A-
ELA	3	745228	9	B-C	2	9501	0.6219	0.6132	0.2256	0.0788	0.0684	0.013	0.001	0.346	0.3528	-0.1524	-0.2197	-0.1501	-0.0861	-0.04	0.0031	0.0678	1.731	1.0469	1.221	1.0484	A-	A-	A-
ELA	3	745234	9	B-C	2	9501	0.5818	0.5737	0.292	0.0698	0.0504	0.0133	0.0007	0.2773	0.2822	-0.0603	-0.2586	-0.1718	-0.0672	-0.0341	0.1553	0.0672	5.5912	1.152	4.9812	1.1928	A-	A-	A-
ELA	3	745227	9	B-K	2	9532	0.774	0.0557	0.0651	0.1027	0.7657	0.0102	0.0006	0.5192	-0.2488	-0.2909	-0.2779	0.5169	-0.0497	-0.0307	-0.8831	0.0767	-4.3992	0.8382	-5.2593	0.6806	A-	A-	A-
ELA	3	745233	9	B-K	1	9364	0.6623	0.0711	0.6436	0.1391	0.118	0.0272	0.001	0.4667	-0.2574	0.474	-0.2317	-0.1878	-0.1155	-0.0411	-0.1428	0.0687	-4.1891	0.8868	-3.5091	0.8565	A+	A-	A-
ELA	3	745230	9	B-V	2	9540	0.6338	0.1576	0.0489	0.1561	0.6274	0.0091	0.0008	0.5044	-0.1534	-0.1718	-0.4003	0.5043	-0.0479	-0.0367	-0.0929	0.0684	-5.8592	0.8465	-5.4192	0.7906	A-	A-	B-
ELA	3	743414	9	D	2	9502	0.4138	0.1918	0.1687	0.2175	0.4081	0.0131	0.0008	0.2904	-0.115	-0.1116	-0.1195	0.2929	-0.0608	-0.0235	0.9898	0.0677	2.1411	1.0579	2.6311	1.1018	A-	A-	A-
ELA	3	743480	9	D	2	9484	0.7343	0.7227	0.0743	0.1284	0.0588	0.0153	0.0005	0.4594	0.4611	-0.2275	-0.226	-0.2624	-0.0742	-0.0134	-0.6655	0.0736	-2.7091	0.9083	-3.4092	0.8094	C-	A-	A-
ELA	4	660255	0	A-C	3	87328	0.4585	0.1117	0.2384	0.4531	0.1851	0.0105	0.0012	0.3576	-0.2883	-0.0736	0.3603	-0.1259	-0.07	-0.0326	0.8228	0.0194	9.9011	1.1327	9.9012	1.2121	A-	A+	A+
ELA	4	661062	0	A-C	3	87371	0.6834	0.1299	0.6758	0.1138	0.0693	0.0098	0.0014	0.4758	-0.2557	0.4824	-0.207	-0.2446	-0.1069	-0.0399	-0.5753	0.0208	0.971	1.0094	1.401	1.0233	A-	A+	A+
ELA	4	660257	0	A-K	3	87371	0.6672	0.1193	0.6597	0.1388	0.0709	0.0098	0.0014	0.4875	-0.2902	0.4894	-0.1901	-0.2495	-0.0661	-0.0412	-0.3058	0.0201	-7.0291	0.9397	-7.1491	0.9023	A+	A+	A+
ELA	4	660260	0	A-K	3	87172	0.5329	0.1583	0.5258	0.1391	0.1633	0.0116	0.0018	0.4143	-0.144	0.4164	-0.2355	-0.1761	-0.0652	-0.0417	0.2125	0.0193	6.6611	1.0521	8.3111	1.0946	A+	A+	A+
ELA	4	660261	0	A-K	2	87183	0.4615	0.4553	0.0859	0.3743	0.0712	0.0119	0.0014	0.3393	0.3433	-0.2221	-0.0561	-0.2779	-0.0815	-0.0349	0.7899	0.0193	9.9011	1.1414	9.9012	1.2206	A-	A+	A+
ELA	4	661066	0	A-K	2	87525	0.6257	0.0945	0.1538	0.6198	0.1225	0.0074	0.002	0.5372	-0.3236	-0.2167	0.5414	-0.2423	-0.1067	-0.0317	-0.223	0.0199	-6.8791	0.9424	-4.7291	0.9375	A+	A+	A+
ELA	4	661070	0	A-K	2	87357	0.6704	0.0903	0.0657	0.6628	0.1699	0.0103	0.0011	0.4692	-0.2818	-0.265	0.475	-0.1775	-0.1038	-0.0319	-0.4892	0.0205	1.101	1.0102	0.181	1.0027	A+	A-	A+
ELA	4	661074	0	A-K	2	87524	0.4071	0.1595	0.2504	0.4033	0.1773	0.0082	0.0013	0.2893	-0.2774	-0.0655	0.2943	-0.01	-0.1063	-0.0279	1.0611	0.0197	9.9012	1.2242	9.9014	1.4059	A+	A+	A+
ELA	4	661078	0	A-K	3	87077	0.5457	0.0872	0.2675	0.5378	0.093	0.0135	0.0011	0.4494	-0.314	-0.1207	0.4542	-0.2456	-0.1042	-0.0343	0.1386	0.0194	4.551	1.0359	5.5011	1.0636	A-	A+	A+
ELA	4	660264	0	A-V	3	87881	0.537	0.5341	0.3182	0.0786	0.0637	0.0042	0.0012	0.3104	0.3142	-0.0392	-0.2492	-0.2683	-0.0696	-0.0397	0.512	0.0192	9.9012	1.1651	9.9012	1.2388	A+	A+	A-
ELA	4	661079	0	A-V	2	87578	0.4777	0.1659	0.1683	0.1836	0.4735	0.0074	0.0014	0.3683	-0.0661	-0.2205	-0.1777	0.3734	-0.1074	-0.0362	0.616	0.0192	9.9011	1.1072	9.9012	1.1594	A-	A+	A+
ELA	4	662026	0	A-V	2	87648	0.6793	0.1156	0.6738	0.1499	0.0527	0.0067	0.0013	0.4435	-0.2232	0.447	-0.2099	-0.2522	-0.0669	-0.0413	-0.3472	0.0202	-3.979	0.9651	0.021	1.0002	A-	A+	A+
ELA	4	663144	0	B-C	2	87483	0.4474	0.1199	0.4429	0.2859	0.1414	0.0086	0.0013	0.31	-0.2666	0.3139	-0.0049	-0.1673	-0.0816	-0.0362	0.7815	0.0193	9.9012	1.1862	9.9013	1.2892	A-	A+	A+
ELA	4	663146	0	B-C	2	87537	0.7501	0.0855	0.067	0.0951	0.7431	0.0079	0.0014	0.5749	-0.2905	-0.275	-0.3183	0.5779	-0.0854	-0.0421	-0.5768	0.0208	-9.8992	0.7674	-9.8993	0.6678	A+	A-	A+
ELA	4	711550	0	B-C	2	87382	0.4505	0.2706	0.1657	0.1071	0.4456	0.0096	0.0014	0.4395	-0.168	-0.169	-0.2315	0.443	-0.1015	-0.0329	0.3812	0.0193	5.901	1.0452	7.1111	1.0776	A-	A+	A+
ELA	4	711610	0	B-C	3	86988	0.4185	0.3167	0.117	0.412	0.1388	0.0142	0.0013	0.2978	-0.0112	-0.1785	0.3044	-0.2097	-0.1119	-0.042	0.6581	0.0193	9.9012	1.1766	9.9013	1.2562	A+	A+	A+
ELA	4	663148	0	B-K	3	87738	0.7091	0.0904	0.1263	0.0722	0.7041	0.0058	0.0013	0.561	-0.2784	-0.2875	-0.2871	0.5647	-0.088	-0.0408	-0.546	0.0207	-9.8991	0.8577	-9.8992	0.7908	A+	A+	A+
ELA	4	663149	0	B-K	2	87624	0.4607	0.2447	0.1871	0.4569	0.103	0.007	0.0013	0.4524	-0.1591	-0.2067	0.4552	-0.2266	-0.09	-0.0373	0.7617	0.0193	5.291	1.0406	8.9711	1.102	A-	A-	A-
ELA	4	711545	0	B-K	2	87244	0.5127	0.1895	0.1311	0.5062	0.1604	0.0111	0.0015	0.5255	-0.1595	-0.3557	0.5284	-0.1894	-0.1027	-0.0331	0.2154	0.0193	-4.539	0.9654	-3.199	0.9651	A-	A+	A+
ELA	4	711548	0	B-K	3	87318	0.3934	0.3887	0.1487	0.2791	0.1717	0.0091	0.0027	0.2736	0.2784	-0.1945	-0.0325	-0.1085	-0.1024	-0.0252	1.2241	0.0199	9.9012	1.2054	9.9014	1.392	A-	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	4	664245	0	B-V	2	87714	0.8178	0.0695	0.8119	0.0668	0.0446	0.0054	0.0019	0.5099	-0.2824	0.5137	-0.2924	-0.235	-0.0791	-0.038	-1.2802	0.0237	-9.8992	0.8305	-9.8993	0.6715	A-	A+	A+
ELA	4	711543	0	B-V	2	87332	0.6398	0.0673	0.1709	0.1178	0.6324	0.0106	0.001	0.5122	-0.2556	-0.2638	-0.2299	0.5172	-0.1054	-0.0364	-0.4724	0.0205	-2.289	0.9789	-1.409	0.9781	A-	A+	A+
ELA	4	711544	0	B-V	2	87393	0.5882	0.1849	0.5817	0.1492	0.0733	0.0098	0.0011	0.4952	-0.1837	0.5009	-0.2698	-0.257	-0.1155	-0.0392	-0.0981	0.0197	-1.349	0.9889	-0.969	0.9877	A-	A-	A-
ELA	4	581064	0	D	2	87776	0.4735	0.1927	0.4704	0.189	0.1413	0.0044	0.0022	0.4241	-0.2095	0.4258	-0.1553	-0.1832	-0.049	-0.0438	0.6524	0.0193	8.0011	1.0613	8.9711	1.0993	A-	A-	A-
ELA	4	662730	0	D	2	87447	0.5636	0.1502	0.1458	0.1359	0.5578	0.0086	0.0017	0.5185	-0.2636	-0.226	-0.221	0.5213	-0.0835	-0.0364	0.2265	0.0193	-8.6191	0.9351	-7.7091	0.9175	A-	A-	A-
ELA	4	662733	0	D	2	87781	0.5511	0.1598	0.1457	0.1405	0.5475	0.0041	0.0024	0.4366	-0.2009	-0.1972	-0.2013	0.4384	-0.0509	-0.0376	0.0954	0.0194	4.831	1.0384	3.381	1.0394	A+	A-	A-
ELA	4	662797	0	D	2	87771	0.3555	0.114	0.4452	0.3532	0.081	0.0046	0.002	0.4267	-0.0834	-0.2485	0.4281	-0.1782	-0.0593	-0.0438	1.2302	0.0199	0.301	1.0025	6.4811	1.0908	A-	A-	A-
ELA	4	714303	0	D	2	87662	0.8662	0.8594	0.0478	0.047	0.0379	0.0067	0.0012	0.4406	0.4461	-0.236	-0.2395	-0.2424	-0.0758	-0.0451	-1.6399	0.026	-9.8992	0.8003	-9.8994	0.6272	A-	A-	B-
ELA	4	714306	0	D	2	87354	0.261	0.4052	0.0826	0.2428	0.2581	0.0091	0.0023	0.3994	-0.1722	-0.1242	-0.1096	0.4007	-0.0829	-0.0361	1.4243	0.0204	-9.8991	0.9073	-1.659	0.9749	A-	A-	A-
ELA	4	714803	0	D	2	87888	0.6616	0.6581	0.0737	0.188	0.0749	0.0036	0.0018	0.5378	0.5392	-0.2538	-0.3105	-0.2411	-0.054	-0.0349	-0.3442	0.0202	-9.8991	0.8824	-9.8992	0.8073	A+	A-	A-
ELA	4	714814	0	D	2	87473	0.5746	0.5688	0.2115	0.126	0.0837	0.0084	0.0017	0.3708	0.3761	-0.0888	-0.2264	-0.2366	-0.0853	-0.0387	0.1495	0.0194	9.9011	1.0852	9.9011	1.1388	A-	A-	A-
ELA	4	714815	0	D	2	87532	0.6621	0.0956	0.6559	0.1008	0.1382	0.0079	0.0014	0.5009	-0.2041	0.5054	-0.2384	-0.2863	-0.0872	-0.0463	-0.1712	0.0198	-9.8991	0.8967	-9.8991	0.862	A+	A-	A-
ELA	4	743474	1	A-C	2	9746	0.3976	0.3936	0.145	0.2067	0.2446	0.0079	0.0022	0.2526	0.2562	-0.2368	-0.0648	-0.0178	-0.0673	-0.0403	0.886	0.0598	4.9711	1.1324	5.1912	1.2119	A-	A+	A+
ELA	4	743466	1	A-K	2	9816	0.6494	0.1209	0.6475	0.0501	0.1785	0.0027	0.0003	0.4467	-0.2792	0.4484	-0.1954	-0.2026	-0.0476	-0.03	-0.2902	0.059	-2.3991	0.9424	-2.7191	0.8985	A+	A+	A-
ELA	4	743467	1	A-K	2	9757	0.5095	0.1871	0.1347	0.5049	0.1643	0.0071	0.0019	0.348	-0.1108	-0.1616	0.3524	-0.1866	-0.0851	-0.0355	0.3778	0.0582	3.7011	1.0903	3.5911	1.1206	A+	A+	A+
ELA	4	743469	1	A-K	3	9690	0.5244	0.133	0.2251	0.11	0.516	0.0153	0.0005	0.3897	-0.1877	-0.0923	-0.2742	0.3897	-0.0482	-0.0319	0.3424	0.0581	1.741	1.0417	2.7311	1.0907	A+	A-	A-
ELA	4	743471	1	A-K	2	9791	0.4958	0.1434	0.1655	0.1925	0.493	0.0049	0.0007	0.4667	-0.2992	-0.2177	-0.1088	0.4686	-0.0693	-0.0309	0.4693	0.0583	-1.779	0.9578	0.271	1.0085	A+	A+	A+
ELA	4	743472	1	A-K	1	9785	0.4097	0.185	0.1978	0.4072	0.2037	0.0045	0.0017	0.3483	-0.1343	-0.1695	0.3507	-0.116	-0.0594	-0.0462	0.7686	0.0592	4.4011	1.1136	5.1212	1.1969	A+	A-	A-
ELA	4	743463	1	A-V	2	9758	0.6238	0.6182	0.1422	0.0868	0.1438	0.0069	0.002	0.3954	0.398	-0.1048	-0.2396	-0.236	-0.0645	-0.0244	-0.1743	0.0586	2.021	1.049	2.6211	1.0978	A+	A+	A-
ELA	4	743464	1	A-V	2	9693	0.7067	0.1423	0.6957	0.0842	0.0623	0.0138	0.0017	0.413	-0.2004	0.4167	-0.216	-0.2124	-0.0784	-0.0304	-0.5416	0.0602	-1.279	0.9673	0.091	1.0035	A+	A-	A-
ELA	4	744143	1	D	2	19450	0.9349	0.0191	0.925	0.0295	0.0159	0.01	0.0005	0.2863	-0.1567	0.2869	-0.1559	-0.172	-0.0562	-0.0289	-2.6761	0.0743	-2.2891	0.8743	1.1811	1.1298	A+	A-	B-
ELA	4	744152	1	D	2	9750	0.6409	0.0879	0.09	0.6347	0.1777	0.0073	0.0024	0.3809	-0.2679	-0.2484	0.3847	-0.0815	-0.0644	-0.0341	-0.3635	0.0593	2.2311	1.0559	2.1811	1.0889	A+	A-	A-
ELA	4	744227	1	D	1	9718	0.8132	0.1199	0.8027	0.0421	0.0222	0.0127	0.0003	0.3726	-0.2374	0.3789	-0.1864	-0.1807	-0.0809	-0.0289	-1.5241	0.0708	0.411	1.0153	0.351	1.0259	A-	B-	B-
ELA	4	747379	2	A-C	1	9691	0.2902	0.287	0.0804	0.3759	0.2458	0.0097	0.0012	0.1723	0.175	-0.1168	0.2449	-0.3704	-0.0542	-0.0348	1.5611	0.062	5.5112	1.1634	9.4115	1.5189	A+	A-	A+
ELA	4	747372	2	A-K	2	9729	0.4558	0.1722	0.1885	0.4525	0.1797	0.0052	0.0018	0.2434	-0.1567	-0.137	0.2477	-0.0089	-0.0721	-0.0448	0.7426	0.0574	7.7512	1.1783	7.9813	1.2654	A+	A+	A+
ELA	4	747374	2	A-K	3	9761	0.6186	0.1161	0.2068	0.0571	0.6162	0.0027	0.0011	0.327	-0.2886	-0.0057	-0.2669	0.329	-0.0463	-0.0282	-0.1354	0.0588	4.2711	1.1069	4.2712	1.1624	A+	A+	A+
ELA	4	747375	2	A-K	3	9647	0.4819	0.1832	0.2094	0.4745	0.1175	0.015	0.0004	0.4356	-0.1857	-0.1431	0.4364	-0.2468	-0.0653	-0.0211	0.5661	0.0571	-2.4491	0.9479	-1.339	0.9605	A-	A-	A-
ELA	4	747377	2	A-K	2	9739	0.5865	0.0676	0.583	0.2569	0.0865	0.0043	0.0017	0.2822	-0.1591	0.2861	-0.0662	-0.2371	-0.0566	-0.0453	0.0404	0.058	5.3911	1.1291	5.5012	1.1929	A-	A+	A-
ELA	4	747368	2	A-V	2	9753	0.2162	0.3658	0.1748	0.2395	0.2152	0.0038	0.0008	0.0332	0.0885	-0.1532	0.01	0.0346	-0.0521	0.01	1.978	0.0669	8.0213	1.307	9.9019	1.9056	A-	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	4	747369	2	A-V	1	9684	0.4504	0.4452	0.1437	0.1272	0.2723	0.0102	0.0014	0.2097	0.2131	-0.0855	-0.1392	-0.051	-0.0611	-0.019	0.7322	0.0573	9.8312	1.2291	8.7413	1.2919	A+	A+	A+
ELA	4	747370	2	A-V	1	9764	0.3693	0.1301	0.368	0.1141	0.3843	0.0028	0.0007	0.1523	-0.2236	0.154	-0.1739	0.1221	-0.0391	-0.0418	1.1057	0.0587	8.3312	1.2089	9.2514	1.373	A+	A+	A+
ELA	4	744144	2	D	2	19462	0.8294	0.0726	0.0549	0.8218	0.0416	0.0083	0.0008	0.3736	-0.1949	-0.2189	0.378	-0.1869	-0.067	-0.0294	-1.4141	0.0527	-2.1691	0.9329	-1.2791	0.9262	A+	A-	A-
ELA	4	744153	2	D	2	9711	0.7965	0.0477	0.082	0.7894	0.0721	0.0058	0.0031	0.4593	-0.2229	-0.2704	0.4589	-0.2336	-0.0357	-0.042	-1.2132	0.0701	-5.3392	0.8047	-5.2393	0.6741	A-	A-	A-
ELA	4	744228	2	D	2	9705	0.4532	0.1826	0.0967	0.4489	0.2624	0.0087	0.0008	0.2941	-0.1535	-0.2215	0.295	-0.0404	-0.0319	-0.0423	0.6858	0.0573	6.5111	1.1476	6.8012	1.2197	A-	A-	A-
ELA	4	744011	3	A-C	2	9767	0.3055	0.5067	0.0999	0.3038	0.084	0.0048	0.0009	0.1443	0.1479	-0.2289	0.1472	-0.2431	-0.0738	-0.0159	1.4432	0.0613	9.7413	1.2879	9.9016	1.6133	A+	A-	A-
ELA	4	744014	3	A-K	2	9744	0.6364	0.223	0.0715	0.6313	0.0662	0.0063	0.0017	0.4875	-0.2675	-0.2474	0.49	-0.218	-0.0656	-0.0464	-0.1046	0.0593	-2.1491	0.947	-2.5591	0.905	A+	A+	A+
ELA	4	744015	3	A-K	2	9758	0.5776	0.5738	0.1534	0.2077	0.0585	0.0047	0.0019	0.405	0.4085	-0.2151	-0.132	-0.2741	-0.0689	-0.0431	0.1628	0.0583	1.801	1.0428	1.9811	1.0681	A-	A-	A-
ELA	4	744016	3	A-K	2	9641	0.6479	0.1587	0.089	0.0979	0.6359	0.0147	0.0039	0.5543	-0.2655	-0.2538	-0.2962	0.5491	-0.0531	-0.0087	-0.175	0.0597	-5.0491	0.8766	-3.9091	0.8527	A+	A+	A+
ELA	4	744012	3	A-V	2	9800	0.8607	0.0601	0.8587	0.0611	0.0178	0.002	0.0003	0.4579	-0.3043	0.4607	-0.2619	-0.1709	-0.051	-0.0309	-1.7206	0.0801	-2.9491	0.8579	-4.1294	0.6446	A-	A-	B-
ELA	4	744020	3	A-V	2	9773	0.3757	0.2749	0.289	0.0572	0.3738	0.0044	0.0007	0.3442	-0.1667	-0.0609	-0.2597	0.3459	-0.0733	-0.007	1.1428	0.0594	2.3411	1.0587	3.8312	1.1554	A+	A+	A+
ELA	4	744021	3	A-V	2	9724	0.188	0.1511	0.0936	0.1861	0.5592	0.0089	0.0012	0.0757	-0.2154	-0.2316	0.0787	0.2448	-0.0655	-0.0402	2.2511	0.0709	5.3612	1.2258	9.9021	2.1435	A+	A+	A+
ELA	4	744022	3	A-V	2	9739	0.6734	0.1751	0.6676	0.0671	0.0816	0.0064	0.0021	0.4089	-0.1556	0.4148	-0.2488	-0.2381	-0.0863	-0.0424	-0.3827	0.061	1.051	1.0285	1.3811	1.062	A+	A-	A-
ELA	4	744145	3	D	2	9696	0.55	0.5429	0.0552	0.2583	0.1307	0.0115	0.0014	0.3424	0.3485	-0.2287	-0.1932	-0.0761	-0.0894	-0.0435	0.2328	0.0581	3.2411	1.0772	3.8711	1.1328	A+	B-	A-
ELA	4	744154	3	D	2	9713	0.7259	0.0972	0.0917	0.0821	0.7178	0.0082	0.003	0.4842	-0.2653	-0.2344	-0.2373	0.4837	-0.0425	-0.046	-0.7013	0.0638	-2.4991	0.9251	-2.3891	0.8757	A+	A-	A-
ELA	4	744229	3	D	1	9710	0.5292	0.204	0.1246	0.1367	0.5232	0.0105	0.001	0.4293	-0.1917	-0.2168	-0.174	0.4296	-0.0437	-0.0458	0.3646	0.0579	1.111	1.0256	1.081	1.0347	A+	A-	A-
ELA	4	744208	4	A-C	2	9619	0.5048	0.4959	0.1996	0.0947	0.1921	0.0167	0.001	0.1662	0.1756	-0.0847	-0.2548	0.0844	-0.0898	-0.0346	0.5301	0.0575	9.9013	1.3033	9.9015	1.4562	A-	A-	A+
ELA	4	744200	4	A-K	2	9706	0.5687	0.1023	0.1452	0.5637	0.1799	0.0062	0.0027	0.4737	-0.2915	-0.1375	0.4761	-0.2398	-0.0686	-0.0359	0.1212	0.0581	-3.5891	0.9188	-3.2791	0.8945	A+	A-	A-
ELA	4	744203	4	A-K	3	9736	0.5559	0.1718	0.5526	0.1977	0.0721	0.0054	0.0004	0.3889	-0.2013	0.3916	-0.1088	-0.2707	-0.0659	-0.0301	0.1969	0.0579	2.3611	1.0549	2.9211	1.0974	A-	A-	A-
ELA	4	744204	4	A-K	3	9612	0.3204	0.3145	0.1354	0.082	0.4496	0.0125	0.006	-0.0788	-0.0723	-0.1782	-0.2903	0.3655	-0.0403	-0.0404	1.474	0.0614	9.9015	1.5034	9.9019	1.8744	A-	A+	A-
ELA	4	744206	4	A-K	1	9736	0.6521	0.0822	0.195	0.6483	0.0686	0.0051	0.0007	0.373	-0.2198	-0.218	0.3765	-0.1089	-0.0635	-0.0355	-0.2707	0.06	1.881	1.0493	2.4411	1.1013	A+	A+	A+
ELA	4	744197	4	A-V	1	9666	0.3749	0.2761	0.1221	0.2187	0.3701	0.0118	0.0011	0.3069	-0.1163	-0.1398	-0.103	0.3099	-0.0727	-0.0406	1.1074	0.0589	4.8111	1.1187	5.4012	1.2173	A-	A+	A+
ELA	4	744198	4	A-V	2	9716	0.8197	0.0672	0.8132	0.0547	0.057	0.006	0.0018	0.4867	-0.24	0.4912	-0.249	-0.2891	-0.0761	-0.0425	-1.3124	0.0719	-4.9992	0.8082	-4.6793	0.6835	A+	A-	A+
ELA	4	744205	4	A-V	2	9762	0.7887	0.0711	0.0488	0.0908	0.7862	0.0026	0.0006	0.5065	-0.311	-0.2501	-0.2476	0.5087	-0.0498	-0.0461	-1.1264	0.0689	-4.9192	0.8268	-4.2893	0.7342	A+	A+	A-
ELA	4	744146	4	D	2	9651	0.8702	0.0219	0.0239	0.0822	0.8576	0.0135	0.001	0.407	-0.1941	-0.1952	-0.272	0.4136	-0.0874	-0.0499	-1.7369	0.0805	-2.8091	0.862	-3.5293	0.6935	A-	A-	A-
ELA	4	744221	4	D	2	9717	0.6121	0.1137	0.6074	0.1385	0.1327	0.0053	0.0025	0.4861	-0.2277	0.4882	-0.2032	-0.2643	-0.0558	-0.0454	-0.1101	0.059	-4.0991	0.9021	-3.9291	0.8611	A+	A-	A-
ELA	4	744230	4	D	1	9681	0.5838	0.0719	0.1238	0.5771	0.2158	0.0102	0.0012	0.3769	-0.2638	-0.2483	0.3791	-0.0741	-0.0547	-0.0398	0.0847	0.0582	2.8711	1.0684	3.0811	1.1073	A+	A-	A-
ELA	4	745880	5	B-C	2	9763	0.46	0.1786	0.4571	0.2489	0.1091	0.0053	0.001	0.4176	-0.2483	0.4198	-0.107	-0.199	-0.0622	-0.0385	0.6226	0.0579	1.111	1.0253	1.9311	1.0631	A+	A+	A+
ELA	4	745881	5	B-C	2	9740	0.7	0.1532	0.0632	0.6939	0.081	0.0057	0.003	0.4043	-0.1749	-0.2755	0.409	-0.1859	-0.062	-0.0571	-0.5056	0.0621	0.351	1.0096	1.4411	1.0723	A+	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	4	745883	5	B-C	2	9714	0.6048	0.598	0.1678	0.09	0.1329	0.0091	0.0022	0.3909	0.3944	-0.2015	-0.2232	-0.1353	-0.0713	-0.0323	-0.0642	0.0592	0.821	1.0201	1.121	1.0432	A-	A+	A+
ELA	4	745884	5	B-K	2	9699	0.4274	0.1657	0.2839	0.1157	0.4219	0.0114	0.0014	0.3438	-0.2238	-0.0512	-0.1767	0.346	-0.0621	-0.0383	0.8201	0.0582	3.2611	1.0776	4.7112	1.166	A+	A-	A+
ELA	4	745886	5	B-K	2	9605	0.3816	0.13	0.1911	0.2835	0.373	0.015	0.0074	0.2033	-0.2116	-0.0797	0.0226	0.2048	-0.0371	-0.0261	1.0952	0.0592	8.1512	1.2132	8.5314	1.354	A-	A-	A-
ELA	4	745888	5	B-K	2	9775	0.5824	0.5794	0.2358	0.1284	0.0512	0.0036	0.0015	0.4646	0.4666	-0.2683	-0.1753	-0.2385	-0.0474	-0.0618	0.0242	0.0588	-3.0691	0.9277	-3.3691	0.8801	A+	A+	A+
ELA	4	745890	5	B-V	2	9792	0.5258	0.1807	0.1226	0.5241	0.1693	0.0024	0.0009	0.2849	-0.1519	-0.1264	0.2881	-0.1049	-0.0643	-0.0493	0.2859	0.0581	6.8912	1.1671	7.1313	1.2567	A+	A+	A-
ELA	4	745891	5	B-V	2	9736	0.6937	0.0623	0.6874	0.105	0.1362	0.0066	0.0024	0.4577	-0.2624	0.4624	-0.2178	-0.2203	-0.0692	-0.0609	-0.5602	0.0626	-1.159	0.9667	-1.0791	0.9449	A-	A-	A-
ELA	4	744147	5	D	2	9695	0.3845	0.2279	0.3794	0.1702	0.2093	0.0124	0.0008	0.3814	-0.17	0.3838	-0.0703	-0.1927	-0.0833	-0.0321	1.0265	0.0589	0.821	1.0197	3.0411	1.1136	A-	A-	A-
ELA	4	744222	5	D	2	9757	0.5748	0.5708	0.234	0.112	0.0763	0.0049	0.002	0.3228	0.3255	-0.1026	-0.2161	-0.1679	-0.0433	-0.0425	0.0962	0.0586	4.4711	1.1096	4.0812	1.1526	A+	A-	A-
ELA	4	744231	5	D	1	9751	0.5546	0.5504	0.0857	0.0962	0.2602	0.0067	0.0008	0.2754	0.2779	-0.2312	-0.2303	-0.0025	-0.0448	-0.0303	0.1486	0.0584	6.4612	1.1594	5.7712	1.215	A-	A-	A-
ELA	4	747178	6	B-C	2	9811	0.268	0.178	0.3243	0.228	0.2673	0.0017	0.0007	0.1022	-0.1867	0.1206	-0.0665	0.1037	-0.0446	-0.0438	1.5631	0.0616	8.1712	1.2431	7.8614	1.4159	A+	A-	A-
ELA	4	747179	6	B-C	2	9765	0.4818	0.2892	0.4784	0.0937	0.1316	0.005	0.0021	0.345	-0.0444	0.3488	-0.2124	-0.2511	-0.0696	-0.0526	0.5549	0.0572	3.4111	1.0753	4.2011	1.1297	A-	A-	A-
ELA	4	747180	6	B-C	2	9739	0.8092	0.0619	0.8013	0.0517	0.0753	0.0085	0.0012	0.4576	-0.2527	0.4558	-0.2322	-0.2444	-0.0415	-0.0343	-1.2603	0.0717	-3.7591	0.8528	-3.8993	0.7377	A-	A-	A-
ELA	4	747181	6	B-C	2	9767	0.3503	0.1738	0.0871	0.3478	0.3843	0.0034	0.0036	0.1595	-0.1896	-0.2449	0.1631	0.1434	-0.0725	-0.0391	1.2362	0.0592	8.6112	1.2232	9.9014	1.4477	A+	A-	A-
ELA	4	747183	6	B-K	2	9759	0.5311	0.2542	0.1097	0.527	0.1014	0.0056	0.0021	0.4187	-0.152	-0.1952	0.4223	-0.2515	-0.0749	-0.0476	0.3867	0.0573	1.321	1.029	2.2311	1.068	A-	A-	A+
ELA	4	747185	6	B-K	2	9636	0.321	0.3145	0.1758	0.329	0.1604	0.0161	0.0042	0.1048	0.1069	-0.0632	0.064	-0.1361	-0.0268	-0.0356	1.3883	0.0602	9.2913	1.2573	9.9015	1.4779	A-	A-	A+
ELA	4	747187	6	B-V	2	9757	0.857	0.8502	0.066	0.0471	0.0288	0.0043	0.0037	0.4073	0.4115	-0.2165	-0.2416	-0.2098	-0.0809	-0.0259	-1.6567	0.0798	-3.8892	0.8141	-3.6593	0.6954	A+	A-	A-
ELA	4	747188	6	B-V	2	9795	0.1087	0.6546	0.1517	0.1083	0.0813	0.0029	0.0011	-0.045	0.3597	-0.2759	-0.0432	-0.1978	-0.0603	-0.0392	2.9359	0.0855	-0.529	0.9683	7.9921	2.1038	A-	A-	A+
ELA	4	744148	6	D	2	9726	0.7025	0.6948	0.1104	0.1542	0.0295	0.0095	0.0016	0.4566	0.4608	-0.3136	-0.1848	-0.2223	-0.0731	-0.0621	-0.6225	0.063	-4.7791	0.8628	-3.2592	0.8449	A+	A+	A-
ELA	4	744223	6	D	2	9743	0.4383	0.2577	0.0909	0.2079	0.4342	0.0065	0.0028	0.2695	-0.0769	-0.2321	-0.0709	0.2716	-0.0487	-0.0301	0.7819	0.0574	7.1612	1.1641	6.9312	1.2301	A-	A+	A+
ELA	4	744232	6	D	2	9736	0.6669	0.1718	0.0725	0.6602	0.0854	0.0086	0.0014	0.506	-0.2876	-0.2316	0.5037	-0.2353	-0.0295	-0.041	-0.44	0.0613	-4.3991	0.8823	-4.3292	0.8187	A+	A-	A-
ELA	4	745349	7	B-C	2	9718	0.4822	0.2705	0.1156	0.4788	0.1281	0.0055	0.0014	0.3013	-0.078	-0.2226	0.3032	-0.1228	-0.0446	-0.0344	0.5927	0.0579	7.6112	1.1823	8.2013	1.2973	A+	A-	A-
ELA	4	745350	7	B-C	2	9745	0.5361	0.2124	0.5338	0.0796	0.1699	0.0032	0.001	0.3606	-0.114	0.3618	-0.2147	-0.1936	-0.035	-0.0322	0.3261	0.0581	5.0811	1.123	5.3312	1.1903	A-	A-	A-
ELA	4	745351	7	B-C	2	9716	0.7312	0.7259	0.0776	0.089	0.1003	0.0057	0.0014	0.431	0.4337	-0.2524	-0.1524	-0.2558	-0.0594	-0.0322	-0.7171	0.0645	-2.7291	0.9153	-1.7191	0.9051	A+	A+	A+
ELA	4	745352	7	B-C	2	9734	0.7187	0.0954	0.1033	0.7149	0.081	0.0045	0.0008	0.4909	-0.2581	-0.2375	0.4942	-0.2548	-0.0723	-0.0224	-0.6678	0.064	-4.5691	0.8638	-4.9192	0.7531	A+	A+	A+
ELA	4	745354	7	B-K	2	9721	0.4855	0.2018	0.0874	0.2218	0.4823	0.0053	0.0013	0.3466	-0.1777	-0.2237	-0.0834	0.3486	-0.0562	-0.0266	0.5765	0.0579	3.3311	1.0773	3.0011	1.1026	A+	A-	A+
ELA	4	745357	7	B-K	2	9702	0.3186	0.3165	0.2203	0.1388	0.3159	0.0077	0.0009	0.2136	0.0308	-0.0695	-0.2319	0.216	-0.0541	-0.0346	1.411	0.0608	5.6812	1.1548	6.3813	1.3253	A+	A-	A-
ELA	4	745359	7	B-V	2	9717	0.8312	0.0512	0.0441	0.0722	0.8254	0.0047	0.0024	0.4802	-0.2503	-0.2493	-0.2756	0.4782	-0.0459	-0.0141	-1.4695	0.0754	-4.7592	0.8013	-5.3494	0.5986	A+	A-	B-
ELA	4	745360	7	B-V	2	9761	0.7506	0.0689	0.7487	0.1424	0.0374	0.0022	0.0003	0.428	-0.3227	0.4298	-0.1712	-0.223	-0.0449	-0.0246	-0.8749	0.0663	-3.1391	0.8968	-0.8291	0.9484	A+	A-	A-
ELA	4	716624	7	D	2	9684	0.7669	0.0578	0.0741	0.0987	0.7589	0.0097	0.0007	0.4747	-0.239	-0.2353	-0.2662	0.4736	-0.0555	-0.0115	-0.9802	0.0676	-4.4892	0.8484	-4.6093	0.7245	A+	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	4	744149	7	D	2	9650	0.6156	0.2109	0.093	0.6071	0.0751	0.013	0.0009	0.293	-0.1232	-0.1257	0.2981	-0.1898	-0.0733	-0.0164	-0.0482	0.0594	6.7612	1.1811	7.3913	1.3125	A+	B-	B-
ELA	4	744224	7	D	2	9710	0.7863	0.1446	0.7802	0.0521	0.0153	0.0061	0.0016	0.408	-0.3209	0.411	-0.152	-0.1442	-0.0604	-0.0284	-1.147	0.0699	-0.239	0.9902	-0.349	0.9733	A+	A-	A-
ELA	4	743376	8	B-C	2	9704	0.6127	0.1424	0.0601	0.1805	0.6061	0.0069	0.004	0.4943	-0.293	-0.2488	-0.1912	0.4936	-0.0668	-0.0096	-0.0572	0.0592	-4.1391	0.9009	-4.1292	0.8465	A+	A-	A-
ELA	4	743377	8	B-C	2	9759	0.6437	0.0939	0.1156	0.6403	0.1449	0.0038	0.0015	0.5262	-0.2695	-0.2928	0.5273	-0.217	-0.0495	-0.0357	-0.2009	0.0599	-4.7791	0.8821	-4.1492	0.8345	A+	A-	A-
ELA	4	743382	8	B-C	2	9740	0.7236	0.0519	0.1354	0.7184	0.0871	0.0053	0.0019	0.4617	-0.2547	-0.2067	0.4638	-0.269	-0.0437	-0.0538	-0.7256	0.064	-0.879	0.973	-0.609	0.9642	A-	A-	A-
ELA	4	743378	8	B-K	2	9768	0.6121	0.1573	0.153	0.0759	0.6094	0.0029	0.0015	0.4362	-0.21	-0.1794	-0.2586	0.4383	-0.0618	-0.0254	-0.0766	0.0593	-1.289	0.9681	-1.5491	0.9395	A+	A-	A-
ELA	4	743380	8	B-K	2	9786	0.5107	0.5094	0.0845	0.3103	0.0933	0.002	0.0005	0.4376	0.4386	-0.2901	-0.2058	-0.1407	-0.0432	-0.0218	0.4539	0.058	-0.129	0.9969	1.141	1.038	A-	B-	B-
ELA	4	743381	8	B-K	2	9767	0.2789	0.4587	0.2776	0.0789	0.1803	0.0036	0.0009	0.0481	0.2587	0.0504	-0.2101	-0.2358	-0.0548	-0.0315	1.6355	0.0631	9.9013	1.3339	9.9018	1.7558	A+	A+	A+
ELA	4	743383	8	B-V	2	9705	0.755	0.0553	0.7468	0.1312	0.0559	0.0099	0.0009	0.422	-0.2402	0.4239	-0.2021	-0.2365	-0.0614	-0.0258	-0.8987	0.066	-2.5491	0.9174	-1.7891	0.8897	A-	A+	A+
ELA	4	743385	8	B-V	2	9698	0.7845	0.7755	0.0664	0.0699	0.0768	0.0105	0.001	0.4446	0.4431	-0.2385	-0.2648	-0.1959	-0.0477	-0.0321	-1.1075	0.0687	-1.8491	0.9333	-1.5991	0.8887	A-	A-	A-
ELA	4	744150	8	D	2	9681	0.6626	0.1025	0.6539	0.1719	0.0584	0.0122	0.001	0.3898	-0.249	0.3946	-0.127	-0.2324	-0.0824	-0.0226	-0.3348	0.0607	1.151	1.0309	0.581	1.026	A+	A-	A-
ELA	4	744225	8	D	2	9732	0.7357	0.7298	0.1016	0.0885	0.0721	0.0051	0.003	0.4747	0.4741	-0.2178	-0.2686	-0.2487	-0.0266	-0.0413	-0.8025	0.0649	-4.7991	0.8545	-2.7292	0.8445	A+	A-	A-
ELA	4	744858	9	B-C	3	9753	0.4532	0.4491	0.1994	0.1465	0.1959	0.0076	0.0015	0.1583	0.1633	-0.111	-0.1829	0.0889	-0.0712	-0.0327	0.7592	0.0576	9.9014	1.3595	9.9015	1.5152	A-	A+	A+
ELA	4	744860	9	B-C	3	9654	0.2607	0.2647	0.2687	0.2557	0.1917	0.0171	0.0021	0.2044	-0.033	-0.0616	0.2059	-0.1012	-0.0504	-0.0343	1.7749	0.0635	3.9911	1.125	7.6315	1.4684	A-	A-	A-
ELA	4	744862	9	B-C	2	9718	0.5088	0.1883	0.1979	0.0988	0.5024	0.0109	0.0018	0.3692	-0.165	-0.1164	-0.219	0.3734	-0.0853	-0.0382	0.497	0.0575	3.7211	1.0841	4.4811	1.1488	A-	A-	A+
ELA	4	744863	9	B-C	3	9795	0.4501	0.4479	0.1679	0.2489	0.1303	0.0037	0.0012	0.227	0.2306	-0.142	0.013	-0.1821	-0.0688	-0.0494	0.7091	0.0576	8.3012	1.1933	8.8413	1.3101	A+	A+	A-
ELA	4	744868	9	B-C	2	9705	0.3363	0.2226	0.2831	0.3316	0.1486	0.012	0.002	0.2125	-0.1326	0.0418	0.2157	-0.1592	-0.0641	-0.0354	1.3473	0.0599	6.3612	1.1684	7.5613	1.3485	A-	A-	A+
ELA	4	744867	9	B-K	2	9774	0.5146	0.1897	0.1696	0.1227	0.511	0.0048	0.0022	0.3575	-0.2408	-0.0365	-0.2022	0.3597	-0.0551	-0.0321	0.4085	0.0576	2.7611	1.0625	2.1011	1.0688	A-	A-	A-
ELA	4	744864	9	B-V	2	9811	0.6461	0.2451	0.644	0.044	0.0636	0.0028	0.0004	0.4327	-0.2313	0.4348	-0.2273	-0.2403	-0.0512	-0.0342	-0.2469	0.0604	-1.469	0.9614	-1.5391	0.9347	A-	A+	A-
ELA	4	747062	9	B-V	2	9791	0.5826	0.2067	0.5795	0.093	0.1155	0.0044	0.0009	0.4442	-0.1862	0.4464	-0.247	-0.2133	-0.0613	-0.033	0.0685	0.0586	-1.399	0.9667	-1.8791	0.9329	A+	A+	A+
ELA	4	744151	9	D	2	9717	0.4796	0.4734	0.1135	0.2549	0.1454	0.012	0.0008	0.4062	0.4098	-0.1702	-0.1312	-0.2361	-0.0847	-0.0353	0.5786	0.0575	1.271	1.0279	1.151	1.0365	A+	A-	B-
ELA	4	744226	9	D	2	9757	0.2538	0.3618	0.1823	0.1957	0.2515	0.0057	0.003	0.1871	0.0286	-0.1262	-0.102	0.1896	-0.0558	-0.0481	1.8024	0.0638	3.8511	1.1223	9.7516	1.633	A-	A-	A-
ELA	5	711327	0	A-C	3	85289	0.6332	0.1529	0.1249	0.6278	0.0859	0.0079	0.0006	0.5069	-0.2497	-0.2283	0.5097	-0.2619	-0.0788	-0.0272	-0.0982	0.0197	-5.259	0.9574	-5.1391	0.935	A+	A+	A+
ELA	5	711328	0	A-C	2	85431	0.5249	0.1754	0.1446	0.1518	0.5213	0.0063	0.0006	0.4328	-0.1367	-0.2026	-0.244	0.4357	-0.077	-0.0308	0.3118	0.0193	8.2211	1.0637	8.9711	1.1044	A-	A-	A-
ELA	5	711553	0	A-K	2	85263	0.5278	0.2004	0.5231	0.1192	0.1484	0.0082	0.0006	0.4493	-0.2089	0.452	-0.2159	-0.1819	-0.0756	-0.0269	0.2517	0.0193	5.391	1.0418	5.1311	1.0595	A+	A+	A+
ELA	5	711738	0	A-K	3	85502	0.5433	0.193	0.108	0.1529	0.54	0.0053	0.0008	0.5772	-0.2678	-0.2818	-0.2461	0.5793	-0.0845	-0.0287	0.2421	0.0194	-9.8991	0.8684	-9.8992	0.8415	A+	A+	A+
ELA	5	712262	0	A-K	2	85415	0.7042	0.1479	0.0667	0.0791	0.6991	0.0057	0.0014	0.546	-0.3353	-0.2492	-0.2387	0.5461	-0.0545	-0.0182	-0.5072	0.0206	-9.8991	0.8623	-9.8992	0.8177	A+	A+	A+
ELA	5	712264	0	A-K	3	85419	0.7042	0.0935	0.6992	0.1258	0.0744	0.006	0.0011	0.4639	-0.2749	0.4664	-0.1993	-0.2362	-0.0614	-0.0306	-0.504	0.0205	-7.5791	0.9308	-4.0491	0.9361	A+	A+	A+
ELA	5	712265	0	A-K	3	85342	0.5483	0.2035	0.1794	0.544	0.0652	0.0072	0.0008	0.5064	-0.2838	-0.1986	0.5078	-0.2286	-0.0638	-0.0229	0.3685	0.0193	-8.1491	0.9396	-4.439	0.9511	A+	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	5	712267	0	A-K	2	85549	0.4986	0.4959	0.2571	0.1244	0.1171	0.0043	0.0012	0.2857	0.2882	-0.0931	-0.1434	-0.1602	-0.0541	-0.0301	0.5284	0.0193	9.9012	1.1878	9.9013	1.3003	A-	A+	A+
ELA	5	711318	0	A-V	1	85513	0.5933	0.5898	0.1185	0.2192	0.0666	0.0052	0.0007	0.4458	0.4493	-0.2891	-0.1644	-0.2125	-0.081	-0.0284	0.0045	0.0196	2.841	1.0228	0.831	1.0102	A-	A+	A-
ELA	5	711320	0	A-V	2	85591	0.6536	0.1596	0.1037	0.6503	0.0814	0.0044	0.0007	0.4032	-0.1351	-0.2292	0.4078	-0.2517	-0.083	-0.0326	-0.3853	0.0202	7.9311	1.0727	7.9011	1.1236	A-	A-	A-
ELA	5	711741	0	A-V	2	85532	0.3608	0.3496	0.3587	0.2189	0.0671	0.0048	0.001	0.308	-0.0459	0.3107	-0.2097	-0.1351	-0.0813	-0.0336	1.057	0.0198	9.9011	1.1373	9.9013	1.348	A+	A+	A+
ELA	5	712260	0	A-V	2	85540	0.7141	0.1403	0.0451	0.7101	0.0989	0.0046	0.001	0.524	-0.2844	-0.2394	0.5258	-0.2853	-0.0598	-0.029	-0.8442	0.0216	-2.599	0.9723	-5.3891	0.8977	A+	A+	A-
ELA	5	659197	0	B-C	2	85513	0.5615	0.2085	0.5582	0.1488	0.0785	0.0052	0.0008	0.4573	-0.2306	0.4595	-0.1674	-0.258	-0.0652	-0.029	0.1851	0.0194	3.441	1.0267	3.941	1.0462	A-	A+	A+
ELA	5	659202	0	B-C	2	85556	0.5004	0.4977	0.1919	0.1147	0.1903	0.0047	0.0008	0.409	0.4106	-0.3203	-0.1138	-0.0975	-0.0563	-0.0288	0.5319	0.0193	9.2311	1.071	9.9011	1.1174	A+	A-	A-
ELA	5	659285	0	B-C	2	85574	0.6404	0.6371	0.0559	0.2219	0.0799	0.0038	0.0015	0.4257	0.4282	-0.216	-0.1951	-0.2598	-0.06	-0.029	-0.2946	0.0201	3.611	1.0316	5.0011	1.0731	A-	A+	A+
ELA	5	712118	0	B-C	2	85326	0.4127	0.1739	0.1069	0.4094	0.3017	0.0071	0.001	0.3511	-0.2245	-0.264	0.3537	-0.0004	-0.0745	-0.025	0.7538	0.0194	9.9011	1.1242	9.9012	1.2343	B-	A+	A-
ELA	5	712120	0	B-C	2	84842	0.4293	0.2524	0.4233	0.1793	0.1312	0.0126	0.0011	0.4335	-0.1411	0.4352	-0.2047	-0.1952	-0.0749	-0.0291	0.7928	0.0194	2.501	1.0193	7.8511	1.0953	A-	A-	A-
ELA	5	659203	0	B-K	3	85657	0.6779	0.0387	0.0629	0.2191	0.675	0.0032	0.0011	0.3466	-0.2427	-0.2897	-0.1023	0.3503	-0.0624	-0.0331	-0.3171	0.0201	5.571	1.0495	9.9012	1.1505	A+	A+	A+
ELA	5	659287	0	B-K	3	85633	0.7656	0.7621	0.1083	0.055	0.07	0.0039	0.0007	0.5273	0.5291	-0.3323	-0.2499	-0.2382	-0.0565	-0.0288	-1.0169	0.0223	-9.4491	0.8946	-9.8992	0.764	A-	A+	A-
ELA	5	712113	0	B-K	2	85388	0.3927	0.1777	0.1012	0.3239	0.3898	0.0063	0.0011	0.3257	-0.3015	-0.271	0.093	0.3282	-0.0741	-0.0217	0.8901	0.0195	9.9011	1.1436	9.9013	1.2566	A-	A+	A+
ELA	5	712114	0	B-K	2	85268	0.6323	0.6268	0.1601	0.0934	0.1109	0.0073	0.0015	0.5029	0.5049	-0.2179	-0.2848	-0.2368	-0.075	-0.0179	-0.2974	0.0201	-1.829	0.9841	-3.8691	0.9455	A-	A+	A+
ELA	5	659209	0	B-V	2	85666	0.6255	0.0829	0.6229	0.0582	0.2318	0.0033	0.0009	0.2835	-0.1621	0.2867	-0.2136	-0.0952	-0.0547	-0.0326	-0.2444	0.02	9.9012	1.2013	9.9013	1.3054	A-	A-	A-
ELA	5	661010	0	B-V	2	85514	0.6805	0.1399	0.1255	0.6764	0.0522	0.0053	0.0006	0.4365	-0.2168	-0.2056	0.4389	-0.2564	-0.0591	-0.0265	-0.7591	0.0213	9.0411	1.0964	9.9013	1.2742	A-	B-	B-
ELA	5	505539	0	D	2	85618	0.3587	0.253	0.357	0.1944	0.1908	0.0031	0.0017	0.21	-0.0041	0.2117	-0.1516	-0.0917	-0.0404	-0.0336	1.1284	0.0199	9.9013	1.2542	9.9015	1.4934	A-	A+	A+
ELA	5	505543	0	D	2	85589	0.2781	0.2767	0.332	0.1697	0.2165	0.0032	0.0019	0.2832	0.2842	-0.0588	-0.0794	-0.1598	-0.0411	-0.0347	1.821	0.0219	9.9012	1.2105	9.9017	1.6901	A-	A-	A+
ELA	5	581211	0	D	2	85520	0.3859	0.3419	0.1304	0.1382	0.3836	0.0047	0.0012	0.3958	-0.0608	-0.1971	-0.2682	0.3975	-0.0654	-0.0309	1.1158	0.0199	6.3811	1.0534	9.9012	1.1742	A+	A-	A-
ELA	5	581220	0	D	2	85583	0.4298	0.1446	0.3015	0.1212	0.4276	0.004	0.0011	0.476	-0.2621	-0.1656	-0.1937	0.4771	-0.0572	-0.0314	0.8712	0.0195	-1.469	0.9886	1.761	1.0215	A-	A-	A-
ELA	5	660716	0	D	2	85646	0.3917	0.0895	0.1329	0.3832	0.39	0.0027	0.0017	0.4133	-0.2392	-0.1967	-0.1306	0.4143	-0.0417	-0.033	1.0353	0.0197	5.911	1.0483	9.9012	1.1708	A-	A-	A-
ELA	5	661444	0	D	1	85596	0.3369	0.3308	0.1645	0.1645	0.3352	0.0031	0.0019	0.2723	-0.1018	-0.0968	-0.1133	0.2735	-0.0392	-0.0259	1.1922	0.02	9.9011	1.1476	9.9013	1.3114	A+	A-	A+
ELA	5	714318	0	D	2	85512	0.4185	0.1819	0.2808	0.416	0.1154	0.0046	0.0014	0.4413	-0.2459	-0.1404	0.4429	-0.1717	-0.0614	-0.038	0.9746	0.0196	1.491	1.0119	5.8311	1.0754	A-	A-	A-
ELA	5	714319	0	D	2	85629	0.5455	0.365	0.543	0.0606	0.0268	0.0036	0.001	0.4718	-0.3322	0.4733	-0.1768	-0.1832	-0.0507	-0.0321	0.4435	0.0193	0.321	1.0024	1.371	1.0153	A+	B-	A-
ELA	5	716169	0	D	2	85600	0.5232	0.5206	0.1962	0.1081	0.1701	0.0039	0.001	0.4173	0.4193	-0.1218	-0.2529	-0.2079	-0.0563	-0.0289	0.1705	0.0194	9.3111	1.0738	8.5311	1.1024	A+	A+	A+
ELA	5	744023	1	A-C	2	9556	0.272	0.5377	0.1105	0.2705	0.0758	0.0047	0.0008	0.2112	0.07	-0.2102	0.2129	-0.2232	-0.0558	-0.0233	1.3809	0.0639	6.6112	1.2155	9.6816	1.6126	A-	A-	A-
ELA	5	744025	1	A-K	2	9549	0.5324	0.5291	0.2843	0.059	0.1213	0.0041	0.0022	0.308	0.3107	-0.0843	-0.2595	-0.1564	-0.0495	-0.037	0.2213	0.0581	6.3012	1.1525	7.6013	1.2777	A+	A+	A+
ELA	5	744028	1	A-K	2	9584	0.5991	0.5976	0.0969	0.1207	0.1822	0.0019	0.0007	0.2498	0.2515	-0.0491	-0.169	-0.1338	-0.0383	-0.0157	-0.089	0.0584	8.2712	1.207	7.1513	1.278	A+	A+	A-
ELA	5	744029	1	A-K	2	9547	0.5484	0.072	0.2841	0.0925	0.5449	0.0047	0.0018	0.3299	-0.2393	-0.0707	-0.2288	0.3332	-0.076	-0.0166	0.1481	0.0581	4.3211	1.1031	5.1012	1.1823	A+	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	5	744030	1	A-K	2	9528	0.5558	0.128	0.5511	0.2564	0.056	0.0077	0.0007	0.3054	-0.1322	0.3068	-0.1158	-0.234	-0.0475	0.0018	0.163	0.0581	4.1411	1.0985	3.4411	1.1203	A+	A+	A-
ELA	5	744031	1	A-K	2	9520	0.7165	0.1511	0.0718	0.058	0.7099	0.0078	0.0015	0.3948	-0.1812	-0.237	-0.208	0.397	-0.0561	-0.015	-0.6131	0.0606	-1.239	0.9675	-1.5491	0.9296	A+	A+	A+
ELA	5	744032	1	A-V	2	9598	0.7803	0.1145	0.0701	0.7794	0.0349	0.0007	0.0004	0.2925	-0.1337	-0.2273	0.294	-0.1092	-0.0288	-0.0244	-1.0787	0.0645	-1.049	0.9673	0.341	1.0194	A+	A-	A-
ELA	5	744033	1	A-V	3	9569	0.6564	0.1512	0.6537	0.0556	0.1354	0.0031	0.001	0.3494	-0.1748	0.3527	-0.2137	-0.152	-0.0539	-0.0386	-0.3414	0.0591	0.711	1.0172	0.951	1.0379	A+	A+	A+
ELA	5	744675	1	D	2	19001	0.5369	0.1346	0.5331	0.2451	0.0802	0.006	0.001	0.3015	-0.1403	0.3051	-0.0838	-0.2297	-0.0629	-0.0324	0.1196	0.0411	8.5211	1.1467	8.5912	1.2222	A+	A-	A-
ELA	5	744684	1	D	2	9553	0.5121	0.0858	0.2687	0.5091	0.1306	0.0044	0.0015	0.3403	-0.1376	-0.1413	0.3427	-0.1943	-0.0532	-0.0298	0.187	0.0581	4.5011	1.1075	3.1711	1.1104	A+	A-	A+
ELA	5	744910	1	D	2	9549	0.6812	0.0588	0.2177	0.0403	0.677	0.0051	0.0011	0.3931	-0.2799	-0.1741	-0.2178	0.3947	-0.0584	0.004	-0.5098	0.0599	-1.459	0.9629	-1.3291	0.9427	A-	A-	A-
ELA	5	743507	2	A-C	2	9527	0.5292	0.0897	0.527	0.2579	0.1211	0.0032	0.001	0.354	-0.2415	0.3563	-0.053	-0.2499	-0.0529	-0.0348	0.2801	0.0578	3.3911	1.0774	3.8411	1.1328	A+	A+	A+
ELA	5	743508	2	A-C	2	9488	0.5629	0.2044	0.1276	0.5582	0.1014	0.0077	0.0006	0.4262	-0.1668	-0.2098	0.4268	-0.2316	-0.046	-0.0297	0.1636	0.058	-0.319	0.9925	-0.049	0.9979	A+	A-	A-
ELA	5	743501	2	A-K	1	9511	0.3181	0.3162	0.3792	0.1588	0.1399	0.0044	0.0016	0.1451	0.1471	0.185	-0.1971	-0.2365	-0.0582	-0.0054	1.4158	0.0613	7.7712	1.2264	9.4215	1.5121	A-	A+	A-
ELA	5	743502	2	A-K	2	9523	0.1868	0.0815	0.6468	0.1859	0.081	0.0041	0.0006	0.1253	-0.2938	0.1561	0.1263	-0.1484	-0.0379	-0.0172	2.2145	0.0712	2.8911	1.1207	9.902	2.0266	A+	A+	A-
ELA	5	743504	2	A-K	2	9456	0.608	0.6009	0.0667	0.1023	0.2184	0.0086	0.0031	0.4236	0.4232	-0.2717	-0.2932	-0.1114	-0.0415	-0.0135	-0.0918	0.0589	-0.299	0.9925	0.981	1.0372	A-	A+	A+
ELA	5	743497	2	A-V	2	9529	0.3985	0.1998	0.0593	0.34	0.3968	0.0024	0.0017	0.2407	-0.2206	-0.2248	0.0545	0.2418	-0.0333	-0.0297	0.8664	0.0582	9.9013	1.2508	9.9014	1.4214	A-	A-	A-
ELA	5	743499	2	A-V	2	9558	0.7959	0.1349	0.0302	0.0388	0.795	0.0008	0.0002	0.508	-0.3632	-0.221	-0.219	0.5083	-0.0224	-0.0244	-1.1151	0.0685	-4.8392	0.8311	-4.7693	0.7032	A+	B-	A-
ELA	5	743505	2	A-V	2	9549	0.9037	0.0302	0.9019	0.0403	0.0256	0.0014	0.0006	0.389	-0.2263	0.3888	-0.2193	-0.2057	-0.0327	-0.0035	-2.2571	0.094	-2.0491	0.8678	-4.0894	0.5569	A-	A+	A-
ELA	5	744676	2	D	2	18958	0.8236	0.0356	0.0458	0.0941	0.8189	0.0046	0.001	0.476	-0.2223	-0.2528	-0.2926	0.4766	-0.0473	-0.0269	-1.4181	0.052	-5.7592	0.8348	-6.5493	0.6635	A-	A-	A-
ELA	5	744685	2	D	2	9493	0.5133	0.5093	0.354	0.0711	0.0578	0.0051	0.0027	0.1469	0.1518	0.0818	-0.2265	-0.2171	-0.0581	-0.0387	0.3763	0.0576	9.9013	1.333	9.9015	1.4748	A-	A-	A+
ELA	5	744911	2	D	2	9508	0.6321	0.0765	0.6281	0.0998	0.1893	0.0044	0.0019	0.4509	-0.1826	0.4516	-0.2609	-0.2244	-0.0316	-0.0354	-0.2642	0.0599	-0.989	0.9747	-2.2291	0.9093	A+	A-	A-
ELA	5	744183	3	A-C	3	9514	0.0759	0.0937	0.44	0.3847	0.0754	0.0053	0.0008	-0.1112	-0.2718	0.1733	0.0535	-0.1096	-0.0442	-0.0247	3.3136	0.1001	1.0511	1.0798	8.4326	2.6284	A-	A-	A+
ELA	5	744176	3	A-K	2	9534	0.6613	0.6586	0.1784	0.0431	0.1157	0.003	0.001	0.2745	0.2771	-0.0637	-0.2553	-0.1623	-0.047	-0.0189	-0.3349	0.0599	4.1811	1.1121	5.2112	1.2214	A+	A-	A-
ELA	5	744177	3	A-K	2	9500	0.714	0.1267	0.0578	0.7086	0.0993	0.0067	0.0009	0.4142	-0.1687	-0.2164	0.4138	-0.2606	-0.03	-0.0334	-0.6113	0.0622	-1.8791	0.9458	-1.0991	0.9481	A+	A+	A+
ELA	5	744179	3	A-K	2	9495	0.5699	0.5652	0.1457	0.2206	0.0603	0.0075	0.0006	0.3099	0.3114	-0.1596	-0.0642	-0.2821	-0.0418	-0.0259	0.0979	0.0577	4.4711	1.1036	3.8511	1.127	A+	A+	A+
ELA	5	744181	3	A-K	2	9506	0.3373	0.5247	0.0523	0.0811	0.3349	0.0045	0.0025	0.0955	0.1664	-0.2718	-0.2362	0.098	-0.0557	-0.0131	1.3097	0.06	9.9013	1.3038	9.9016	1.5823	A-	A-	A-
ELA	5	744173	3	A-V	1	9539	0.632	0.0736	0.6298	0.0651	0.2279	0.0029	0.0006	0.3096	-0.2686	0.311	-0.2385	-0.0447	-0.0366	-0.0178	-0.1469	0.0587	4.7311	1.1185	5.0912	1.1925	A+	A+	A+
ELA	5	744174	3	A-V	2	9552	0.7613	0.0871	0.1002	0.7596	0.0509	0.002	0.0002	0.347	-0.2674	-0.1543	0.3485	-0.1153	-0.0343	-0.0208	-0.9074	0.0655	0.461	1.015	3.1112	1.1862	A+	A+	A-
ELA	5	744175	3	A-V	2	9558	0.5099	0.275	0.5091	0.1118	0.1025	0.0014	0.0002	0.3065	-0.0803	0.3074	-0.2104	-0.1649	-0.0306	-0.0282	0.3672	0.0571	3.5811	1.0785	3.8111	1.1175	A+	A-	A-
ELA	5	744677	3	D	2	9520	0.7926	0.024	0.0411	0.7883	0.1411	0.0051	0.0004	0.3945	-0.1758	-0.2146	0.396	-0.2544	-0.05	-0.007	-1.1569	0.069	-1.269	0.9519	-1.0391	0.9311	A-	A-	A-
ELA	5	744686	3	D	2	9518	0.3073	0.0672	0.2044	0.4171	0.3055	0.0038	0.002	0.1185	-0.1352	0.0168	-0.0514	0.1198	-0.0216	-0.0324	1.4191	0.0609	7.7912	1.2219	9.9015	1.5364	A-	A+	A+
ELA	5	744912	3	D	1	9496	0.5107	0.1555	0.1295	0.5066	0.2003	0.007	0.001	0.3418	-0.167	-0.1522	0.3406	-0.1426	-0.0138	-0.0146	0.384	0.0571	1.351	1.0289	1.191	1.0356	A+	A-	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	5	744663	4	A-C	2	9530	0.7364	0.1223	0.7297	0.0625	0.0764	0.0071	0.002	0.5196	-0.2515	0.5163	-0.2814	-0.282	-0.0367	-0.0178	-0.7937	0.0654	-3.3491	0.8942	-2.5091	0.8502	A+	A-	A+
ELA	5	744665	4	A-K	2	9570	0.6305	0.1859	0.1297	0.6274	0.0521	0.0034	0.0015	0.4319	-0.1584	-0.285	0.4331	-0.2178	-0.0361	-0.04	-0.1247	0.0598	0.231	1.0058	-0.159	0.9925	A+	A+	A-
ELA	5	744667	4	A-K	2	9480	0.5528	0.0582	0.545	0.1889	0.1936	0.012	0.0023	0.2626	-0.2345	0.2615	-0.1234	-0.0606	-0.0257	-0.0049	0.2497	0.0584	7.1812	1.1786	6.7413	1.2637	A-	A-	A-
ELA	5	744669	4	A-K	2	9536	0.6311	0.1403	0.1575	0.6258	0.068	0.0076	0.0008	0.2487	-0.0257	-0.1281	0.251	-0.2449	-0.0396	-0.0268	-0.1148	0.0598	7.5612	1.206	6.6913	1.3102	A+	A-	A-
ELA	5	744670	4	A-K	2	9585	0.6599	0.6577	0.1076	0.1584	0.073	0.0028	0.0005	0.3991	0.4015	-0.2353	-0.1412	-0.2403	-0.0488	-0.0405	-0.3675	0.0614	0.271	1.0072	-0.089	0.995	A+	A+	A+
ELA	5	744672	4	A-V	2	9570	0.6688	0.6655	0.1755	0.0776	0.0765	0.003	0.0019	0.4371	0.4382	-0.2392	-0.2223	-0.199	-0.0329	-0.0361	-0.4032	0.0616	-1.8191	0.9495	-2.6091	0.8751	A-	A-	A-
ELA	5	744673	4	A-V	2	9594	0.6484	0.0702	0.0557	0.2248	0.6469	0.0022	0.0002	0.4337	-0.2298	-0.2352	-0.223	0.4338	-0.0241	-0.0323	-0.3209	0.061	-1.329	0.9639	-0.719	0.9655	A+	A-	A-
ELA	5	744674	4	A-V	2	9586	0.2462	0.0512	0.5672	0.133	0.2454	0.0025	0.0007	0.23	-0.2544	-0.0714	-0.0155	0.2308	-0.0317	-0.0374	1.8758	0.0654	5.6512	1.1932	7.2615	1.5076	A-	A-	A-
ELA	5	744678	4	D	2	9518	0.5056	0.1094	0.1983	0.5004	0.1817	0.0094	0.0009	0.4615	-0.1495	-0.2562	0.4614	-0.1973	-0.0552	-0.0166	0.4354	0.0581	-3.9691	0.9112	-2.9091	0.9021	A-	A-	A-
ELA	5	744903	4	D	1	9560	0.6795	0.1368	0.6755	0.0962	0.0856	0.0042	0.0018	0.4304	-0.1844	0.4337	-0.2163	-0.2515	-0.0568	-0.0459	-0.5309	0.0627	-0.059	0.998	0.331	1.0165	A+	A+	A-
ELA	5	744913	4	D	2	9568	0.5416	0.0791	0.277	0.0999	0.5388	0.0043	0.0008	0.4733	-0.2679	-0.1723	-0.275	0.4756	-0.061	-0.0411	0.2525	0.0584	-3.7491	0.9142	-3.1591	0.8897	A-	A-	A-
ELA	5	744098	5	A-C	2	9394	0.6489	0.1399	0.1203	0.6401	0.0861	0.0125	0.0011	0.5187	-0.2464	-0.2382	0.518	-0.2789	-0.0582	-0.0286	-0.2892	0.0606	-5.1491	0.8681	-4.0092	0.8278	A+	A-	A-
ELA	5	744099	5	A-C	2	9495	0.7328	0.0603	0.1135	0.7307	0.0926	0.0019	0.0011	0.5198	-0.2912	-0.2841	0.5206	-0.2376	-0.0448	-0.0227	-0.7485	0.0644	-5.6792	0.8298	-5.6293	0.7038	A+	A+	A-
ELA	5	744035	5	A-K	2	9476	0.6686	0.0763	0.1069	0.1465	0.6653	0.0025	0.0024	0.5267	-0.2739	-0.3195	-0.2085	0.5276	-0.0319	-0.0442	-0.417	0.0615	-7.0292	0.8157	-6.2693	0.724	A-	A-	A-
ELA	5	744037	5	A-K	2	9412	0.5059	0.0917	0.5001	0.2768	0.1198	0.011	0.0006	0.3397	-0.2508	0.3386	-0.0777	-0.1815	-0.0305	-0.0023	0.4969	0.0581	4.1711	1.0969	3.6811	1.1404	A+	A-	A-
ELA	5	744100	5	A-K	2	9508	0.791	0.138	0.7898	0.0423	0.0284	0.0015	0.0001	0.3094	-0.1239	0.3116	-0.2421	-0.2025	-0.0466	-0.0114	-1.1013	0.0687	3.0911	1.1179	4.0913	1.3219	A+	A+	A+
ELA	5	744040	5	A-V	2	9516	0.9471	0.9464	0.023	0.0143	0.0155	0.0005	0.0002	0.2815	0.282	-0.1892	-0.1392	-0.1458	-0.0108	-0.0241	-2.8684	0.1161	-0.6991	0.9353	-2.6294	0.597	A-	B-	B-
ELA	5	744041	5	A-V	2	9423	0.7994	0.0454	0.0823	0.0708	0.791	0.0076	0.0029	0.4654	-0.2493	-0.2261	-0.2677	0.4663	-0.0481	-0.0501	-1.178	0.0698	-3.5791	0.8689	-3.4792	0.7592	A-	A-	A-
ELA	5	744102	5	A-V	2	9487	0.7581	0.7552	0.0338	0.0468	0.1603	0.0029	0.0008	0.2838	0.2887	-0.2402	-0.2606	-0.0581	-0.0659	-0.0253	-0.9676	0.0669	0.701	1.024	4.8514	1.3575	A-	A+	A+
ELA	5	744679	5	D	2	9437	0.5309	0.1297	0.1454	0.5261	0.1898	0.0071	0.0019	0.3515	-0.1071	-0.1116	0.3545	-0.2424	-0.0564	-0.0436	0.3494	0.0582	4.0011	1.094	4.6312	1.1794	A+	A-	A-
ELA	5	744904	5	D	2	9450	0.5922	0.5876	0.2327	0.1093	0.0627	0.005	0.0026	0.3695	0.3707	-0.1362	-0.2058	-0.2328	-0.0531	-0.0105	-0.0335	0.0592	2.7311	1.0689	3.1711	1.1334	A+	A-	A+
ELA	5	744914	5	D	1	9462	0.757	0.1025	0.0742	0.7522	0.0647	0.0054	0.0011	0.4251	-0.3089	-0.1512	0.425	-0.1903	-0.0394	-0.0152	-0.9676	0.0669	-0.749	0.9736	-0.679	0.9539	A+	A-	A-
ELA	5	744185	6	B-C	1	9539	0.3669	0.1843	0.3659	0.218	0.2291	0.0023	0.0004	0.3479	-0.0653	0.3483	-0.1381	-0.1992	-0.0259	-0.0232	1.101	0.0594	0.931	1.0228	2.1711	1.0897	A-	A-	A-
ELA	5	744195	6	B-C	2	9513	0.4397	0.4373	0.1382	0.1376	0.2814	0.0048	0.0006	0.2252	0.2263	-0.1967	-0.0707	-0.0382	-0.0286	-0.0336	0.7921	0.0583	8.2012	1.2017	7.9713	1.3128	A-	A-	A-
ELA	5	744196	6	B-C	2	9509	0.4004	0.1271	0.2558	0.398	0.2132	0.0051	0.0007	0.3048	-0.124	-0.086	0.306	-0.1648	-0.0442	-0.0109	1.0078	0.059	3.1911	1.0784	4.6912	1.1924	A-	A+	A+
ELA	5	744189	6	B-K	2	9529	0.7742	0.1264	0.7712	0.0459	0.0527	0.003	0.0007	0.5206	-0.3508	0.5234	-0.202	-0.254	-0.0575	-0.0408	-1.0589	0.068	-4.3691	0.8505	-4.6193	0.7198	A+	A+	A+
ELA	5	744192	6	B-K	2	9433	0.5366	0.5292	0.1043	0.2235	0.1291	0.0102	0.0036	0.3424	0.3419	-0.2981	-0.1013	-0.0983	-0.0322	-0.0189	0.2944	0.0581	3.1611	1.0745	5.5112	1.206	A-	A+	A+
ELA	5	744193	6	B-K	2	9514	0.5653	0.1751	0.1193	0.138	0.5623	0.0033	0.002	0.4945	-0.1625	-0.2627	-0.2748	0.4959	-0.0499	-0.0324	0.1653	0.0584	-4.6091	0.8955	-3.8491	0.8659	A+	A+	A+
ELA	5	744186	6	B-V	2	9540	0.7652	0.0536	0.0628	0.7632	0.1177	0.002	0.0006	0.3904	-0.1834	-0.2671	0.391	-0.1813	-0.0298	-0.0138	-0.932	0.0663	-0.809	0.9723	0.271	1.0159	A-	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	5	744187	6	B-V	2	9551	0.8475	0.0498	0.0829	0.0197	0.8462	0.0008	0.0006	0.4241	-0.2732	-0.2426	-0.1843	0.4261	-0.0318	-0.0361	-1.6051	0.0772	-3.3391	0.8506	-2.0292	0.8233	A+	A-	B-
ELA	5	716625	6	D	2	9500	0.3607	0.1714	0.3583	0.2286	0.2349	0.0056	0.0012	0.2033	-0.1207	0.2049	-0.0905	-0.0258	-0.0301	-0.0463	1.2094	0.06	8.5212	1.2317	9.1014	1.4405	A-	A-	A-
ELA	5	744680	6	D	2	9472	0.5231	0.1739	0.518	0.1518	0.1466	0.0091	0.0006	0.3388	-0.1521	0.3414	-0.1419	-0.1575	-0.0614	-0.0179	0.3431	0.0581	5.8511	1.1399	5.5412	1.2049	A+	A-	A-
ELA	5	744905	6	D	2	9511	0.4982	0.088	0.2886	0.1224	0.4953	0.0039	0.0018	0.3726	-0.2211	-0.0748	-0.2631	0.3743	-0.0474	-0.0336	0.4621	0.058	1.871	1.0429	2.6011	1.0915	A-	A-	A-
ELA	5	743487	7	B-C	2	9516	0.3643	0.5291	0.0546	0.3631	0.0499	0.0021	0.0013	0.3581	-0.2035	-0.0623	0.3583	-0.2527	-0.0194	-0.019	1.0782	0.0596	2.5711	1.0645	3.3511	1.1418	A+	A+	A+
ELA	5	743495	7	B-C	1	9521	0.5143	0.5129	0.1406	0.2034	0.1403	0.0021	0.0007	0.2688	0.27	-0.1713	-0.1234	-0.0682	-0.0355	-0.0161	0.3674	0.0584	7.4612	1.1868	7.4013	1.2729	A+	A+	A-
ELA	5	743490	7	B-K	2	9480	0.6637	0.0765	0.1296	0.1279	0.659	0.0059	0.0013	0.4092	-0.2279	-0.1763	-0.2126	0.4078	-0.0228	-0.024	-0.3976	0.0614	1.001	1.0279	1.1911	1.0549	A+	A+	A+
ELA	5	743491	7	B-K	2	9521	0.3287	0.1482	0.1018	0.4194	0.3278	0.0021	0.0007	0.3576	-0.2941	-0.1863	-0.0094	0.3585	-0.038	-0.039	1.3301	0.061	1.591	1.0423	5.4613	1.2756	A+	A-	A+
ELA	5	743492	7	B-K	2	9450	0.2898	0.2965	0.2992	0.2869	0.1071	0.0091	0.0012	0.0473	-0.1607	0.2721	0.0505	-0.2211	-0.0501	-0.027	1.6114	0.0632	9.9014	1.3556	9.9018	1.752	A+	A+	A+
ELA	5	743493	7	B-K	1	9504	0.7149	0.7116	0.1528	0.0812	0.0499	0.0031	0.0015	0.493	0.4935	-0.2901	-0.2485	-0.2216	-0.0408	-0.0211	-0.7077	0.064	-3.0691	0.9074	-3.8092	0.8039	A-	A+	A+
ELA	5	743488	7	B-V	2	9536	0.8171	0.0339	0.8161	0.0424	0.1063	0.001	0.0002	0.4626	-0.2129	0.4624	-0.1857	-0.3323	-0.0121	-0.0246	-1.4203	0.0734	-3.5691	0.8573	-4.0893	0.694	A-	A-	A-
ELA	5	743489	7	B-V	2	9514	0.7477	0.0801	0.7451	0.0816	0.0897	0.0026	0.0009	0.4837	-0.307	0.4859	-0.2679	-0.1798	-0.0545	-0.0306	-0.9069	0.0661	-4.8992	0.8443	-4.6393	0.7383	A-	A-	A-
ELA	5	716626	7	D	1	9491	0.7381	0.0304	0.2007	0.7337	0.0293	0.005	0.0009	0.4217	-0.213	-0.2828	0.4241	-0.1969	-0.0489	-0.0326	-0.8799	0.0658	-2.1691	0.9295	-1.7191	0.8976	A+	A+	A-
ELA	5	744681	7	D	2	9472	0.6564	0.0746	0.6511	0.1002	0.1661	0.007	0.0009	0.4557	-0.2122	0.4561	-0.1986	-0.2634	-0.038	-0.0264	-0.3762	0.0613	-1.9991	0.9452	-2.2691	0.9001	A-	B-	B-
ELA	5	744907	7	D	2	9485	0.4574	0.4543	0.1619	0.2289	0.1482	0.004	0.0026	0.2607	0.2643	-0.1572	-0.018	-0.1692	-0.0609	-0.043	0.6696	0.0584	9.9013	1.2655	9.9014	1.4061	A-	A-	A-
ELA	5	743460	8	B-C	3	9473	0.3955	0.2834	0.1226	0.195	0.3933	0.004	0.0016	0.366	-0.2164	-0.0973	-0.1159	0.3674	-0.0462	-0.0304	0.963	0.0587	3.9011	1.0946	5.0012	1.1922	A-	A-	A-
ELA	5	743462	8	B-C	2	9472	0.4587	0.4561	0.1372	0.1992	0.2018	0.0046	0.001	0.3466	0.3485	-0.2365	-0.1076	-0.1111	-0.0588	-0.0201	0.6014	0.0578	1.441	1.0326	1.9011	1.0625	A-	A-	A+
ELA	5	743455	8	B-K	2	9431	0.509	0.2202	0.0864	0.5039	0.1795	0.0089	0.001	0.39	-0.1908	-0.2735	0.3899	-0.0916	-0.0398	-0.0041	0.419	0.0578	1.851	1.0421	1.9611	1.0641	A+	A-	A+
ELA	5	743457	8	B-K	2	9076	0.6138	0.5848	0.1061	0.1684	0.0934	0.0085	0.0387	0.4443	0.4291	-0.1863	-0.1766	-0.278	-0.0333	-0.0207	-0.0103	0.0587	-1.699	0.9595	-0.229	0.9914	A-	A+	A+
ELA	5	743458	8	B-K	2	9479	0.2913	0.1934	0.1703	0.2898	0.3416	0.0044	0.0005	0.0467	-0.0791	-0.1048	0.0486	0.1095	-0.0428	-0.0219	1.5119	0.0621	9.9014	1.3652	9.9018	1.8243	A+	A-	A+
ELA	5	743459	8	B-K	2	9478	0.2325	0.1676	0.1831	0.4129	0.2314	0.0044	0.0006	0.0469	-0.0482	-0.1808	0.1447	0.0489	-0.057	-0.0073	1.8722	0.0659	8.1813	1.2963	9.9018	1.7797	A+	A-	A+
ELA	5	743453	8	B-V	1	9502	0.5277	0.0445	0.5263	0.2102	0.2165	0.002	0.0005	0.2971	-0.2337	0.2981	-0.1204	-0.1206	-0.0351	-0.0172	0.2582	0.058	6.2912	1.1509	5.8312	1.2046	A+	A-	A-
ELA	5	743509	8	B-V	2	9512	0.7916	0.0692	0.7905	0.0673	0.0716	0.0013	0.0002	0.4816	-0.2812	0.4823	-0.2456	-0.2406	-0.0283	-0.0256	-1.1994	0.0698	-5.3192	0.8098	-5.2393	0.6654	A-	A-	A-
ELA	5	744682	8	D	2	9457	0.4668	0.2945	0.123	0.4635	0.1118	0.0069	0.0003	0.3202	-0.1461	-0.1101	0.3224	-0.1678	-0.0567	-0.0228	0.6254	0.0578	5.2511	1.123	5.1812	1.1777	A+	A-	A-
ELA	5	744908	8	D	2	9465	0.6445	0.1736	0.1007	0.0789	0.6404	0.0036	0.0028	0.5252	-0.2368	-0.2842	-0.2682	0.5275	-0.0433	-0.0567	-0.3049	0.0603	-6.2092	0.8459	-5.8792	0.7705	A+	A-	A-
ELA	5	744043	9	B-C	3	9430	0.3392	0.3713	0.1618	0.3368	0.123	0.0062	0.0008	0.2375	-0.0181	-0.1347	0.2391	-0.1529	-0.0535	-0.0089	1.2766	0.0602	5.2611	1.1408	6.9013	1.3159	A+	A-	A-
ELA	5	744046	9	B-C	2	9454	0.7926	0.789	0.0401	0.1287	0.0377	0.004	0.0005	0.4229	0.4271	-0.2325	-0.2402	-0.2275	-0.0673	-0.0276	-1.1396	0.0688	-0.049	0.9977	-1.1491	0.9197	A-	A-	A-
ELA	5	744096	9	B-C	2	9365	0.3033	0.299	0.4309	0.1292	0.127	0.0121	0.0018	0.1116	0.1123	0.1043	-0.2152	-0.0839	-0.0181	-0.0228	1.5262	0.0621	6.8612	1.2071	9.7515	1.5488	A-	A-	A-
ELA	5	744044	9	B-K	2	9475	0.527	0.3844	0.0455	0.042	0.5257	0.0019	0.0004	0.2134	-0.0349	-0.242	-0.1891	0.2146	-0.0263	-0.0334	0.2912	0.0577	9.8012	1.2363	8.7613	1.3141	A+	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	5	744045	9	B-K	2	9468	0.389	0.2819	0.1477	0.3878	0.1795	0.0023	0.0007	0.1747	-0.1023	-0.0655	0.1754	-0.0382	-0.0225	-0.0165	1.0743	0.059	9.9013	1.3039	9.9015	1.4801	A+	A+	A+
ELA	5	744047	9	B-K	2	9446	0.3722	0.1066	0.3702	0.3546	0.1632	0.0049	0.0004	0.1455	-0.2693	0.1481	0.1415	-0.1396	-0.0587	-0.021	1.1638	0.0595	9.9013	1.2966	9.9015	1.5005	A-	A+	A+
ELA	5	744097	9	B-K	2	9457	0.6959	0.693	0.0857	0.1227	0.0945	0.0036	0.0006	0.3664	0.3686	-0.2329	-0.198	-0.1249	-0.0493	-0.0152	-0.522	0.0617	0.711	1.0197	-0.089	0.995	A-	A+	A+
ELA	5	744050	9	B-V	2	9405	0.6508	0.191	0.1164	0.0384	0.6445	0.0092	0.0005	0.4477	-0.3193	-0.1147	-0.2394	0.4499	-0.0684	-0.0216	-0.2688	0.0598	-1.089	0.9721	-0.439	0.9812	A-	A-	A-
ELA	5	744683	9	D	2	9423	0.7459	0.7401	0.0699	0.1553	0.0269	0.0075	0.0003	0.2718	0.2753	-0.1986	-0.1184	-0.139	-0.05	-0.0241	-0.8619	0.0651	3.3211	1.1114	4.5213	1.2951	A+	A-	A+
ELA	5	744909	9	D	2	9455	0.5244	0.1211	0.5221	0.1843	0.1682	0.0036	0.0008	0.4454	-0.1944	0.4466	-0.194	-0.2162	-0.0509	-0.0188	0.3364	0.0576	-1.699	0.9623	-1.7391	0.9445	A+	A-	A-
ELA	6	662369	0	A-C	3	77682	0.4765	0.2202	0.1234	0.1761	0.4731	0.0065	0.0008	0.3499	-0.0226	-0.2627	-0.1945	0.3526	-0.0681	-0.0256	0.9731	0.0191	9.9011	1.0972	9.9012	1.1585	A+	A+	A+
ELA	6	662371	0	A-C	3	77891	0.5604	0.0851	0.1122	0.5579	0.2402	0.0036	0.001	0.3503	-0.2932	-0.2295	0.3527	-0.0387	-0.061	-0.024	0.5179	0.019	9.9011	1.0881	9.9012	1.1664	A+	A+	A+
ELA	6	712927	0	A-C	2	77502	0.5001	0.1304	0.4953	0.1628	0.202	0.009	0.0005	0.4273	-0.2241	0.4309	-0.2386	-0.1061	-0.0919	-0.0242	0.4406	0.019	6.671	1.0482	5.3211	1.0553	A+	A+	A+
ELA	6	712935	0	A-C	3	77575	0.5359	0.5312	0.1377	0.2295	0.0929	0.0078	0.0009	0.4445	0.4483	-0.1973	-0.194	-0.2247	-0.0918	-0.0304	0.1128	0.0195	9.9011	1.1064	9.9012	1.155	A+	A+	A+
ELA	6	712936	0	A-C	2	77640	0.4251	0.1836	0.2753	0.1115	0.4218	0.0064	0.0014	0.3468	-0.1914	-0.0846	-0.1662	0.3509	-0.0963	-0.037	1.025	0.0191	9.9011	1.1012	9.9012	1.1718	A+	A+	A+
ELA	6	712937	0	A-C	2	77307	0.5217	0.1458	0.2193	0.1075	0.5154	0.0105	0.0015	0.4862	-0.2739	-0.1539	-0.2382	0.4893	-0.0916	-0.0275	0.3046	0.0192	-0.999	0.9927	-2.009	0.9785	A+	A+	A+
ELA	6	662376	0	A-K	2	77711	0.5735	0.0796	0.1518	0.1921	0.5696	0.0047	0.0022	0.4103	-0.2817	-0.2279	-0.1033	0.4127	-0.0689	-0.019	0.6369	0.019	2.191	1.0153	5.2411	1.0522	A+	A+	A+
ELA	6	712929	0	A-K	2	77485	0.337	0.3685	0.1627	0.3337	0.1253	0.0083	0.0015	0.3139	0.055	-0.2568	0.317	-0.2174	-0.0925	-0.0229	1.3497	0.0195	7.9411	1.0638	9.9012	1.1671	A-	A-	A-
ELA	6	712932	0	A-K	3	77561	0.4309	0.2542	0.4271	0.1602	0.1497	0.008	0.0008	0.3984	-0.056	0.4016	-0.2469	-0.2098	-0.092	-0.0238	0.7783	0.019	7.3611	1.052	9.4611	1.0954	A+	A+	A+
ELA	6	662383	0	A-V	3	77929	0.4583	0.1116	0.4564	0.3601	0.0678	0.0032	0.0009	0.3704	-0.1645	0.3724	-0.155	-0.2174	-0.0652	-0.0329	0.9082	0.019	9.9011	1.0717	9.9011	1.1355	A-	A+	A+
ELA	6	663737	0	A-V	2	77861	0.8595	0.8552	0.0664	0.0401	0.0333	0.004	0.001	0.4762	0.4779	-0.293	-0.2553	-0.227	-0.0555	-0.0287	-1.2526	0.025	-9.8992	0.7558	-9.8994	0.561	A+	A-	A-
ELA	6	712928	0	A-V	2	77783	0.6045	0.1726	0.1306	0.6009	0.0899	0.0053	0.0007	0.5282	-0.2299	-0.3012	0.5309	-0.2267	-0.0857	-0.0211	-0.0618	0.0198	-5.319	0.9565	-5.8691	0.9251	A+	A-	A-
ELA	6	710771	0	B-C	2	77555	0.4592	0.19	0.199	0.147	0.4551	0.0082	0.0007	0.5015	-0.2663	-0.1704	-0.2011	0.5027	-0.0647	-0.0288	0.9721	0.0191	-6.849	0.9522	-0.959	0.9902	A-	A-	A-
ELA	6	710782	0	B-C	2	77803	0.4433	0.1581	0.157	0.4408	0.2384	0.0049	0.0008	0.4001	-0.1737	-0.2452	0.4013	-0.0995	-0.0496	-0.0279	0.9559	0.019	8.2411	1.0595	9.9011	1.1138	A-	A+	A+
ELA	6	711234	0	B-C	2	77758	0.5387	0.5353	0.1432	0.2227	0.0925	0.0056	0.0007	0.4777	0.4807	-0.212	-0.1925	-0.2696	-0.0886	-0.0259	0.2842	0.0192	-1.989	0.9854	-2.199	0.9763	A-	A-	A+
ELA	6	711235	0	B-C	2	77591	0.7209	0.0623	0.7148	0.0981	0.1163	0.0079	0.0005	0.5072	-0.2867	0.5118	-0.2637	-0.2325	-0.0941	-0.0206	-0.6724	0.0218	-2.189	0.9758	-5.2491	0.9027	A-	A-	A-
ELA	6	711315	0	B-C	3	77841	0.4986	0.1076	0.1592	0.2319	0.496	0.0046	0.0007	0.3707	-0.224	-0.2522	-0.0457	0.3734	-0.0768	-0.0186	0.5449	0.019	9.9011	1.0869	9.9012	1.1622	A-	A+	A+
ELA	6	710775	0	B-K	2	77703	0.3787	0.1025	0.1919	0.3226	0.3761	0.0062	0.0008	0.3087	-0.2136	-0.1882	-0.014	0.3104	-0.0536	-0.026	1.3945	0.0196	9.9011	1.1349	9.9012	1.2321	A+	A+	A+
ELA	6	711237	0	B-K	2	77618	0.6667	0.1234	0.1212	0.6613	0.0859	0.0072	0.0009	0.5437	-0.2525	-0.267	0.5478	-0.2853	-0.0968	-0.031	-0.1696	0.0201	-9.8991	0.8851	-9.8992	0.8096	A-	A+	A+
ELA	6	711239	0	B-K	3	77816	0.4705	0.195	0.4679	0.227	0.1046	0.0044	0.0011	0.3652	-0.1483	0.3681	-0.1523	-0.1792	-0.0841	-0.0211	0.7307	0.0189	9.9011	1.0716	9.9011	1.1076	A+	A+	A+
ELA	6	711241	0	B-K	2	77747	0.6478	0.1835	0.0702	0.0962	0.6437	0.0058	0.0006	0.5213	-0.2428	-0.2827	-0.2644	0.5245	-0.0863	-0.019	-0.1284	0.02	-6.1591	0.9483	-5.8191	0.9228	A+	A+	A+
ELA	6	710772	0	B-V	2	77807	0.7478	0.7435	0.082	0.1027	0.0661	0.0046	0.001	0.4864	0.4886	-0.2668	-0.2296	-0.2637	-0.0567	-0.0342	-0.6506	0.0217	-7.9491	0.9151	-9.8992	0.8243	A-	A-	A-
ELA	6	710773	0	B-V	2	77805	0.4912	0.2344	0.4884	0.1279	0.1435	0.0045	0.0012	0.3987	-0.1446	0.4007	-0.2165	-0.1764	-0.0559	-0.0347	0.6789	0.0189	5.021	1.0353	5.5611	1.0553	A-	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	6	584209	0	D	2	77956	0.5014	0.095	0.4995	0.1653	0.2364	0.0025	0.0013	0.4169	-0.1858	0.4185	-0.2205	-0.1632	-0.0423	-0.0392	0.5621	0.019	4.821	1.0341	5.1311	1.0516	A+	A-	A-
ELA	6	584210	0	D	2	77891	0.4117	0.2108	0.1856	0.4098	0.1892	0.003	0.0016	0.2657	-0.1002	-0.1552	0.2676	-0.0679	-0.0412	-0.0386	1.2184	0.0193	9.9012	1.2009	9.9013	1.3265	A-	A-	A-
ELA	6	584211	0	D	1	77815	0.3056	0.3824	0.3039	0.1858	0.1224	0.0045	0.0011	0.2691	-0.0249	0.271	-0.1503	-0.1494	-0.0598	-0.0335	2.0407	0.0216	9.9012	1.2162	9.9016	1.5768	A+	A-	A-
ELA	6	629746	0	D	2	77778	0.4614	0.3297	0.1017	0.1039	0.4587	0.0036	0.0024	0.4028	-0.0743	-0.2879	-0.2427	0.4054	-0.0559	-0.0545	0.9627	0.019	3.951	1.0282	5.7911	1.0599	A+	A+	A+
ELA	6	663365	0	D	3	77854	0.4462	0.4439	0.175	0.1882	0.1878	0.004	0.0011	0.354	0.3561	-0.0904	-0.1249	-0.228	-0.0562	-0.0363	1.1258	0.0192	9.9011	1.1107	9.9012	1.2046	A-	A-	A-
ELA	6	663367	0	D	3	77883	0.5307	0.1072	0.3151	0.5282	0.0449	0.002	0.0027	0.3195	-0.2115	-0.1027	0.3223	-0.209	-0.0372	-0.0543	0.5795	0.019	9.9011	1.1175	9.9012	1.185	A+	A+	A+
ELA	6	663368	0	D	3	77871	0.4833	0.3516	0.1151	0.4809	0.0476	0.0039	0.001	0.3444	-0.1958	-0.1092	0.3465	-0.1898	-0.056	-0.0298	0.8797	0.019	9.9011	1.0983	9.9012	1.1555	A-	A+	A+
ELA	6	716052	0	D	2	77873	0.8294	0.0759	0.0594	0.8254	0.0345	0.0038	0.0011	0.4509	-0.2905	-0.2337	0.4538	-0.195	-0.057	-0.0312	-1.0376	0.0236	-9.8992	0.7929	-9.8993	0.6854	A+	A-	A-
ELA	6	716633	0	D	2	77959	0.5821	0.58	0.0729	0.2222	0.1212	0.0018	0.0019	0.3565	0.3586	-0.2218	-0.1522	-0.1613	-0.0397	-0.0408	0.2889	0.0192	9.9011	1.0754	9.0411	1.1012	A+	A+	A-
ELA	6	744628	1	A-C	2	8712	0.687	0.0805	0.0842	0.6843	0.1472	0.003	0.0009	0.3769	-0.21	-0.2474	0.3781	-0.1333	-0.0286	-0.0365	-0.2205	0.0599	-2.5591	0.936	-0.659	0.9724	A+	A-	A+
ELA	6	744630	1	A-C	2	8724	0.4264	0.0811	0.1244	0.3667	0.4253	0.0017	0.0008	0.3262	-0.2376	-0.2216	-0.0444	0.3271	-0.0231	-0.0495	1.0161	0.0582	2.5611	1.0597	3.5611	1.1251	A+	A-	A-
ELA	6	744631	1	A-C	2	8731	0.7961	0.7948	0.0753	0.0972	0.031	0.0008	0.0009	0.4738	0.4748	-0.2713	-0.2856	-0.1951	-0.0118	-0.0464	-0.6406	0.0635	-8.4792	0.7633	-8.0294	0.6261	A+	A-	A-
ELA	6	744632	1	A-C	2	8707	0.735	0.0697	0.7318	0.1116	0.0824	0.0033	0.0011	0.4547	-0.2505	0.4595	-0.2108	-0.2456	-0.0685	-0.0573	-0.3842	0.0611	-5.8892	0.8481	-5.7492	0.7578	A-	A-	A-
ELA	6	744633	1	A-K	2	8647	0.6053	0.0494	0.5984	0.3022	0.0386	0.0104	0.0009	0.3659	-0.2105	0.366	-0.1899	-0.2167	-0.0336	-0.048	0.1733	0.0579	-0.509	0.9882	-0.519	0.9822	A+	A-	A+
ELA	6	744636	1	A-K	2	8664	0.3303	0.0662	0.2278	0.3272	0.3694	0.0082	0.0011	0.1489	-0.2551	-0.1306	0.1518	0.1102	-0.0576	-0.0296	1.3847	0.0601	8.4912	1.2356	9.8115	1.4597	A-	A-	A-
ELA	6	744637	1	A-K	2	8693	0.6886	0.6844	0.1109	0.0649	0.1337	0.0047	0.0014	0.3846	0.3872	-0.1713	-0.2319	-0.1885	-0.0429	-0.0525	-0.1536	0.0594	-2.8091	0.9314	-1.199	0.9524	A+	A+	A-
ELA	6	744717	1	A-V	2	8694	0.8192	0.0613	0.0322	0.0862	0.8143	0.004	0.0019	0.3968	-0.2569	-0.2255	-0.1764	0.3984	-0.0328	-0.0434	-0.8415	0.0658	-6.2092	0.8058	-4.6793	0.7401	A+	A-	A-
ELA	6	745247	1	D	2	17272	0.5388	0.2574	0.5346	0.1228	0.0774	0.0071	0.0006	0.3224	-0.1699	0.3253	-0.1087	-0.1749	-0.0581	-0.0257	0.3912	0.0405	5.2011	1.0812	5.0211	1.114	A-	A-	A-
ELA	6	745256	1	D	1	8685	0.6996	0.6947	0.0944	0.1237	0.0802	0.0047	0.0023	0.4216	0.425	-0.2377	-0.1999	-0.201	-0.054	-0.0449	-0.289	0.0603	-1.519	0.9605	-1.4991	0.9359	A-	A+	A-
ELA	6	745392	1	D	2	8677	0.4969	0.1757	0.1802	0.493	0.1432	0.0067	0.0011	0.2707	-0.1824	-0.053	0.2749	-0.1163	-0.0628	-0.0513	0.6205	0.0573	5.7611	1.1306	5.1212	1.1646	A-	A-	A-
ELA	6	745211	2	A-C	2	8664	0.5613	0.0828	0.1803	0.1742	0.5595	0.0026	0.0005	0.3425	-0.2593	-0.1066	-0.1472	0.3436	-0.0414	-0.009	0.3809	0.057	2.5811	1.0551	2.9911	1.0901	A+	A+	A+
ELA	6	745220	2	A-C	3	8516	0.4427	0.2107	0.4338	0.1809	0.1545	0.0193	0.0008	0.2386	-0.1047	0.2424	-0.1817	0.0045	-0.0626	-0.0183	0.9893	0.0567	6.2111	1.1333	6.4712	1.1968	A+	A-	A-
ELA	6	745221	2	A-C	3	8668	0.2561	0.368	0.0884	0.2554	0.2856	0.0023	0.0003	0.1331	-0.0198	-0.202	0.1338	0.0231	-0.0298	-0.0266	1.958	0.0634	3.3411	1.1063	6.3514	1.356	A-	A-	A-
ELA	6	745222	2	A-C	2	8681	0.4728	0.053	0.3355	0.4722	0.1381	0.0008	0.0003	0.2559	-0.2743	-0.0963	0.257	-0.0568	-0.0446	-0.0273	0.8329	0.0565	4.5211	1.0938	4.7411	1.136	A-	A-	A+
ELA	6	745216	2	A-K	3	8653	0.323	0.1495	0.3959	0.1286	0.3216	0.0037	0.0007	0.1434	-0.095	-0.0215	-0.0618	0.1446	-0.0318	-0.0198	1.5279	0.0593	6.1912	1.1609	6.0012	1.2475	A+	A-	A-
ELA	6	745217	2	A-K	3	8600	0.4534	0.4486	0.3011	0.1363	0.1034	0.0079	0.0025	0.2665	0.2673	-0.001	-0.1983	-0.1981	-0.0521	0.0094	0.9449	0.0566	4.3611	1.0916	5.2312	1.1547	A-	A+	A+
ELA	6	745212	2	A-V	2	8652	0.4274	0.4255	0.2327	0.0826	0.2547	0.0028	0.0017	0.2619	0.2637	-0.053	-0.2412	-0.0872	-0.055	-0.0172	1.0038	0.0568	5.1711	1.1104	6.0512	1.1843	A+	A-	A-
ELA	6	745213	2	A-V	2	8615	0.5038	0.1604	0.4994	0.1533	0.1782	0.0084	0.0003	0.2629	-0.1529	0.2634	-0.1444	-0.0537	-0.0306	-0.0156	0.6458	0.0565	4.3711	1.0905	3.9711	1.1124	A-	A-	A-
ELA	6	745248	2	D	2	17320	0.8212	0.0821	0.0526	0.8173	0.0432	0.0041	0.0007	0.4258	-0.2047	-0.2556	0.4268	-0.2383	-0.0423	-0.0203	-1.1537	0.0521	-3.6791	0.8881	-4.0992	0.7936	A+	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	6	745257	2	D	2	8652	0.6136	0.049	0.0702	0.2654	0.6109	0.0033	0.0012	0.4902	-0.2377	-0.2698	-0.2621	0.4914	-0.0379	-0.0413	0.0494	0.0585	-5.1491	0.8833	-4.9692	0.8354	A-	B-	A-
ELA	6	745393	2	D	2	8639	0.6557	0.1029	0.1373	0.1021	0.6518	0.0054	0.0006	0.4583	-0.2297	-0.2377	-0.2113	0.4572	-0.0284	-0.0076	-0.1478	0.0599	-2.1391	0.9458	-1.7891	0.9301	A+	A-	A-
ELA	6	744209	3	A-C	2	8664	0.5365	0.1861	0.5352	0.2333	0.0431	0.0017	0.0006	0.4266	-0.1702	0.427	-0.2436	-0.207	-0.0185	-0.0379	0.609	0.0572	0.421	1.0089	0.601	1.0184	A-	A-	A-
ELA	6	744218	3	A-C	2	8664	0.6992	0.0797	0.0742	0.1462	0.6976	0.0017	0.0006	0.4793	-0.2882	-0.212	-0.2407	0.4802	-0.0437	-0.0042	-0.3705	0.0625	-3.3091	0.9065	-1.9491	0.9035	A+	A-	A-
ELA	6	744220	3	A-C	2	8643	0.6876	0.0842	0.6844	0.1172	0.1095	0.0035	0.0013	0.4794	-0.1706	0.4823	-0.2638	-0.2772	-0.0608	-0.0503	-0.1806	0.0608	-2.1991	0.9422	-2.5891	0.887	A-	A-	A-
ELA	6	744212	3	A-K	2	8646	0.4956	0.1694	0.1358	0.4934	0.197	0.0033	0.001	0.2519	-0.2063	-0.0829	0.2542	-0.0439	-0.0397	-0.0482	0.7925	0.0572	8.5512	1.1945	8.1313	1.27	A+	A-	A+
ELA	6	744213	3	A-K	2	8646	0.4857	0.0901	0.0724	0.4835	0.3496	0.004	0.0003	0.3533	-0.3003	-0.2686	0.3543	-0.0387	-0.0407	-0.0227	0.7882	0.0572	1.161	1.025	1.551	1.0478	A+	A+	A+
ELA	6	744215	3	A-K	2	8572	0.6216	0.6135	0.1111	0.1981	0.0644	0.0092	0.0037	0.4367	0.4342	-0.2921	-0.1444	-0.2363	-0.0367	-0.0091	0.1404	0.0587	-3.6191	0.9164	-2.8491	0.8965	A-	A-	A-
ELA	6	744216	3	A-K	2	8650	0.551	0.1679	0.0673	0.2121	0.5488	0.0033	0.0006	0.2421	-0.2181	-0.1592	0.0074	0.2443	-0.044	-0.0275	0.5168	0.0574	7.3412	1.1679	8.0513	1.2775	A-	A+	A+
ELA	6	744211	3	A-V	2	8669	0.8873	0.8858	0.0481	0.0233	0.0411	0.0014	0.0003	0.3348	0.3365	-0.2539	-0.1939	-0.1101	-0.0324	-0.0214	-1.7138	0.0868	-3.2192	0.8189	-0.7991	0.9105	A+	A-	A-
ELA	6	745249	3	D	2	17254	0.6407	0.1892	0.1015	0.0664	0.6369	0.0047	0.0013	0.4869	-0.2755	-0.231	-0.2095	0.4888	-0.0513	-0.0473	-0.0568	0.0421	-6.3791	0.8902	-6.2292	0.8327	A-	A-	A-
ELA	6	745258	3	D	2	8636	0.4116	0.1389	0.2667	0.1795	0.4094	0.0031	0.0024	0.3577	-0.2105	-0.0581	-0.1905	0.3598	-0.0435	-0.0592	1.1268	0.0578	-0.179	0.9958	0.741	1.0243	A-	A-	A+
ELA	6	745394	3	D	2	8630	0.7231	0.7186	0.1133	0.0739	0.088	0.0052	0.001	0.3553	0.359	-0.198	-0.2209	-0.126	-0.0602	-0.0276	-0.4894	0.0637	-0.029	0.9989	0.451	1.0238	A+	A+	A-
ELA	6	744893	4	A-C	2	8684	0.6613	0.1688	0.661	0.0642	0.1054	0.0002	0.0003	0.4562	-0.3205	0.4564	-0.1888	-0.1603	-0.0119	-0.0172	-0.0852	0.0595	-1.589	0.9603	-1.7791	0.931	A+	A+	A-
ELA	6	744900	4	A-C	2	8672	0.5797	0.1199	0.1672	0.5785	0.1324	0.0012	0.0008	0.431	-0.2251	-0.1897	0.4308	-0.2007	-0.0194	-0.0059	0.2778	0.0576	-2.7491	0.94	-2.8391	0.9103	A+	A-	A-
ELA	6	744902	4	A-C	2	8647	0.5655	0.5628	0.075	0.1497	0.2076	0.0043	0.0006	0.4044	0.4048	-0.2403	-0.1622	-0.19	-0.0407	0.0056	0.3338	0.0575	-0.269	0.9939	0.771	1.0244	A-	A-	A-
ELA	6	744896	4	A-K	2	8604	0.7811	0.0524	0.7735	0.0891	0.0753	0.0083	0.0015	0.4262	-0.2207	0.4216	-0.2227	-0.2324	-0.0259	-0.0054	-0.8028	0.0669	-3.7591	0.8723	-2.6392	0.8448	A+	A-	A-
ELA	6	744897	4	A-K	2	8623	0.3486	0.3418	0.1509	0.1538	0.346	0.0062	0.0014	0.2527	0.0188	-0.1824	-0.1696	0.253	-0.0243	-0.0232	1.4313	0.0593	1.301	1.0322	2.8211	1.1133	A+	A-	A-
ELA	6	744898	4	A-K	2	8652	0.5274	0.118	0.3006	0.5251	0.052	0.0032	0.001	0.2929	-0.1959	-0.0553	0.2954	-0.2479	-0.0536	-0.026	0.6025	0.057	5.9211	1.1292	5.8812	1.1842	A+	A+	A+
ELA	6	744935	4	A-V	2	8639	0.5328	0.0628	0.2505	0.1511	0.5298	0.0051	0.0007	0.4259	-0.2308	-0.1616	-0.2334	0.4266	-0.0386	-0.022	0.5054	0.0571	-1.479	0.9687	-0.789	0.976	A-	A+	A+
ELA	6	744936	4	A-V	2	8657	0.8216	0.8186	0.0646	0.0673	0.0458	0.0026	0.001	0.4253	0.4285	-0.2444	-0.2414	-0.195	-0.055	-0.0298	-1.0687	0.0711	-1.2591	0.9489	-0.8891	0.9352	A+	A+	A+
ELA	6	745250	4	D	2	8630	0.8871	0.8811	0.0636	0.0229	0.0255	0.0063	0.0005	0.3615	0.3617	-0.2244	-0.1778	-0.2006	-0.0433	-0.027	-1.7055	0.0851	-1.1991	0.9314	-2.3792	0.7692	A+	A-	A-
ELA	6	745385	4	D	2	8649	0.5367	0.0673	0.1121	0.5342	0.2817	0.0031	0.0015	0.2044	-0.206	-0.2147	0.2064	0.0431	-0.0437	-0.0143	0.4809	0.0571	7.8012	1.175	7.5812	1.2471	A+	A-	A+
ELA	6	745395	4	D	2	8634	0.8113	0.0559	0.8062	0.0832	0.0483	0.0056	0.0007	0.4382	-0.2456	0.4382	-0.2043	-0.264	-0.0457	-0.0118	-1.1384	0.0723	-3.6791	0.852	-4.0893	0.7207	A+	A-	A-
ELA	6	744651	5	A-C	2	8639	0.5947	0.148	0.1185	0.1362	0.5909	0.0049	0.0015	0.4448	-0.1867	-0.2476	-0.1999	0.4455	-0.0478	-0.0205	0.1838	0.058	-1.729	0.9607	-1.479	0.9517	A-	A-	A-
ELA	6	744652	5	A-C	2	8684	0.6826	0.6818	0.0933	0.1154	0.1083	0.0009	0.0003	0.358	0.3594	-0.1996	-0.2072	-0.1337	-0.0352	-0.0298	-0.1999	0.0603	1.361	1.0363	3.0611	1.1306	A+	A-	A-
ELA	6	744655	5	A-C	2	8680	0.296	0.3553	0.2146	0.2955	0.1329	0.0009	0.0008	-0.0212	0.0567	-0.0516	-0.0205	0.013	-0.0204	-0.014	1.7646	0.0619	9.9013	1.3471	9.9017	1.7035	A+	A+	A+
ELA	6	744656	5	A-K	2	8615	0.7194	0.0654	0.7128	0.0478	0.1647	0.0089	0.0003	0.4505	-0.2418	0.4517	-0.2142	-0.2503	-0.0602	-0.0201	-0.4497	0.0626	-3.2291	0.9066	-3.5992	0.8354	A-	A+	A-
ELA	6	744659	5	A-K	2	8602	0.7029	0.114	0.0821	0.0979	0.6953	0.0089	0.0018	0.4736	-0.147	-0.2811	-0.2989	0.471	-0.0443	0.0013	-0.388	0.062	-4.2391	0.8823	-3.6192	0.8409	A-	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	6	744660	5	A-K	2	8668	0.4225	0.4212	0.3491	0.0912	0.1355	0.0025	0.0006	0.1608	0.1623	0.0208	-0.2098	-0.0793	-0.0373	-0.0284	1.042	0.0573	9.9012	1.2335	9.9014	1.3517	A-	A-	A+
ELA	6	744661	5	A-V	2	8663	0.5129	0.1568	0.511	0.232	0.0966	0.0023	0.0014	0.1746	-0.2639	0.1775	0.1576	-0.1883	-0.0473	-0.0375	0.6603	0.0569	8.7712	1.1951	8.6213	1.2685	A+	A+	A-
ELA	6	744662	5	A-V	2	8661	0.7391	0.0293	0.13	0.7362	0.1006	0.0032	0.0007	0.3985	-0.2117	-0.2192	0.4005	-0.2121	-0.0458	-0.0251	-0.6115	0.0644	-3.4191	0.8935	-3.3592	0.8303	A-	A-	A-
ELA	6	745251	5	D	2	8636	0.8461	0.0334	0.0417	0.8404	0.0777	0.0053	0.0015	0.4081	-0.2281	-0.2239	0.4103	-0.2217	-0.0539	-0.0324	-1.3754	0.0772	-3.1691	0.8537	-4.4193	0.6686	A+	A-	A-
ELA	6	745386	5	D	2	8655	0.7469	0.7434	0.0771	0.1018	0.0731	0.0031	0.0015	0.469	0.4719	-0.2464	-0.2714	-0.2062	-0.047	-0.0524	-0.6459	0.0649	-4.4091	0.8621	-4.7192	0.7629	A+	A-	A-
ELA	6	745396	5	D	2	8659	0.4589	0.1204	0.3118	0.457	0.1066	0.0036	0.0006	0.3968	-0.2441	-0.0954	0.3981	-0.2301	-0.0483	-0.034	0.8141	0.0569	0.531	1.011	0.991	1.0289	A-	A-	A-
ELA	6	743387	6	B-C	2	8663	0.633	0.6306	0.0877	0.0648	0.2129	0.0029	0.001	0.3688	0.3722	-0.2103	-0.2513	-0.1309	-0.0667	-0.0356	0.0892	0.0588	1.311	1.0312	1.4411	1.0554	A-	A+	A-
ELA	6	743388	6	B-C	2	8682	0.5734	0.2201	0.1304	0.0754	0.5724	0.0013	0.0005	0.386	-0.0873	-0.2338	-0.2841	0.3867	-0.0303	-0.0157	0.3247	0.0577	0.931	1.0207	1.7711	1.0625	A-	A-	A-
ELA	6	743389	6	B-C	2	8671	0.3729	0.1924	0.125	0.3717	0.3079	0.0021	0.0009	0.1734	-0.191	-0.2562	0.1757	0.171	-0.0618	-0.0344	1.3807	0.0589	9.9013	1.2587	9.9015	1.4628	A-	A-	A-
ELA	6	743390	6	B-K	2	8639	0.6876	0.683	0.1166	0.0675	0.1263	0.006	0.0007	0.5368	0.5355	-0.2414	-0.2697	-0.3034	-0.0298	-0.0359	-0.2498	0.0612	-5.5591	0.8557	-4.9692	0.7878	A-	A-	A-
ELA	6	743392	6	B-K	2	8631	0.6022	0.0684	0.5977	0.1864	0.1399	0.0075	0.0001	0.311	-0.1949	0.3105	-0.1563	-0.1156	-0.0236	-0.0051	0.2321	0.0581	4.1311	1.0967	5.3912	1.206	A+	A+	A+
ELA	6	743386	6	B-V	2	8686	0.5645	0.0949	0.0867	0.2534	0.5638	0.001	0.0002	0.4001	-0.32	-0.2101	-0.1035	0.4002	-0.0054	-0.0252	0.302	0.0578	-0.659	0.9851	-0.719	0.9748	B-	A-	B-
ELA	6	743394	6	B-V	2	8659	0.8241	0.0548	0.0874	0.8205	0.0329	0.0025	0.0018	0.4609	-0.2472	-0.2785	0.4632	-0.218	-0.0421	-0.0431	-1.1405	0.0732	-3.3591	0.8609	-5.3094	0.639	A+	A-	A-
ELA	6	743395	6	B-V	2	8669	0.6006	0.3009	0.5987	0.0648	0.0323	0.0018	0.0014	0.3311	-0.1803	0.333	-0.1521	-0.2277	-0.0262	-0.0451	0.2035	0.0582	1.281	1.0294	2.1411	1.0793	C-	A-	A-
ELA	6	717720	6	D	1	8645	0.7481	0.0586	0.12	0.7436	0.0717	0.0054	0.0006	0.4814	-0.277	-0.2428	0.4829	-0.2412	-0.053	-0.0302	-0.6986	0.0661	-4.2991	0.8599	-4.3292	0.7607	B+	A+	A+
ELA	6	745252	6	D	2	8653	0.8247	0.0467	0.8205	0.0483	0.0795	0.0044	0.0007	0.4657	-0.249	0.4664	-0.2131	-0.2852	-0.0464	-0.022	-1.1889	0.0741	-4.2092	0.8233	-4.7693	0.6627	A+	A-	A-
ELA	6	745387	6	D	2	8668	0.4811	0.1614	0.4795	0.1744	0.1813	0.0023	0.001	0.4202	-0.1802	0.421	-0.219	-0.1516	-0.0288	-0.0352	0.7674	0.0571	-1.289	0.9726	-0.449	0.9855	A-	A-	A-
ELA	6	745340	7	B-C	2	8651	0.473	0.4725	0.0792	0.3415	0.1056	0.001	0.0001	0.2419	0.2427	-0.2771	-0.0098	-0.1312	-0.0436	0.0076	0.7786	0.0567	5.7711	1.1239	5.9812	1.1797	A+	A-	A-
ELA	6	745341	7	B-C	2	8578	0.391	0.2111	0.1275	0.2646	0.3873	0.0091	0.0005	0.4499	-0.2588	-0.1111	-0.1652	0.4478	-0.0244	-0.0114	1.1934	0.0578	-3.6491	0.9198	-1.9991	0.9365	A-	A-	A-
ELA	6	745403	7	B-C	2	8613	0.5381	0.083	0.2048	0.5352	0.1715	0.0046	0.0009	0.3556	-0.2172	-0.2146	0.3567	-0.0738	-0.0485	-0.0081	0.4803	0.0569	0.961	1.02	1.7411	1.0521	A-	A-	A-
ELA	6	745404	7	B-C	2	8625	0.3363	0.2865	0.2156	0.3349	0.1589	0.0029	0.0013	0.0755	0.0377	-0.0434	0.0776	-0.0884	-0.042	-0.0346	1.525	0.0597	9.9013	1.3345	9.9015	1.5257	A+	A+	A+
ELA	6	745343	7	B-K	2	8642	0.5848	0.5835	0.127	0.0767	0.2106	0.0017	0.0005	0.48	0.4808	-0.216	-0.1877	-0.2769	-0.046	-0.0159	0.2711	0.0575	-4.3491	0.9085	-3.9991	0.876	B-	A-	A-
ELA	6	745344	7	B-K	2	8561	0.6727	0.0777	0.6649	0.1805	0.0654	0.0096	0.002	0.2413	-0.1694	0.2413	-0.0485	-0.1897	-0.0249	-0.0129	-0.1939	0.0602	5.7012	1.154	5.8113	1.2673	A+	A+	A+
ELA	6	745346	7	B-K	2	8627	0.3181	0.4423	0.0946	0.1424	0.3168	0.0027	0.0013	0.0749	0.1856	-0.1995	-0.1878	0.0775	-0.0604	-0.0325	1.6605	0.0608	9.7913	1.2906	9.6215	1.465	A-	A-	A-
ELA	6	745348	7	B-V	2	8637	0.4382	0.1032	0.437	0.091	0.366	0.0021	0.0007	0.2794	-0.2796	0.2803	-0.1841	0.0022	-0.0358	-0.017	0.983	0.057	5.4211	1.1197	5.7312	1.1788	A-	A-	A-
ELA	6	745253	7	D	2	8590	0.4773	0.1607	0.0664	0.2913	0.4734	0.0068	0.0014	0.3371	-0.1342	-0.2384	-0.12	0.3403	-0.0624	-0.044	0.828	0.0568	0.391	1.008	0.501	1.0142	A+	A-	A-
ELA	6	745388	7	D	2	8612	0.534	0.164	0.1734	0.531	0.126	0.0046	0.001	0.442	-0.1889	-0.2204	0.4428	-0.1938	-0.0376	-0.0221	0.38	0.0571	-2.279	0.9524	-2.2991	0.9307	A-	A-	A-
ELA	6	745327	8	B-C	2	8671	0.5117	0.0871	0.5092	0.3207	0.0782	0.004	0.0008	0.3596	-0.2776	0.3613	-0.0655	-0.2525	-0.06	-0.0053	0.636	0.0566	0.911	1.0185	1.681	1.0483	A-	A-	A-
ELA	6	745328	8	B-C	2	8668	0.4012	0.0682	0.3992	0.1383	0.3892	0.004	0.0011	0.1308	-0.1472	0.1332	-0.2791	0.1478	-0.0466	-0.0265	1.1978	0.0574	9.9012	1.2388	9.9014	1.3539	A-	A+	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	6	745329	8	B-C	2	8676	0.6395	0.6367	0.1062	0.1108	0.1421	0.0024	0.0018	0.4256	0.427	-0.2302	-0.2362	-0.1635	-0.0415	-0.0286	0.052	0.0587	-1.079	0.974	-0.919	0.9661	A-	A+	A+
ELA	6	745332	8	B-K	2	8655	0.6118	0.1346	0.1586	0.6077	0.0924	0.0059	0.0008	0.3629	-0.1398	-0.1977	0.3654	-0.1854	-0.0505	-0.0321	0.1535	0.0581	0.571	1.0131	0.181	1.0058	A-	A-	A-
ELA	6	745334	8	B-K	2	8648	0.7169	0.7116	0.1052	0.0629	0.1128	0.0067	0.0008	0.3842	0.3845	-0.2307	-0.2467	-0.1265	-0.0435	0.0016	-0.4072	0.0626	-1.069	0.968	0.491	1.0233	A+	A+	A+
ELA	6	745335	8	B-K	2	8696	0.3487	0.1031	0.3792	0.348	0.1678	0.0015	0.0005	0.1914	-0.2573	-0.0384	0.1919	0.0177	-0.0226	-0.0146	1.4096	0.0585	7.4312	1.1834	8.1813	1.3219	A-	A+	A+
ELA	6	745337	8	B-V	2	8690	0.3238	0.0741	0.4322	0.168	0.323	0.002	0.0007	0.282	-0.0581	-0.138	-0.1235	0.283	-0.0379	-0.033	1.5447	0.0594	1.531	1.0381	5.1012	1.2109	A-	A-	A-
ELA	6	745338	8	B-V	2	8697	0.3786	0.3457	0.1066	0.1679	0.3779	0.0011	0.0007	0.2686	-0.0886	-0.2056	-0.0625	0.2694	-0.0294	-0.027	1.2569	0.0577	4.4611	1.1014	5.1412	1.1783	B-	B-	B-
ELA	6	745254	8	D	2	8650	0.5779	0.1692	0.5737	0.0797	0.1702	0.0063	0.0009	0.4119	-0.2004	0.4136	-0.1912	-0.1932	-0.0501	-0.0348	0.3866	0.0571	-1.029	0.978	-0.489	0.9847	A-	A-	A-
ELA	6	745389	8	D	2	8665	0.4501	0.4476	0.2246	0.1827	0.1396	0.0033	0.0022	0.2925	0.2942	-0.1627	-0.1252	-0.0755	-0.0536	-0.0168	0.978	0.0568	3.8211	1.0804	5.5112	1.1696	A+	A-	A-
ELA	6	745817	9	B-C	3	8580	0.4385	0.2353	0.1878	0.1323	0.4337	0.0099	0.0009	0.3071	-0.0633	-0.1585	-0.1736	0.3082	-0.0502	-0.0067	0.9863	0.0568	3.9411	1.0828	4.5511	1.1383	A-	A-	A+
ELA	6	745825	9	B-C	3	8596	0.3597	0.159	0.1036	0.3719	0.3565	0.0084	0.0006	0.1544	-0.2081	-0.1346	0.0969	0.1564	-0.0505	0.0009	1.4033	0.0584	9.0212	1.2236	9.8114	1.3931	A-	A+	A+
ELA	6	745826	9	B-C	2	8629	0.2184	0.2173	0.1852	0.3754	0.217	0.0044	0.0008	0.0685	0.07	-0.1226	0.0681	-0.0261	-0.0447	-0.0199	2.2601	0.0673	5.8412	1.2267	9.1717	1.6754	A+	A+	A+
ELA	6	745827	9	B-C	2	8634	0.3878	0.3078	0.386	0.1546	0.147	0.0028	0.0018	0.1425	0.0248	0.1448	-0.1397	-0.078	-0.04	-0.0407	1.2622	0.0577	9.9012	1.2379	8.8813	1.3219	A-	A-	A+
ELA	6	745828	9	B-C	2	8648	0.6429	0.1297	0.641	0.1288	0.0975	0.0027	0.0003	0.2926	-0.148	0.2938	-0.1219	-0.163	-0.0431	0.0106	0.0191	0.0589	3.0811	1.0767	5.0812	1.1979	A-	A+	A-
ELA	6	745820	9	B-K	3	8629	0.2749	0.2823	0.2702	0.2735	0.1688	0.0045	0.0007	0.1399	-0.0033	-0.1385	0.1407	0.0069	-0.0258	-0.0204	1.84	0.062	4.7511	1.1421	6.2813	1.3259	A+	A-	A-
ELA	6	745818	9	B-V	2	8668	0.7606	0.0912	0.0519	0.7601	0.0961	0.0003	0.0003	0.3473	-0.282	-0.1424	0.348	-0.1191	-0.0218	-0.0186	-0.7328	0.0666	-1.089	0.9613	-0.449	0.9723	C-	B-	A-
ELA	6	745819	9	B-V	2	8654	0.4116	0.4107	0.2053	0.2196	0.1621	0.0017	0.0006	0.1946	0.196	-0.1102	-0.036	-0.094	-0.0447	-0.0217	1.1334	0.0572	8.4212	1.1884	8.1213	1.2721	B-	A-	A-
ELA	6	745255	9	D	2	8636	0.5364	0.1076	0.1536	0.534	0.2005	0.0043	0.0001	0.4298	-0.2001	-0.2212	0.431	-0.1743	-0.0528	-0.0038	0.3875	0.0571	-2.089	0.9561	-1.259	0.9622	A-	A-	A-
ELA	6	745390	9	D	2	8641	0.6183	0.064	0.616	0.0953	0.2209	0.0024	0.0014	0.395	-0.2702	0.3971	-0.2253	-0.138	-0.0495	-0.0308	0.0878	0.0584	-2.2391	0.9478	-2.5791	0.9116	A+	A+	A+
ELA	7	623067	0	A-C	2	77521	0.7445	0.7402	0.0739	0.0633	0.1169	0.0049	0.0009	0.4985	0.5013	-0.2544	-0.2636	-0.2601	-0.0731	-0.0162	-0.5086	0.021	-9.8991	0.8803	-9.8992	0.8042	A+	A+	A+
ELA	7	623072	0	A-C	2	77458	0.5295	0.1279	0.1513	0.1882	0.526	0.006	0.0006	0.4603	-0.2788	-0.136	-0.2116	0.4629	-0.0788	-0.0204	0.4827	0.0193	3.751	1.0287	6.0111	1.068	A+	A-	A+
ELA	7	625545	0	A-C	2	77435	0.6158	0.1218	0.1402	0.1196	0.6116	0.0062	0.0007	0.5299	-0.2514	-0.2536	-0.2521	0.5335	-0.0944	-0.0195	-0.1464	0.0201	-2.749	0.9766	-2.569	0.9628	A+	A+	A-
ELA	7	623064	0	A-K	2	77300	0.6334	0.1176	0.628	0.1216	0.1242	0.0078	0.0008	0.4199	-0.1351	0.4229	-0.2479	-0.2216	-0.07	-0.0216	-0.1079	0.02	6.3811	1.055	5.5811	1.082	A+	A+	A+
ELA	7	623071	0	A-K	2	77621	0.6152	0.6124	0.0662	0.2595	0.0574	0.0039	0.0006	0.5113	0.5136	-0.2866	-0.275	-0.2299	-0.0708	-0.0219	0.3821	0.0193	-9.8991	0.9123	-9.8491	0.8921	A+	A+	A+
ELA	7	625541	0	A-K	2	77448	0.6501	0.1859	0.6457	0.0883	0.0733	0.0059	0.0008	0.4879	-0.2024	0.4921	-0.2922	-0.2534	-0.0875	-0.0331	-0.3264	0.0205	3.331	1.0306	2.301	1.0378	A+	A+	A+
ELA	7	625546	0	A-K	3	77133	0.5437	0.1639	0.1639	0.1236	0.5378	0.0098	0.0009	0.337	-0.0845	-0.1441	-0.23	0.3438	-0.1032	-0.0308	0.6245	0.0193	9.9012	1.1544	9.9012	1.2248	A+	A+	A+
ELA	7	625548	0	A-K	2	77304	0.5792	0.5743	0.1081	0.2273	0.0817	0.0079	0.0006	0.5527	0.5551	-0.2662	-0.2958	-0.2176	-0.0875	-0.0189	0.1088	0.0196	-7.8591	0.9384	-7.6391	0.9057	A-	A+	A+
ELA	7	625549	0	A-K	2	77422	0.5984	0.1668	0.1298	0.5942	0.1022	0.0061	0.0009	0.4004	-0.1291	-0.2204	0.4058	-0.2268	-0.0928	-0.0366	-0.2177	0.0202	9.9012	1.1943	9.9012	1.2391	A+	A+	A+
ELA	7	623069	0	A-V	1	77577	0.435	0.0284	0.1954	0.4328	0.3383	0.0046	0.0005	0.4786	-0.2071	-0.2856	0.4799	-0.1799	-0.0685	-0.0153	1.0279	0.0195	3.081	1.0243	5.8011	1.0682	A-	A-	A-
ELA	7	625547	0	A-V	1	77529	0.6467	0.1767	0.1289	0.6431	0.0456	0.0049	0.0008	0.47	-0.249	-0.2244	0.4747	-0.2393	-0.0931	-0.029	-0.2252	0.0202	-0.359	0.9968	-0.199	0.9968	A-	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	7	632526	0	A-V	1	77375	0.6902	0.1107	0.685	0.116	0.0807	0.0067	0.001	0.4852	-0.224	0.4901	-0.2259	-0.2818	-0.0903	-0.03	-0.3152	0.0205	-5.7091	0.949	-6.6691	0.8961	A+	A+	A+
ELA	7	662344	0	B-C	2	77484	0.5306	0.1527	0.0818	0.5273	0.232	0.0052	0.0011	0.4221	-0.2871	-0.2919	0.4258	-0.0518	-0.0908	-0.0286	0.4964	0.0193	8.8911	1.0689	9.1611	1.1044	A+	A+	A+
ELA	7	662345	0	B-C	3	77567	0.3826	0.2621	0.3806	0.1243	0.2279	0.0045	0.0007	0.3919	-0.2039	0.3941	-0.2654	-0.0186	-0.0835	-0.0281	1.1031	0.0196	8.4111	1.0684	9.9012	1.1604	A-	A+	A+
ELA	7	662346	0	B-C	3	77541	0.4849	0.1543	0.1471	0.2108	0.4822	0.0045	0.001	0.5292	-0.2673	-0.2328	-0.1955	0.5314	-0.0863	-0.0297	0.7714	0.0193	-7.8891	0.9413	-3.089	0.9668	A-	A+	A+
ELA	7	716181	0	B-C	2	77554	0.6728	0.0738	0.2042	0.0475	0.6692	0.0043	0.001	0.498	-0.278	-0.2624	-0.2445	0.5003	-0.0634	-0.0253	-0.6473	0.0215	6.3611	1.0677	3.6611	1.0735	A-	A-	A-
ELA	7	716182	0	B-C	2	77151	0.5639	0.1227	0.1286	0.558	0.1802	0.0096	0.0009	0.4983	-0.2187	-0.2353	0.5	-0.2348	-0.0684	-0.0292	0.2697	0.0194	-6.429	0.9508	-6.6291	0.9235	A+	A+	A+
ELA	7	716183	0	B-C	2	77499	0.6236	0.0763	0.2324	0.0654	0.6198	0.0052	0.0009	0.4779	-0.3137	-0.1752	-0.2846	0.4804	-0.0652	-0.0285	-0.278	0.0204	3.301	1.0299	4.1111	1.0662	A-	A-	A-
ELA	7	662348	0	B-K	3	77515	0.4317	0.4292	0.2326	0.0896	0.2428	0.0052	0.0007	0.3303	0.3338	-0.2286	-0.2532	0.0253	-0.0875	-0.0344	0.9846	0.0194	9.9012	1.1709	9.9013	1.2803	A-	A+	A+
ELA	7	662349	0	B-K	3	77177	0.6251	0.6187	0.1447	0.1301	0.0963	0.0094	0.0008	0.4961	0.5002	-0.2184	-0.2168	-0.2833	-0.0909	-0.0298	0.0641	0.0197	-6.6491	0.9471	-3.379	0.9565	A-	A-	A-
ELA	7	716187	0	B-K	2	77393	0.5485	0.5444	0.2079	0.1521	0.0882	0.006	0.0015	0.3539	0.3568	-0.12	-0.1652	-0.2258	-0.0592	-0.0278	0.55	0.0193	9.9011	1.1104	9.9012	1.1849	A-	A+	A+
ELA	7	662352	0	B-V	2	77542	0.5633	0.1184	0.2735	0.0424	0.5601	0.005	0.0005	0.4558	-0.2763	-0.1848	-0.2472	0.4587	-0.0818	-0.0199	0.3567	0.0194	0.631	1.0048	0.981	1.0112	B-	A-	A-
ELA	7	716191	0	B-V	2	77497	0.3577	0.1803	0.3555	0.4196	0.0384	0.0052	0.0009	0.3997	-0.1224	0.4011	-0.2026	-0.2066	-0.0629	-0.0258	1.3618	0.02	7.5911	1.0661	9.9012	1.1979	B-	A-	A-
ELA	7	584050	0	D	2	77622	0.3657	0.2343	0.1626	0.3641	0.2345	0.0031	0.0014	0.2463	0.0193	-0.1641	0.248	-0.149	-0.0472	-0.0335	1.2773	0.0198	9.9012	1.2187	9.9014	1.3923	A+	A-	A-
ELA	7	663487	0	D	2	77539	0.3716	0.2479	0.3696	0.2883	0.0887	0.0043	0.0013	0.452	-0.1907	0.4534	-0.1917	-0.1554	-0.0652	-0.0335	1.3172	0.0199	2.511	1.0212	5.6711	1.0761	B-	A-	A-
ELA	7	663530	0	D	2	77558	0.5829	0.2029	0.1278	0.5798	0.0842	0.0042	0.0011	0.3924	-0.1765	-0.1917	0.3957	-0.1976	-0.068	-0.0317	0.4179	0.0193	8.3311	1.0649	7.6411	1.0883	A+	A-	A-
ELA	7	663532	0	D	2	77654	0.3954	0.0651	0.2552	0.2818	0.3938	0.0027	0.0013	0.282	-0.2561	-0.0401	-0.12	0.284	-0.0513	-0.039	1.3488	0.02	9.9013	1.2564	9.9014	1.4143	A+	A-	A+
ELA	7	714521	0	D	2	77739	0.6663	0.6643	0.2279	0.0589	0.0459	0.0018	0.0012	0.3928	0.3945	-0.2401	-0.2374	-0.1293	-0.0319	-0.037	-0.0156	0.0198	0.961	1.0079	3.471	1.048	A+	A+	A+
ELA	7	714522	0	D	2	77528	0.4993	0.062	0.4965	0.1915	0.2443	0.0044	0.0013	0.4173	-0.2371	0.4198	-0.2071	-0.1524	-0.0677	-0.0346	0.6026	0.0193	8.2011	1.0633	9.9011	1.1181	A+	A-	A-
ELA	7	715024	0	D	2	77271	0.4084	0.3923	0.4048	0.0853	0.1086	0.0019	0.0071	0.286	-0.0779	0.2906	-0.2292	-0.102	-0.0343	-0.0876	1.0171	0.0195	9.9012	1.1893	9.9013	1.3004	A+	A+	A+
ELA	7	715028	0	D	2	75364	0.4443	0.4294	0.361	0.1028	0.0734	0.0044	0.029	0.2604	0.2739	-0.0941	-0.0956	-0.141	-0.0697	-0.1186	0.7534	0.0193	9.9012	1.2042	9.9013	1.291	A-	A-	A-
ELA	7	715765	0	D	2	77568	0.8019	0.1158	0.0432	0.7977	0.0381	0.0043	0.0009	0.4003	-0.2032	-0.2508	0.4047	-0.2162	-0.0663	-0.0289	-0.7257	0.0218	-9.8992	0.8462	-9.8992	0.7794	A+	A+	A+
ELA	7	744881	1	A-C	2	8698	0.7777	0.1393	0.777	0.0446	0.0383	0.0007	0.0001	0.4694	-0.3491	0.4697	-0.1615	-0.2117	-0.0225	-0.0083	-0.8186	0.0648	-5.0591	0.8513	-4.1292	0.7625	A-	A-	A-
ELA	7	744885	1	A-K	2	8681	0.5827	0.2373	0.581	0.0801	0.0988	0.0018	0.0009	0.253	0.0034	0.2545	-0.3069	-0.1396	-0.0392	-0.0127	0.1457	0.0586	6.2412	1.1554	6.8413	1.2724	A+	A-	A-
ELA	7	744886	1	A-K	2	8682	0.5932	0.5916	0.0334	0.0438	0.3285	0.0016	0.001	0.3247	0.327	-0.2234	-0.2392	-0.146	-0.0502	-0.0334	0.1929	0.0585	4.3311	1.1058	4.4512	1.1692	A+	A-	A-
ELA	7	744887	1	A-K	2	8678	0.7325	0.0845	0.103	0.7303	0.079	0.0025	0.0006	0.4304	-0.1958	-0.1907	0.4329	-0.2824	-0.0562	-0.0273	-0.4216	0.0612	-3.9391	0.8987	-1.9291	0.9073	A+	A+	A+
ELA	7	744889	1	A-K	2	8650	0.5295	0.0817	0.2726	0.5261	0.1133	0.0055	0.0008	0.4123	-0.259	-0.1954	0.4123	-0.1423	-0.0289	-0.0232	0.5059	0.0583	2.3511	1.0562	2.8811	1.0999	A+	A-	A-
ELA	7	744890	1	A-K	2	8674	0.5214	0.2649	0.0825	0.1295	0.5196	0.0029	0.0007	0.4039	-0.0631	-0.2736	-0.2844	0.4062	-0.0647	-0.0337	0.5732	0.0583	1.251	1.0296	2.4511	1.0845	A+	A+	A+
ELA	7	744882	1	A-V	2	8689	0.6613	0.6601	0.0532	0.2245	0.0604	0.0013	0.0006	0.3213	0.3225	-0.2272	-0.126	-0.1998	-0.0267	-0.0259	-0.1957	0.0599	2.3111	1.0587	5.3112	1.2475	A+	A-	A-
ELA	7	744883	1	A-V	2	8680	0.8043	0.0859	0.0414	0.0679	0.802	0.0022	0.0007	0.4153	-0.1673	-0.2555	-0.261	0.4183	-0.0463	-0.042	-0.9468	0.0663	-5.1292	0.8406	-2.1291	0.8617	A+	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	7	745805	1	D	2	17219	0.533	0.1275	0.0992	0.2367	0.5288	0.007	0.0007	0.3183	-0.1353	-0.1983	-0.118	0.3217	-0.0627	-0.0284	0.3738	0.041	6.0211	1.1003	6.0511	1.1484	A+	A-	A-
ELA	7	745857	1	D	2	8663	0.8813	0.0265	0.0604	0.0311	0.8771	0.0025	0.0023	0.4149	-0.188	-0.2664	-0.2249	0.4184	-0.0462	-0.0479	-1.7252	0.0797	-3.5492	0.8326	-2.9193	0.7218	A+	A-	A-
ELA	7	745868	1	D	2	8658	0.7726	0.1316	0.0504	0.7684	0.0441	0.0047	0.0007	0.4107	-0.1945	-0.249	0.4123	-0.2432	-0.0408	-0.0345	-0.8631	0.0653	0.341	1.0103	2.4512	1.1638	A+	A-	A-
ELA	7	747189	2	A-C	2	8624	0.8258	0.8222	0.0525	0.0486	0.0723	0.0038	0.0006	0.4554	0.4568	-0.2624	-0.2326	-0.2419	-0.0524	-0.0095	-1.1858	0.0727	-5.0492	0.8042	-5.6894	0.5976	A+	A+	A-
ELA	7	747190	2	A-C	2	8640	0.9088	0.0365	0.0277	0.9065	0.0268	0.0024	0.0001	0.3696	-0.1914	-0.2204	0.3719	-0.2093	-0.0494	-0.001	-2.1383	0.0965	-2.2291	0.8504	-4.0595	0.5406	A+	A-	A-
ELA	7	747191	2	A-C	2	8645	0.4384	0.3847	0.1018	0.074	0.4375	0.0013	0.0007	0.0179	0.2328	-0.1982	-0.2364	0.0183	-0.0091	-0.0053	0.9716	0.0583	9.9015	1.5214	9.9017	1.749	A+	A+	A-
ELA	7	747192	2	A-K	2	8645	0.726	0.0682	0.7245	0.1333	0.0719	0.0017	0.0002	0.3662	-0.2752	0.3669	-0.1911	-0.1092	-0.0317	-0.0021	-0.432	0.0628	-0.499	0.9852	-0.459	0.9741	A+	A+	A+
ELA	7	747195	2	A-K	2	8605	0.6149	0.1818	0.1145	0.0862	0.6108	0.0065	0.0001	0.4121	-0.1492	-0.2026	-0.2681	0.4144	-0.0572	-0.0113	0.0539	0.0594	-0.639	0.9839	0.091	1.0033	A+	A+	A+
ELA	7	747197	2	A-K	2	8635	0.6391	0.6372	0.0997	0.0398	0.2202	0.0025	0.0006	0.437	0.4387	-0.2135	-0.2216	-0.2427	-0.0518	-0.0201	-0.0592	0.06	-1.799	0.9543	-1.2191	0.9464	A+	A+	A+
ELA	7	747198	2	A-K	2	8630	0.7896	0.0528	0.0847	0.7867	0.0722	0.0028	0.0009	0.4815	-0.2586	-0.2552	0.4834	-0.2532	-0.0517	-0.0315	-0.9594	0.069	-3.8191	0.8648	-4.1693	0.7234	A+	A-	A-
ELA	7	747200	2	A-V	2	8643	0.7086	0.1589	0.707	0.0962	0.0358	0.0017	0.0005	0.4287	-0.2601	0.4296	-0.1947	-0.2226	-0.0304	-0.0225	-0.5418	0.0638	-0.269	0.9916	-0.299	0.9816	A-	A-	A-
ELA	7	717722	2	D	2	8609	0.3389	0.1212	0.3353	0.2005	0.3369	0.0051	0.001	0.3072	-0.2334	0.0105	-0.1727	0.3095	-0.0688	-0.0297	1.4588	0.0604	4.2211	1.1138	6.1513	1.2877	A+	A-	A-
ELA	7	745807	2	D	2	17177	0.6648	0.6603	0.0817	0.1554	0.0959	0.0057	0.001	0.4418	0.4449	-0.2153	-0.1717	-0.2837	-0.0667	-0.0313	-0.2777	0.0434	-1.639	0.9684	-0.999	0.9658	A+	A+	A-
ELA	7	745858	2	D	2	8622	0.5979	0.5951	0.1669	0.0683	0.165	0.0021	0.0025	0.2756	0.2791	-0.1267	-0.2338	-0.0711	-0.0469	-0.0443	0.1534	0.059	5.9812	1.1519	5.9913	1.256	A+	A-	A+
ELA	7	745308	3	A-C	2	8637	0.5311	0.5298	0.138	0.1872	0.1425	0.0016	0.0008	0.3261	0.328	-0.1306	-0.1183	-0.1989	-0.0445	-0.0413	0.4499	0.0583	6.9412	1.1716	6.4013	1.2558	A-	A+	A+
ELA	7	745315	3	A-C	2	8585	0.644	0.1605	0.0785	0.1139	0.6386	0.0068	0.0016	0.4079	-0.1502	-0.2467	-0.2188	0.4109	-0.0736	-0.0073	-0.0312	0.0598	0.991	1.0247	1.4911	1.0692	A+	A+	A+
ELA	7	745316	3	A-C	2	8595	0.5003	0.0829	0.4967	0.3243	0.0888	0.0065	0.0008	0.4783	-0.2401	0.478	-0.1948	-0.2735	-0.0345	-0.0355	0.6218	0.0582	-2.2691	0.9476	-1.8191	0.9362	A+	A-	A+
ELA	7	745317	3	A-C	2	8612	0.403	0.2823	0.1884	0.4009	0.1231	0.0033	0.002	0.2283	-0.1294	-0.112	0.2305	-0.0202	-0.0571	-0.0228	1.1529	0.0593	9.9013	1.322	9.9015	1.5047	A+	A+	A+
ELA	7	745311	3	A-K	2	8634	0.8726	0.0259	0.8702	0.0416	0.0596	0.0015	0.0013	0.3105	-0.1729	0.3146	-0.1546	-0.1876	-0.0423	-0.0385	-1.7136	0.0834	-1.6291	0.9128	-0.5091	0.9404	A+	A-	A-
ELA	7	745313	3	A-K	2	8634	0.6161	0.0894	0.2227	0.6143	0.0708	0.0022	0.0006	0.4807	-0.2226	-0.2435	0.4827	-0.2597	-0.0684	-0.0139	0.0472	0.0594	-2.9091	0.9298	-2.2991	0.9012	A+	A-	A-
ELA	7	745309	3	A-V	2	8645	0.4377	0.3299	0.1846	0.047	0.4371	0.001	0.0005	0.4374	-0.2626	-0.1047	-0.2421	0.4383	-0.0403	-0.0352	0.9273	0.0586	0.571	1.0136	1.261	1.0452	B-	A+	A+
ELA	7	745310	3	A-V	2	8634	0.897	0.8945	0.0319	0.0437	0.0271	0.0014	0.0014	0.3625	0.3665	-0.1849	-0.2154	-0.2025	-0.0565	-0.0285	-1.9201	0.089	-2.6692	0.844	-2.1592	0.7502	A-	A+	A-
ELA	7	717834	3	D	2	8590	0.4161	0.188	0.248	0.1433	0.4128	0.0068	0.001	0.2888	-0.143	-0.0645	-0.1552	0.2907	-0.0529	-0.0192	1.1075	0.0591	5.2511	1.1353	6.1112	1.2454	A-	A-	A-
ELA	7	745809	3	D	2	17200	0.4726	0.1633	0.1441	0.4692	0.2161	0.0063	0.001	0.4007	-0.2223	-0.1657	0.4029	-0.1331	-0.0622	-0.0314	0.7097	0.0409	3.1211	1.051	3.4511	1.0833	A-	A-	A-
ELA	7	745859	3	D	2	8615	0.7638	0.0415	0.1053	0.76	0.0882	0.0043	0.0007	0.4567	-0.2259	-0.287	0.4586	-0.2064	-0.0554	-0.0222	-0.8557	0.0672	-4.2391	0.8621	-2.8192	0.8111	A+	A-	A-
ELA	7	747225	4	A-C	2	8631	0.5793	0.2235	0.1255	0.0709	0.5782	0.0016	0.0003	0.2178	0.0247	-0.2019	-0.1934	0.22	-0.0454	-0.032	0.2033	0.0581	7.6512	1.1852	7.8213	1.2916	A+	A+	A-
ELA	7	747233	4	A-C	2	8634	0.8359	0.8345	0.0481	0.0478	0.068	0.0014	0.0002	0.4117	0.4131	-0.2443	-0.2424	-0.1906	-0.0336	-0.0195	-1.1006	0.0709	-3.3191	0.8726	-3.8293	0.7399	A+	A+	A-
ELA	7	747235	4	A-C	2	8627	0.5071	0.5059	0.0628	0.1433	0.2856	0.0022	0.0002	0.0068	0.0078	-0.2038	0.0847	0.0375	-0.0151	-0.0225	0.6186	0.0573	9.9014	1.3968	9.9016	1.6152	A+	A-	A-
ELA	7	747328	4	A-C	2	8568	0.6906	0.0924	0.0761	0.6842	0.1381	0.0084	0.0008	0.4391	-0.2741	-0.2595	0.4403	-0.1471	-0.0589	-0.0126	-0.324	0.0612	-3.0891	0.9181	-2.3991	0.8922	A+	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	7	747228	4	A-K	2	8606	0.2984	0.336	0.0801	0.2969	0.282	0.0029	0.002	0.2405	0.0272	-0.2397	0.2422	-0.12	-0.0411	-0.0511	1.6815	0.0618	3.3411	1.097	6.3213	1.3214	A-	A-	A-
ELA	7	747231	4	A-K	2	8616	0.5636	0.253	0.5615	0.08	0.1018	0.0031	0.0006	0.3621	-0.0333	0.3635	-0.2624	-0.3038	-0.0401	-0.0247	0.449	0.0574	1.021	1.0224	2.0611	1.0651	A+	A+	A-
ELA	7	747227	4	A-V	2	8624	0.8643	0.0494	0.8619	0.0523	0.0336	0.0022	0.0006	0.4056	-0.2173	0.4062	-0.2351	-0.2149	-0.0353	-0.014	-1.5078	0.0791	-4.0292	0.8104	-4.3494	0.6434	A+	A+	A-
ELA	7	749406	4	A-V	2	8571	0.1913	0.1695	0.2272	0.4047	0.1896	0.0083	0.0006	0.1907	-0.2325	-0.1063	0.1241	0.1915	-0.0387	-0.0274	2.326	0.0699	2.4011	1.0955	6.4815	1.5142	A-	A-	A-
ELA	7	745810	4	D	2	17209	0.3123	0.1875	0.2716	0.2249	0.3106	0.0049	0.0006	0.1686	-0.0325	-0.1579	0.0199	0.1706	-0.0537	-0.026	1.5774	0.0432	9.8412	1.1997	9.9014	1.3822	A-	A-	A-
ELA	7	745861	4	D	2	8589	0.3633	0.1399	0.3608	0.3016	0.1909	0.0052	0.0016	0.351	-0.1215	0.3522	-0.2062	-0.0704	-0.0487	-0.0296	1.2745	0.0589	0.001	0.9997	2.5811	1.0965	A+	A-	A-
ELA	7	747143	5	B-C	2	8604	0.5762	0.1359	0.5744	0.2162	0.0703	0.0024	0.0007	0.3294	-0.2678	0.331	-0.0635	-0.1682	-0.0488	-0.0126	0.3015	0.0583	2.3311	1.0551	3.0011	1.1075	A+	A+	A+
ELA	7	747144	5	B-C	2	8595	0.4783	0.4763	0.1123	0.188	0.2192	0.0038	0.0003	0.5166	0.5171	-0.2257	-0.2575	-0.2005	-0.0508	-0.0158	0.676	0.0578	-4.6991	0.897	-3.5691	0.8898	A+	A-	A-
ELA	7	747145	5	B-C	2	8621	0.3156	0.4078	0.0967	0.179	0.3153	0.001	0.0001	0.2717	0.0359	-0.2317	-0.1955	0.2716	-0.0143	0.0084	1.5876	0.0612	4.4311	1.1249	5.2613	1.2555	A-	A-	A+
ELA	7	747147	5	B-C	3	8612	0.7153	0.038	0.0516	0.7137	0.1945	0.002	0.0002	0.3614	-0.2224	-0.2563	0.3634	-0.1581	-0.0611	0.0141	-0.5017	0.0633	-0.279	0.9912	1.3611	1.0742	A-	A-	A-
ELA	7	747148	5	B-K	2	8530	0.4389	0.2793	0.4338	0.0876	0.1876	0.0114	0.0003	0.1474	0.0691	0.1535	-0.2218	-0.09	-0.0832	-0.0241	0.9377	0.0581	9.9013	1.3277	9.9015	1.4874	A+	A+	A+
ELA	7	747150	5	B-K	2	8577	0.3191	0.3911	0.2043	0.0812	0.3171	0.0053	0.0009	0.1347	0.0406	-0.063	-0.1986	0.1364	-0.0371	-0.0309	1.607	0.0614	8.8013	1.2604	9.2915	1.4855	A-	A+	A+
ELA	7	747153	5	B-V	2	8604	0.6082	0.0847	0.2704	0.6063	0.0355	0.0013	0.0019	0.4676	-0.2256	-0.2811	0.4699	-0.2063	-0.0498	-0.0465	-0.0041	0.0595	-1.419	0.9648	-0.669	0.9729	A-	A-	A-
ELA	7	747154	5	B-V	2	8610	0.5373	0.536	0.2338	0.1761	0.0517	0.0016	0.0008	0.2977	0.2987	-0.0427	-0.2228	-0.1996	-0.0311	-0.021	0.4722	0.0579	4.3511	1.1025	4.6612	1.1608	A+	A+	A+
ELA	7	745811	5	D	1	17204	0.7305	0.0881	0.0834	0.7255	0.0962	0.0062	0.0007	0.4313	-0.2373	-0.2025	0.4342	-0.2207	-0.061	-0.026	-0.5938	0.0453	-3.4791	0.9261	-3.1091	0.8792	A+	A+	A+
ELA	7	745862	5	D	2	8584	0.5003	0.0928	0.4976	0.2143	0.1898	0.0039	0.0015	0.4278	-0.1765	0.4301	-0.2304	-0.1631	-0.0616	-0.0375	0.6046	0.0578	0.111	1.0023	0.271	1.0083	A+	A-	A-
ELA	7	744639	6	B-C	2	8631	0.2881	0.2869	0.1203	0.1	0.4885	0.0037	0.0006	0.1028	0.1051	-0.2749	-0.2548	0.2456	-0.0699	-0.0078	1.7689	0.0626	6.8012	1.2123	7.9914	1.4404	A-	A-	A-
ELA	7	744640	6	B-C	2	8637	0.5332	0.1627	0.1796	0.1229	0.5313	0.0024	0.0012	0.4394	-0.1405	-0.3147	-0.1337	0.4412	-0.0473	-0.039	0.5043	0.0575	-0.039	0.9989	0.481	1.015	A+	A-	A-
ELA	7	744642	6	B-C	2	8624	0.6539	0.0979	0.6506	0.1608	0.0856	0.0045	0.0006	0.5044	-0.2665	0.5044	-0.2131	-0.2866	-0.0379	-0.0092	-0.1495	0.0601	-4.5991	0.8867	-4.4692	0.8164	A+	A-	A+
ELA	7	744644	6	B-K	2	8656	0.5137	0.1515	0.1998	0.513	0.1343	0.001	0.0003	0.4265	-0.2353	-0.2029	0.4262	-0.1387	0.004	-0.019	0.6403	0.0574	0.561	1.0123	1.231	1.0386	A-	A-	A-
ELA	7	744645	6	B-K	2	8641	0.3711	0.0606	0.4453	0.37	0.121	0.002	0.0012	0.2407	-0.2359	0.0257	0.2421	-0.2157	-0.0483	-0.0276	1.3061	0.0592	6.3512	1.1642	6.3913	1.2565	A+	A-	A-
ELA	7	744647	6	B-K	2	8654	0.3957	0.1857	0.395	0.0714	0.3462	0.001	0.0006	0.2808	-0.1953	0.2811	-0.272	0.0202	-0.0216	-0.0129	1.1881	0.0586	6.7912	1.1701	7.5613	1.2889	A-	A-	A-
ELA	7	744649	6	B-V	2	8643	0.6978	0.6958	0.1044	0.1494	0.0475	0.0018	0.001	0.433	0.435	-0.2485	-0.1948	-0.2433	-0.0539	-0.0202	-0.4617	0.0627	-1.539	0.9557	-1.0591	0.9441	A-	B-	A-
ELA	7	744650	6	B-V	2	8615	0.4282	0.0919	0.3674	0.1089	0.4256	0.0058	0.0003	0.2049	-0.2162	0.1124	-0.2889	0.2072	-0.0555	0.0029	0.9383	0.0578	9.9013	1.2671	9.9014	1.4176	A-	A-	A-
ELA	7	745812	6	D	2	17221	0.7828	0.0867	0.7783	0.0649	0.0643	0.0051	0.0006	0.4587	-0.2086	0.4611	-0.2659	-0.255	-0.0557	-0.0306	-0.9757	0.0488	-3.8191	0.9024	-4.5792	0.7895	A+	B-	B-
ELA	7	745863	6	D	2	8616	0.5731	0.1195	0.1515	0.5697	0.1533	0.0044	0.0016	0.436	-0.2126	-0.1893	0.4383	-0.2082	-0.0547	-0.0376	0.2701	0.058	-0.649	0.985	-1.7191	0.9411	A-	A-	A-
ELA	7	744618	7	B-C	2	8629	0.4603	0.3214	0.1665	0.0501	0.4589	0.0016	0.0014	0.2544	-0.016	-0.1635	-0.256	0.2567	-0.0548	-0.0399	0.8904	0.0579	6.0111	1.1411	5.4212	1.1882	A+	A-	A-
ELA	7	744620	7	B-C	2	8615	0.6824	0.0714	0.092	0.1527	0.6793	0.0025	0.0021	0.462	-0.2107	-0.248	-0.2413	0.4637	-0.0501	-0.0261	-0.274	0.0612	-3.3491	0.9108	-1.8991	0.912	A+	A+	A+
ELA	7	744621	7	B-C	2	8606	0.3039	0.3021	0.2484	0.0954	0.3484	0.0054	0.0002	0.0848	0.0861	0.0104	-0.138	-0.002	-0.0317	-0.0133	1.7799	0.0629	9.9013	1.3302	9.9017	1.733	B-	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	7	744623	7	B-C	2	8626	0.4259	0.202	0.134	0.4245	0.2362	0.0022	0.0012	0.2911	-0.265	-0.1097	0.2931	0.0065	-0.0491	-0.0458	1.0704	0.0583	6.5412	1.1585	7.6913	1.2905	A-	A-	A-
ELA	7	744625	7	B-C	2	8647	0.7867	0.0982	0.786	0.0533	0.0616	0.0007	0.0002	0.4539	-0.2859	0.4543	-0.2448	-0.1888	-0.0188	-0.0241	-0.9185	0.0683	-2.4391	0.9133	-2.5992	0.8277	A-	A-	A-
ELA	7	744622	7	B-K	2	8557	0.6554	0.1522	0.6479	0.1276	0.061	0.001	0.0103	0.4362	-0.1703	0.4364	-0.264	-0.225	-0.0462	-0.0381	-0.1933	0.0606	-2.2891	0.9401	-1.7191	0.9238	A+	A-	A-
ELA	7	744624	7	B-K	2	8634	0.6685	0.6669	0.0623	0.0531	0.2153	0.002	0.0005	0.1869	0.1894	-0.228	-0.2279	0.0471	-0.0434	-0.0213	-0.1906	0.0606	7.0812	1.1996	8.6814	1.4437	A+	A+	A+
ELA	7	744716	7	B-K	2	8590	0.7976	0.0746	0.0698	0.7916	0.0565	0.0057	0.0018	0.4692	-0.2558	-0.2684	0.4685	-0.2187	-0.0471	-0.0153	-1.0223	0.0699	-4.5892	0.8336	-2.7192	0.8097	A+	A-	A-
ELA	7	745814	7	D	1	8579	0.7502	0.168	0.7436	0.0373	0.0423	0.0079	0.0009	0.3859	-0.194	0.3911	-0.2323	-0.2324	-0.0752	-0.0265	-0.7231	0.0657	0.281	1.0088	0.321	1.0186	A+	A+	A+
ELA	7	745864	7	D	2	8619	0.6466	0.0989	0.0923	0.1607	0.6439	0.0028	0.0014	0.4096	-0.2297	-0.2123	-0.1732	0.4114	-0.0395	-0.0334	-0.1466	0.0603	-1.069	0.9721	-2.2591	0.9032	A-	A-	A-
ELA	7	744869	8	B-C	2	8652	0.5539	0.1903	0.1713	0.0825	0.5513	0.0031	0.0015	0.388	-0.2619	-0.0865	-0.1994	0.3895	-0.0297	-0.0468	0.293	0.0583	5.0011	1.1218	4.8612	1.1789	A+	A+	A+
ELA	7	744879	8	B-C	2	8653	0.4685	0.4664	0.196	0.1641	0.169	0.0033	0.0012	0.3052	0.3062	-0.0797	-0.2353	-0.0834	-0.0277	-0.0341	0.7479	0.0579	4.6711	1.1114	5.4912	1.1877	A+	A+	A+
ELA	7	744880	8	B-C	2	8675	0.439	0.1957	0.1945	0.1697	0.4381	0.0015	0.0005	0.4359	-0.2607	-0.0313	-0.2638	0.4364	-0.0254	-0.0335	0.9392	0.0583	-0.399	0.9905	0.051	1.0014	A-	A-	A-
ELA	7	744872	8	B-K	2	8671	0.4672	0.0834	0.1864	0.4661	0.2617	0.0014	0.001	0.2912	-0.1002	-0.0122	0.2925	-0.2526	-0.0262	-0.0449	0.8022	0.058	5.3711	1.1292	5.2912	1.1815	A+	A-	A+
ELA	7	744875	8	B-K	2	8654	0.2542	0.1419	0.2531	0.3939	0.2067	0.0026	0.0017	0.1118	-0.0643	0.1135	0.0643	-0.1349	-0.0401	-0.0395	1.9774	0.0653	7.7313	1.2714	9.9019	1.8897	A-	A-	A-
ELA	7	744876	8	B-K	2	8631	0.3611	0.3586	0.2493	0.1981	0.187	0.0064	0.0006	0.2523	0.2543	-0.0516	-0.1288	-0.1116	-0.0537	-0.0216	1.3031	0.0597	6.0612	1.1608	7.4813	1.3198	A-	A+	A+
ELA	7	744870	8	B-V	2	8667	0.3416	0.4418	0.1087	0.3407	0.106	0.0021	0.0008	0.2638	0.0145	-0.2914	0.2653	-0.1266	-0.0437	-0.0437	1.4202	0.0603	7.1612	1.1987	8.0414	1.3714	A-	A+	A+
ELA	7	744871	8	B-V	1	8652	0.5989	0.0704	0.5962	0.0507	0.2781	0.0031	0.0015	0.4841	-0.2481	0.486	-0.2519	-0.2571	-0.0575	-0.0346	0.0818	0.0591	-3.4591	0.9181	-2.5791	0.9036	A-	A+	A-
ELA	7	745815	8	D	2	8625	0.6441	0.6391	0.1274	0.071	0.1549	0.0059	0.0018	0.456	0.4585	-0.2218	-0.215	-0.2344	-0.0644	-0.031	-0.1517	0.0603	-2.5491	0.9354	-1.7191	0.926	A+	A-	A-
ELA	7	745865	8	D	2	8652	0.587	0.0889	0.5843	0.1434	0.1788	0.0031	0.0015	0.3919	-0.2254	0.3928	-0.1816	-0.1644	-0.0256	-0.0354	0.1808	0.0587	0.581	1.0136	1.271	1.0466	A+	A-	A-
ELA	7	747131	9	B-C	3	8621	0.4914	0.1324	0.1462	0.2281	0.4895	0.0018	0.0018	0.2771	-0.0607	-0.0808	-0.2082	0.2788	-0.0366	-0.0307	0.7439	0.0575	7.3012	1.1707	7.9113	1.2622	A+	A+	A+
ELA	7	747139	9	B-C	3	8601	0.4794	0.1079	0.1532	0.4765	0.2563	0.0055	0.0005	0.3913	-0.1927	-0.2366	0.3922	-0.1079	-0.0441	-0.0204	0.8027	0.0576	0.811	1.018	2.8511	1.0902	A+	A-	A-
ELA	7	747140	9	B-C	2	8625	0.2234	0.4101	0.2458	0.1181	0.2227	0.0018	0.0014	0.0972	0.0096	0.0421	-0.1872	0.0987	-0.0604	-0.0236	2.2446	0.0686	6.5213	1.2604	9.1317	1.7434	A-	A+	A-
ELA	7	747141	9	B-C	2	8632	0.4242	0.2028	0.4232	0.3179	0.0536	0.0016	0.0008	0.264	-0.1584	0.2656	-0.0366	-0.2117	-0.0418	-0.0406	0.9882	0.0579	7.3412	1.1759	7.2413	1.2543	A-	A+	A+
ELA	7	747138	9	B-K	2	8611	0.4015	0.3995	0.2613	0.1436	0.1907	0.0034	0.0015	0.3318	0.3338	-0.1487	-0.1404	-0.1133	-0.058	-0.0264	1.1879	0.0586	2.4511	1.0588	4.0412	1.1504	A-	A-	A-
ELA	7	747132	9	B-V	1	8629	0.2547	0.254	0.426	0.1642	0.153	0.0014	0.0014	0.1021	0.1035	0.0897	-0.1305	-0.1059	-0.0419	-0.0381	2.0166	0.0655	6.2312	1.2187	8.2416	1.5612	A-	A+	A-
ELA	7	747133	9	B-V	2	8631	0.4127	0.1627	0.2042	0.4116	0.2189	0.0017	0.0008	0.186	-0.1528	-0.0062	0.1871	-0.0757	-0.0269	-0.0278	1.03	0.058	9.5512	1.2344	9.9014	1.3754	A+	A-	A-
ELA	7	747142	9	B-V	2	8646	0.8487	0.0421	0.848	0.0543	0.0548	0.0005	0.0003	0.4318	-0.2389	0.4327	-0.2234	-0.2453	-0.0158	-0.0325	-1.4646	0.0777	-3.1391	0.8554	-4.5294	0.6409	A-	C-	C-
ELA	7	745816	9	D	2	8583	0.8019	0.0685	0.0704	0.7954	0.0576	0.0074	0.0007	0.4744	-0.232	-0.2735	0.4798	-0.2438	-0.0898	-0.0175	-1.0585	0.0701	-4.7392	0.8274	-6.1094	0.6216	A+	A-	A-
ELA	7	745867	9	D	2	8600	0.2864	0.2846	0.1323	0.3948	0.1821	0.004	0.0021	0.1155	0.1182	-0.1789	0.0416	-0.0197	-0.0551	-0.0424	1.7216	0.0623	7.1212	1.2172	8.4915	1.4717	A-	A-	A-
ELA	8	625571	0	A-C	2	76097	0.6379	0.0873	0.1143	0.6339	0.1582	0.0056	0.0007	0.5669	-0.2943	-0.2992	0.5696	-0.2438	-0.0872	-0.0239	-0.2277	0.0199	-9.8991	0.8968	-9.8992	0.8234	A-	A-	A+
ELA	8	625577	0	A-C	2	76055	0.3918	0.3892	0.0606	0.4698	0.0736	0.0059	0.001	0.3282	0.3312	-0.2253	-0.137	-0.1216	-0.0856	-0.0347	0.7769	0.0194	9.9011	1.0923	9.9012	1.1746	A+	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	8	625579	0	A-C	2	75938	0.4376	0.2344	0.434	0.1495	0.1738	0.0078	0.0006	0.2453	-0.0159	0.2501	-0.1201	-0.1738	-0.0877	-0.0348	0.9733	0.0196	9.9013	1.2767	9.9015	1.4657	A+	A+	A+
ELA	8	712071	0	A-C	2	76279	0.4572	0.4553	0.1643	0.0922	0.2842	0.0031	0.0009	0.2921	0.2939	-0.1873	-0.2677	0.0091	-0.0482	-0.0326	0.4253	0.0192	9.9012	1.1771	9.9013	1.2707	A+	A+	A-
ELA	8	712072	0	A-C	2	76055	0.7616	0.1367	0.0391	0.7564	0.0609	0.0063	0.0005	0.5262	-0.312	-0.2561	0.5288	-0.2666	-0.071	-0.0327	-0.8896	0.0218	-9.8992	0.8415	-9.8993	0.7274	B+	A+	A-
ELA	8	625570	0	A-K	2	76178	0.4922	0.2823	0.0503	0.1725	0.4896	0.0044	0.0008	0.4202	-0.1253	-0.2278	-0.2622	0.4227	-0.0788	-0.0288	0.5562	0.0193	8.0411	1.0611	9.5011	1.1068	A+	A+	A+
ELA	8	625575	0	A-K	2	76063	0.4405	0.2266	0.1142	0.215	0.4375	0.0063	0.0005	0.396	0.0359	-0.2873	-0.2786	0.3984	-0.0807	-0.0197	0.7029	0.0193	9.9011	1.0939	9.9012	1.1861	A-	A-	A+
ELA	8	625578	0	A-K	3	75781	0.5766	0.5706	0.1435	0.1391	0.1364	0.0097	0.0008	0.4491	0.4543	-0.242	-0.2336	-0.1408	-0.1012	-0.0342	0.1053	0.0194	-0.669	0.9948	-0.339	0.996	A-	A+	A+
ELA	8	712073	0	A-K	3	76161	0.7084	0.7045	0.0632	0.078	0.1487	0.0045	0.0009	0.4337	0.4374	-0.2998	-0.2861	-0.1244	-0.0664	-0.0367	-0.5553	0.0207	-4.729	0.9558	2.621	1.0438	A+	A+	A+
ELA	8	712075	0	A-K	2	76185	0.6659	0.1207	0.1104	0.1013	0.6625	0.0046	0.0006	0.5359	-0.2615	-0.2758	-0.2574	0.5379	-0.0634	-0.0317	-0.3571	0.0202	-9.8991	0.8741	-9.8992	0.8362	B+	A+	A+
ELA	8	712077	0	A-K	2	76235	0.6629	0.1312	0.0587	0.6599	0.1456	0.0036	0.0009	0.481	-0.2714	-0.2816	0.4837	-0.1883	-0.0645	-0.0339	-0.4429	0.0204	-0.819	0.9926	0.231	1.0034	A-	A+	A-
ELA	8	625574	0	A-V	2	76180	0.6362	0.2041	0.1044	0.6329	0.0533	0.0045	0.0008	0.4854	-0.2349	-0.2791	0.4893	-0.218	-0.0893	-0.0331	-0.1909	0.0198	-3.219	0.9733	-4.2191	0.9446	A-	A-	A-
ELA	8	661117	0	B-C	2	75939	0.3875	0.2254	0.209	0.3842	0.173	0.0077	0.0007	0.3119	-0.1196	-0.1617	0.3156	-0.0768	-0.0907	-0.0301	1.1165	0.0198	9.9012	1.1684	9.9013	1.3394	A-	A-	A+
ELA	8	661133	0	B-C	2	76123	0.754	0.7495	0.0651	0.1183	0.0612	0.0052	0.0008	0.5574	0.5609	-0.315	-0.2913	-0.2685	-0.0853	-0.0277	-0.945	0.022	-9.8991	0.8833	-9.8992	0.7567	A-	A-	A-
ELA	8	710655	0	B-C	2	76239	0.6712	0.0738	0.1414	0.1121	0.6682	0.0037	0.0008	0.5828	-0.2649	-0.3053	-0.3006	0.5843	-0.0628	-0.0295	-0.4342	0.0203	-9.8991	0.8817	-9.8992	0.8096	B-	A-	A-
ELA	8	710656	0	B-C	2	76351	0.6556	0.2187	0.6536	0.0764	0.0482	0.0023	0.0007	0.3945	-0.1847	0.3975	-0.2033	-0.2554	-0.0666	-0.0319	-0.2872	0.02	5.011	1.0437	9.9012	1.1947	A+	A-	A+
ELA	8	710657	0	B-C	2	76220	0.6258	0.28	0.0473	0.6228	0.0452	0.0037	0.001	0.4991	-0.2985	-0.2586	0.5017	-0.2349	-0.073	-0.0331	0.1609	0.0194	-7.0091	0.9471	-5.8891	0.9342	A-	A-	A+
ELA	8	710658	0	B-C	2	76177	0.6067	0.0901	0.1685	0.1326	0.6035	0.0045	0.0008	0.4464	-0.2202	-0.1873	-0.2386	0.4492	-0.0703	-0.0328	-0.3061	0.02	8.3111	1.0737	7.7111	1.1139	A-	A+	A-
ELA	8	661124	0	B-K	3	76105	0.4061	0.4036	0.0695	0.3616	0.1591	0.0057	0.0005	0.3158	0.3191	-0.2652	-0.0056	-0.2166	-0.0899	-0.0216	0.8627	0.0195	9.9011	1.1321	9.9012	1.2353	A-	A+	A+
ELA	8	661128	0	B-K	2	75860	0.5682	0.1648	0.1635	0.0994	0.5629	0.0088	0.0006	0.5774	-0.2283	-0.2717	-0.3095	0.5804	-0.1016	-0.024	0.1498	0.0194	-9.8991	0.8905	-9.8991	0.8694	A-	A-	A-
ELA	8	710664	0	B-K	2	76140	0.6084	0.6049	0.2239	0.0689	0.0966	0.0048	0.0009	0.4675	0.4696	-0.2409	-0.2065	-0.2422	-0.0661	-0.0239	-0.025	0.0196	-0.729	0.9941	-1.729	0.9788	B-	A-	A-
ELA	8	710665	0	B-V	2	76174	0.7766	0.0346	0.1452	0.7725	0.0423	0.0046	0.0007	0.3539	-0.2527	-0.1544	0.3587	-0.2204	-0.0684	-0.0296	-1.1197	0.0228	4.7511	1.0589	9.9013	1.2998	A-	A+	A+
ELA	8	710715	0	B-V	2	76199	0.713	0.7094	0.0941	0.1147	0.0768	0.0037	0.0013	0.5068	0.5089	-0.2713	-0.2441	-0.2596	-0.0718	-0.0167	-0.8216	0.0215	0.331	1.0034	-1.119	0.9784	A-	A+	A+
ELA	8	503808	0	D	3	76262	0.738	0.0846	0.735	0.116	0.0603	0.0031	0.0011	0.4534	-0.1668	0.4571	-0.3057	-0.2208	-0.0662	-0.0373	-0.8024	0.0215	-6.2791	0.9355	-3.3591	0.9369	A-	A+	A-
ELA	8	584100	0	D	2	76317	0.426	0.2056	0.4246	0.2033	0.1631	0.0021	0.0013	0.3662	-0.041	0.3673	-0.1394	-0.2862	-0.0394	-0.0363	0.9842	0.0196	9.9011	1.1175	9.9012	1.2227	A+	A-	A-
ELA	8	663373	0	D	3	76156	0.4593	0.3904	0.4568	0.0539	0.0934	0.0027	0.0029	0.3257	-0.1529	0.3284	-0.2055	-0.128	-0.0548	-0.0473	0.4802	0.0192	9.9012	1.1639	9.9012	1.2388	A-	A+	A+
ELA	8	663376	0	D	2	76328	0.3607	0.3596	0.1456	0.2896	0.202	0.0021	0.0012	0.4248	0.4255	-0.0853	-0.3241	-0.06	-0.0402	-0.0328	1.3236	0.0203	1.591	1.014	8.8711	1.1372	A+	A-	A-
ELA	8	663475	0	D	2	76393	0.5453	0.1583	0.5439	0.1695	0.1258	0.0013	0.0012	0.3149	-0.2195	0.3165	-0.1216	-0.0884	-0.0332	-0.0392	0.2473	0.0193	9.9012	1.1664	9.9012	1.24	A+	A-	A-
ELA	8	663488	0	D	2	76254	0.3574	0.3559	0.1973	0.2592	0.1834	0.0031	0.0011	0.2926	0.2947	-0.1124	-0.1005	-0.1224	-0.0676	-0.0361	1.2491	0.0201	9.9012	1.1557	9.9014	1.3691	A+	A-	A-
ELA	8	714523	0	D	2	76217	0.3896	0.3878	0.1681	0.2561	0.1833	0.0036	0.0012	0.3392	0.341	-0.1794	-0.036	-0.2035	-0.0604	-0.0297	0.9148	0.0195	9.9011	1.0978	9.9012	1.1866	A+	A-	A-
ELA	8	714524	0	D	2	76229	0.4419	0.0982	0.2088	0.2486	0.4399	0.0018	0.0028	0.3563	-0.1878	-0.2379	-0.0484	0.3582	-0.0328	-0.0551	0.4015	0.0192	9.9011	1.1084	9.9012	1.1617	A+	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	8	717698	0	D	2	76289	0.7907	0.0749	0.0594	0.7877	0.0742	0.0028	0.0011	0.5231	-0.2967	-0.2562	0.5255	-0.275	-0.0569	-0.0355	-0.9664	0.0221	-9.8992	0.79	-9.8994	0.6488	A+	B-	A-
ELA	8	745574	1	A-C	2	8594	0.3189	0.4432	0.0731	0.1608	0.3171	0.0052	0.0005	0.2427	-0.011	-0.2134	-0.1313	0.2445	-0.0571	-0.0194	1.3122	0.0624	5.7012	1.1714	6.7714	1.3686	A+	A-	A-
ELA	8	745581	1	A-C	2	8633	0.8813	0.8802	0.0476	0.025	0.046	0.0007	0.0005	0.4198	0.421	-0.2712	-0.1995	-0.2219	-0.0157	-0.0414	-1.6583	0.0745	-5.3392	0.7883	-5.8594	0.5537	A+	A+	A-
ELA	8	745582	1	A-C	2	8617	0.476	0.1476	0.0805	0.2942	0.4746	0.0022	0.0008	0.2118	-0.0789	-0.2371	-0.0238	0.2145	-0.0601	-0.0328	0.5065	0.0587	9.9013	1.2707	9.7714	1.3803	A+	A+	A-
ELA	8	745583	1	A-C	2	8617	0.5886	0.0439	0.5868	0.0676	0.2987	0.0022	0.0008	0.2404	-0.2387	0.2423	-0.2611	-0.0053	-0.0386	-0.0228	-0.1686	0.0594	7.0612	1.1872	7.1813	1.3121	A-	A-	A-
ELA	8	745576	1	A-K	2	8621	0.3765	0.1729	0.2215	0.3756	0.2276	0.002	0.0006	0.2076	-0.18	-0.1178	0.2089	0.0435	-0.0393	-0.0271	0.9582	0.0602	9.9013	1.292	9.9015	1.5274	A-	A-	A-
ELA	8	745577	1	A-K	2	8587	0.632	0.2112	0.0536	0.6279	0.1009	0.0058	0.0007	0.4142	-0.1434	-0.2737	0.4187	-0.2498	-0.0823	-0.0292	-0.2123	0.0595	-0.239	0.9937	-0.769	0.9685	A+	A-	A-
ELA	8	745579	1	A-K	2	8608	0.6151	0.17	0.6126	0.0812	0.1321	0.003	0.001	0.4979	-0.2253	0.4997	-0.2827	-0.229	-0.055	-0.0314	-0.0544	0.059	-4.6791	0.8885	-4.2392	0.8479	A-	A+	A+
ELA	8	745573	1	A-V	2	8627	0.3481	0.3474	0.0656	0.5439	0.0412	0.0015	0.0003	0.2024	0.2037	-0.1494	-0.0413	-0.1862	-0.0528	-0.0213	1.0005	0.0604	9.1213	1.2582	9.7315	1.4581	A-	A-	A-
ELA	8	746433	1	D	2	17024	0.4468	0.4443	0.2359	0.1619	0.1524	0.0048	0.0006	0.3479	0.3503	-0.2071	-0.1174	-0.1044	-0.0689	-0.0226	0.7652	0.0415	6.1611	1.1076	7.8812	1.2109	A-	A-	A-
ELA	8	746443	1	D	2	8609	0.4602	0.1199	0.2481	0.1697	0.4584	0.0029	0.001	0.3956	-0.2733	-0.1244	-0.1387	0.3964	-0.0365	-0.0299	0.5844	0.0589	1.931	1.0478	2.6411	1.0958	A-	A-	A-
ELA	8	747128	1	D	2	8593	0.6062	0.139	0.1209	0.6027	0.1317	0.0053	0.0005	0.4414	-0.2124	-0.1921	0.4427	-0.2256	-0.0536	-0.0172	-0.2283	0.0596	1.941	1.0495	2.3711	1.0991	A-	A-	A-
ELA	8	745839	2	A-C	2	8474	0.6343	0.0688	0.6326	0.2401	0.0558	0.0021	0.0006	0.2748	-0.1872	0.2769	-0.068	-0.237	-0.0391	-0.0359	-0.2629	0.0593	4.2911	1.1115	5.9812	1.2452	A-	A-	A-
ELA	8	745840	2	A-C	2	8457	0.3032	0.3018	0.4178	0.1412	0.1345	0.0036	0.0011	0.2221	0.2229	-0.0155	-0.0454	-0.2228	-0.0225	-0.0457	1.4384	0.0615	5.0911	1.145	9.1715	1.4874	A-	A+	A+
ELA	8	745833	2	A-K	2	8469	0.4544	0.1755	0.4529	0.2889	0.0794	0.0022	0.0011	0.1215	-0.0553	0.123	0.0272	-0.1862	-0.039	-0.0099	0.6496	0.0574	9.9013	1.2512	9.9014	1.3568	A-	A+	A+
ELA	8	745835	2	A-K	2	8432	0.7179	0.0632	0.1595	0.7124	0.0573	0.0071	0.0006	0.4615	-0.2657	-0.2173	0.4608	-0.2612	-0.0357	-0.0288	-0.6811	0.0625	-4.3491	0.877	-4.7292	0.7842	A+	A+	A-
ELA	8	745837	2	A-K	2	8481	0.6361	0.6349	0.1463	0.1017	0.1152	0.0015	0.0004	0.499	0.4996	-0.2613	-0.1823	-0.2868	-0.0272	-0.0231	-0.2826	0.0594	-3.3291	0.9177	-3.0791	0.8854	A-	A-	A-
ELA	8	745829	2	A-V	2	8493	0.4554	0.3675	0.0673	0.1095	0.4552	0.0004	0.0001	0.4519	-0.2867	-0.1965	-0.1202	0.4516	0	0.0129	0.6718	0.0574	-1.809	0.9608	-1.8691	0.9426	B-	A-	A-
ELA	8	745830	2	A-V	2	8448	0.6088	0.077	0.1858	0.1262	0.6053	0.0049	0.0008	0.4439	-0.2375	-0.1845	-0.2366	0.4451	-0.0498	-0.0167	-0.1218	0.0586	-2.079	0.9507	-1.8891	0.9344	C-	A-	A-
ELA	8	745831	2	A-V	2	8474	0.559	0.3438	0.0438	0.5575	0.0523	0.0016	0.0011	0.3185	-0.1308	-0.2248	0.3204	-0.2156	-0.0371	-0.0468	0.104	0.0577	3.4011	1.0791	4.1811	1.139	A-	A-	A-
ELA	8	746434	2	D	2	16864	0.7326	0.106	0.0853	0.728	0.0744	0.0052	0.001	0.5127	-0.2937	-0.2823	0.5131	-0.2089	-0.0496	-0.0202	-0.8671	0.0461	-5.2591	0.8833	-4.9292	0.805	A+	A-	A-
ELA	8	746444	2	D	2	8455	0.3572	0.2301	0.3554	0.2261	0.1835	0.0041	0.0008	0.0632	-0.0197	0.0651	-0.0639	0.0174	-0.0343	-0.0249	1.1236	0.0592	9.9013	1.3196	9.9015	1.53	A+	A+	A+
ELA	8	747129	2	D	2	8455	0.3923	0.3904	0.1299	0.1217	0.3531	0.0042	0.0007	0.2837	0.2841	-0.3142	-0.1507	0.0381	-0.0204	-0.021	0.9265	0.0582	3.8311	1.0891	4.7012	1.1703	A+	A+	A+
ELA	8	747155	3	A-C	2	8501	0.6129	0.0674	0.6107	0.1219	0.1965	0.0022	0.0013	0.4471	-0.2566	0.4476	-0.3077	-0.1276	-0.0305	-0.0311	-0.0993	0.0587	-2.2191	0.9477	-1.349	0.9506	A+	A+	A-
ELA	8	747156	3	A-C	2	8524	0.7709	0.7702	0.0592	0.0622	0.1075	0.0006	0.0002	0.365	0.365	-0.2403	-0.253	-0.114	-0.0107	-0.0093	-0.9576	0.066	-0.669	0.9773	0.011	0.9994	A+	A+	A-
ELA	8	747157	3	A-C	2	8514	0.4934	0.2998	0.1041	0.1016	0.4924	0.0014	0.0006	0.3738	-0.1441	-0.2196	-0.1718	0.3748	-0.0359	-0.0427	0.5559	0.0575	2.8211	1.0631	2.5411	1.081	A-	A-	A-
ELA	8	747158	3	A-K	2	8510	0.5112	0.2979	0.5099	0.1194	0.0703	0.0013	0.0012	0.2105	0.0655	0.2127	-0.2418	-0.2147	-0.0427	-0.0417	0.3978	0.0575	9.0712	1.2125	9.3413	1.3199	A+	A-	A+
ELA	8	747161	3	A-K	2	8493	0.693	0.0709	0.0515	0.69	0.1832	0.0035	0.0009	0.2433	-0.2873	-0.2671	0.2453	0.057	-0.0315	-0.0283	-0.4982	0.0612	4.4011	1.125	7.6514	1.3964	B+	A+	A+
ELA	8	747324	3	A-K	2	8502	0.5714	0.1472	0.0927	0.1872	0.5695	0.0019	0.0015	0.2375	-0.1209	-0.2324	-0.0136	0.2403	-0.0428	-0.0404	0.129	0.0579	7.4812	1.1788	8.0613	1.2918	A+	A-	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	8	747163	3	A-V	2	8515	0.7274	0.0806	0.1286	0.7261	0.0628	0.0015	0.0004	0.3475	-0.2038	-0.2579	0.3499	-0.0486	-0.0486	-0.0291	-0.7434	0.0635	2.7311	1.085	3.5312	1.2013	A+	A-	A-
ELA	8	747164	3	A-V	2	8516	0.5834	0.5823	0.2696	0.1119	0.0343	0.0013	0.0005	0.1369	0.1386	0.0394	-0.1473	-0.2064	-0.0297	-0.0359	0.0248	0.0582	9.9013	1.2807	9.9014	1.4228	A-	A+	A+
ELA	8	717837	3	D	1	8492	0.7452	0.0823	0.7418	0.0611	0.1103	0.0039	0.0007	0.5277	-0.2715	0.5289	-0.2834	-0.2718	-0.0486	-0.0328	-0.956	0.0659	-5.8792	0.8154	-6.1193	0.6689	B+	A-	A-
ELA	8	746435	3	D	2	16951	0.2213	0.1876	0.2203	0.2712	0.316	0.0039	0.001	0.2058	-0.234	0.2071	-0.0175	0.038	-0.0529	-0.0349	1.9351	0.0473	2.4511	1.0611	8.6614	1.4403	A+	A-	A-
ELA	8	747120	3	D	2	8479	0.4173	0.4147	0.2643	0.1654	0.1495	0.0045	0.0016	0.2272	0.2301	-0.0789	-0.1426	-0.0562	-0.053	-0.0505	0.8535	0.0582	7.4912	1.1807	8.3513	1.308	A+	A-	A-
ELA	8	746409	4	A-C	2	8491	0.6225	0.1755	0.6217	0.119	0.0825	0.0011	0.0002	0.3178	-0.2482	0.3173	-0.1508	-0.0383	0.0011	-0.0096	-0.1662	0.0591	3.5711	1.0892	4.5312	1.193	A+	A+	A-
ELA	8	746419	4	A-C	2	8476	0.3782	0.0746	0.3771	0.2357	0.3096	0.0022	0.0008	0.0586	-0.1853	0.0605	-0.0735	0.1151	-0.0414	-0.0239	1.0468	0.0588	9.9013	1.3207	9.9015	1.4837	A-	A-	A-
ELA	8	746420	4	A-C	2	8463	0.5578	0.5553	0.298	0.1175	0.0246	0.0034	0.0012	0.1979	0.2012	-0.0368	-0.1582	-0.1807	-0.0524	-0.0349	0.1626	0.0578	9.5312	1.2276	9.4814	1.3633	A-	A-	A-
ELA	8	746412	4	A-K	2	8445	0.7123	0.079	0.0686	0.1382	0.7075	0.0059	0.0008	0.4535	-0.2755	-0.2795	-0.1665	0.4538	-0.0449	-0.0192	-0.644	0.0627	-3.1991	0.9084	-1.7491	0.9088	A+	A+	A-
ELA	8	746413	4	A-K	2	8470	0.5129	0.177	0.1601	0.5109	0.1482	0.0034	0.0004	0.4521	-0.204	-0.1915	0.4538	-0.2103	-0.0595	-0.0292	0.4829	0.0574	-1.599	0.9658	-0.619	0.9798	A+	A-	A-
ELA	8	746415	4	A-K	2	8445	0.5917	0.1417	0.1463	0.5877	0.1175	0.0061	0.0006	0.4434	-0.2403	-0.0724	0.4445	-0.3262	-0.0471	-0.0302	0.0299	0.0582	-0.759	0.9825	-0.799	0.9709	A-	A-	A-
ELA	8	746410	4	A-V	2	8489	0.6328	0.0301	0.2574	0.0792	0.6319	0.0007	0.0008	0.2493	-0.2101	-0.0299	-0.2606	0.2507	-0.0313	-0.0264	-0.2656	0.0597	6.9412	1.1847	7.9614	1.3769	A+	A-	A-
ELA	8	746411	4	A-V	2	8479	0.7504	0.7484	0.0709	0.0749	0.103	0.0019	0.0008	0.3463	0.3494	-0.2164	-0.1455	-0.1793	-0.0541	-0.0319	-0.8811	0.0653	-0.219	0.9926	2.8012	1.1803	A-	A-	A-
ELA	8	718078	4	D	2	8457	0.3985	0.3964	0.3903	0.092	0.1161	0.0046	0.0007	0.3171	0.319	-0.0396	-0.2122	-0.2212	-0.0519	-0.0386	0.7664	0.0578	3.0411	1.0688	4.2611	1.1488	A+	A+	A-
ELA	8	746436	4	D	2	16897	0.36	0.2162	0.1871	0.3575	0.2323	0.0052	0.0016	0.2284	-0.0754	-0.0973	0.2315	-0.084	-0.0604	-0.0525	1.1286	0.042	8.6012	1.1555	9.9014	1.3646	A-	A-	A+
ELA	8	747121	4	D	2	8465	0.9181	0.9141	0.0387	0.026	0.0168	0.0026	0.0018	0.3394	0.3442	-0.2103	-0.1794	-0.1789	-0.0378	-0.057	-2.4292	0.1008	-3.1992	0.7754	-3.7494	0.5549	A+	A+	A+
ELA	8	737185	5	B-C	2	8450	0.7209	0.0684	0.1732	0.7188	0.0366	0.0027	0.0002	0.4091	-0.2195	-0.2229	0.4109	-0.2257	-0.0462	-0.0128	-0.7117	0.0639	-2.2891	0.9312	-2.1191	0.8834	A-	A-	A-
ELA	8	737189	5	B-C	2	8450	0.4451	0.24	0.4438	0.1524	0.1608	0.0019	0.0011	0.2287	-0.1028	0.2296	-0.0795	-0.1083	-0.0223	-0.026	0.7632	0.058	8.7612	1.2126	9.8114	1.3665	A-	A-	A+
ELA	8	737187	5	B-K	2	8442	0.6874	0.6847	0.0599	0.0983	0.1532	0.0025	0.0014	0.5359	0.5368	-0.2593	-0.3018	-0.2626	-0.04	-0.0385	-0.4784	0.0617	-4.5791	0.8776	-4.9292	0.7755	A-	A-	A-
ELA	8	737190	5	B-K	3	8453	0.4049	0.3973	0.1332	0.4039	0.063	0.0013	0.0013	0.2444	-0.017	-0.173	0.2456	-0.21	-0.0426	-0.0231	1.0288	0.0589	8.4212	1.215	9.9014	1.4157	A-	A-	A+
ELA	8	737191	5	B-K	2	8423	0.4608	0.4579	0.0839	0.2999	0.1521	0.0059	0.0002	0.0957	0.0987	-0.25	0.1963	-0.1833	-0.0467	-0.0264	0.682	0.0579	9.9014	1.4162	9.9016	1.6441	A-	A+	A-
ELA	8	737218	5	B-K	2	8448	0.7348	0.0818	0.085	0.0976	0.7325	0.0027	0.0005	0.5082	-0.2779	-0.2352	-0.2723	0.5097	-0.0488	-0.0243	-0.7907	0.0647	-4.3191	0.8686	-3.2392	0.8183	A-	A-	A-
ELA	8	737192	5	B-V	2	8463	0.4969	0.2055	0.4962	0.2168	0.0801	0.0012	0.0002	0.3225	-0.1621	0.323	-0.1317	-0.1499	-0.0239	-0.0144	0.4209	0.0578	4.3411	1.1005	3.8511	1.1318	C-	A-	A-
ELA	8	738317	5	B-V	2	8467	0.5777	0.1057	0.1235	0.1927	0.5771	0.0007	0.0002	0.3682	-0.2304	-0.11	-0.1877	0.3691	-0.036	-0.02	0.0658	0.0585	3.2711	1.0788	1.7011	1.0629	B-	A+	A-
ELA	8	746437	5	D	2	16810	0.7183	0.0695	0.1776	0.7137	0.0327	0.0051	0.0014	0.4288	-0.2655	-0.2151	0.4312	-0.2251	-0.0531	-0.0367	-0.6802	0.0449	-2.5391	0.9463	-3.7591	0.8604	A+	A-	A-
ELA	8	747122	5	D	2	8437	0.414	0.2114	0.1096	0.2623	0.4122	0.0032	0.0013	0.3274	-0.1372	-0.1585	-0.1192	0.329	-0.0595	-0.0163	0.8468	0.0582	4.9911	1.1192	5.4212	1.1976	A+	A-	A-
ELA	8	745361	6	B-C	2	8448	0.5009	0.0836	0.4995	0.3688	0.0452	0.0022	0.0007	0.3348	-0.3046	0.3363	-0.0677	-0.2327	-0.0413	-0.0339	0.4199	0.0579	4.4411	1.1023	5.5012	1.2001	A+	A-	A-
ELA	8	745362	6	B-C	2	8463	0.3797	0.3792	0.3032	0.1011	0.2153	0.0011	0.0001	0.237	0.2369	-0.1458	-0.1301	-0.0204	-0.0107	0.0001	1.0746	0.0591	6.8712	1.1743	9.0014	1.3923	A-	A-	A-
ELA	8	745363	6	B-C	2	8459	0.8046	0.0515	0.059	0.0846	0.8033	0.0014	0.0002	0.3949	-0.2457	-0.2057	-0.1905	0.3969	-0.044	-0.0246	-1.2954	0.072	-3.2791	0.8711	-1.2491	0.8999	A+	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	8	745364	6	B-C	2	8438	0.6929	0.0669	0.0839	0.6901	0.155	0.004	0.0001	0.4997	-0.2786	-0.2661	0.5001	-0.235	-0.0422	-0.0168	-0.5355	0.0623	-3.6891	0.8969	-3.5192	0.8252	A-	A+	A+
ELA	8	745367	6	B-K	2	8448	0.6504	0.6485	0.2703	0.05	0.0282	0.0022	0.0007	0.3954	0.3978	-0.2124	-0.2469	-0.2314	-0.0483	-0.0426	-0.329	0.0607	0.821	1.0219	1.9811	1.0945	A+	A-	A-
ELA	8	745369	6	B-K	2	8415	0.3941	0.1262	0.2255	0.2501	0.3914	0.006	0.0008	0.4004	-0.1584	-0.1864	-0.1393	0.4018	-0.0664	-0.0062	0.9538	0.0586	-1.309	0.9695	1.181	1.0437	A-	A+	A+
ELA	8	745371	6	B-V	2	8451	0.71	0.2054	0.0428	0.7081	0.0411	0.0015	0.0011	0.3738	-0.1891	-0.2604	0.376	-0.1969	-0.0379	-0.0385	-0.6871	0.0638	-1.459	0.9552	-0.329	0.9799	A+	A-	A-
ELA	8	745372	6	B-V	2	8444	0.8543	0.0402	0.8514	0.0541	0.0509	0.0026	0.0008	0.3879	-0.1784	0.3928	-0.2417	-0.2082	-0.0617	-0.039	-1.7075	0.0801	-1.9391	0.904	-1.6492	0.8394	A+	A+	A-
ELA	8	746438	6	D	1	8402	0.5176	0.5133	0.1232	0.2162	0.1389	0.0067	0.0017	0.4202	0.4233	-0.2571	-0.1365	-0.1823	-0.0718	-0.0482	0.3995	0.0579	-1.609	0.9642	-1.349	0.9538	A+	A-	A-
ELA	8	747124	6	D	2	8429	0.4042	0.1295	0.1438	0.4021	0.3195	0.0037	0.0015	0.2607	-0.1116	-0.1926	0.2633	-0.041	-0.061	-0.0323	0.9167	0.0585	6.3912	1.155	6.6113	1.2605	A+	A-	A-
ELA	8	743396	7	B-C	2	8425	0.4974	0.4929	0.2839	0.115	0.099	0.0087	0.0005	0.2878	0.2898	0.0493	-0.2825	-0.2403	-0.0493	-0.0292	0.5098	0.0577	6.7412	1.1572	6.7712	1.2331	A-	A-	A-
ELA	8	743397	7	B-C	2	8475	0.5051	0.3456	0.5035	0.0604	0.0871	0.0022	0.0011	0.4023	-0.1512	0.4034	-0.2556	-0.2338	-0.041	-0.0318	0.4393	0.0577	0.851	1.0188	1.081	1.0346	A+	A-	A-
ELA	8	743398	7	B-C	2	8490	0.371	0.245	0.3269	0.3705	0.0561	0.0013	0.0002	0.1282	0.0704	-0.1019	0.1296	-0.1861	-0.0513	-0.025	1.1233	0.0593	9.9013	1.2731	9.9016	1.559	A+	A-	A-
ELA	8	743399	7	B-C	2	8477	0.6289	0.1252	0.114	0.627	0.1308	0.0021	0.0009	0.4912	-0.2395	-0.1948	0.4921	-0.2799	-0.0395	-0.0196	-0.1512	0.0594	-4.4691	0.8918	-4.5192	0.8356	A+	A+	A-
ELA	8	743400	7	B-K	2	8451	0.6864	0.1205	0.0922	0.0989	0.6822	0.0056	0.0005	0.5115	-0.2207	-0.2729	-0.2814	0.5103	-0.0362	-0.0046	-0.5018	0.0618	-5.1391	0.8606	-4.0292	0.822	A+	A+	A-
ELA	8	743403	7	B-K	2	8464	0.8351	0.8312	0.0773	0.048	0.0389	0.0029	0.0016	0.4829	0.4848	-0.2899	-0.2476	-0.2438	-0.0534	-0.0295	-1.4759	0.0748	-6.4893	0.7377	-6.2994	0.5581	A+	A+	A-
ELA	8	743401	7	B-V	2	8478	0.6943	0.0647	0.6922	0.1634	0.0768	0.002	0.0009	0.3995	-0.2324	0.4022	-0.1667	-0.238	-0.0456	-0.0469	-0.6086	0.0628	1.8211	1.0546	0.761	1.0377	C-	B-	B-
ELA	8	743404	7	B-V	2	8490	0.278	0.2343	0.1969	0.2898	0.2775	0.0013	0.0002	0.3024	-0.328	-0.1561	0.1463	0.3025	-0.0193	-0.0084	1.5813	0.0626	2.9011	1.0855	4.7113	1.2642	A-	A+	A-
ELA	8	746439	7	D	1	8466	0.2329	0.1955	0.2319	0.0931	0.4751	0.0038	0.0006	0.3321	-0.2893	0.333	-0.0781	0.0023	-0.0561	-0.0341	1.8177	0.0651	-2.2491	0.9289	3.7312	1.2395	A-	A-	A-
ELA	8	747125	7	D	2	8468	0.3213	0.204	0.32	0.2187	0.2531	0.0033	0.0008	0.187	-0.1347	0.188	-0.0314	-0.0413	-0.0307	-0.0257	1.3128	0.0604	6.1712	1.1675	7.2714	1.3568	A-	A-	A-
ELA	8	744846	8	B-C	1	8487	0.6166	0.6148	0.102	0.2224	0.0579	0.0019	0.0011	0.4721	0.4733	-0.2369	-0.2168	-0.2807	-0.0388	-0.0384	-0.0636	0.059	-1.029	0.9748	-0.289	0.9888	A-	A+	A-
ELA	8	744855	8	B-C	2	8495	0.3737	0.1622	0.373	0.213	0.2498	0.0018	0.0002	0.3235	-0.1703	0.3239	-0.3048	0.0742	-0.0265	-0.0044	1.1108	0.0593	3.8211	1.0953	7.4513	1.3315	B+	A-	A-
ELA	8	744856	8	B-C	2	8480	0.5801	0.0704	0.2722	0.5779	0.0758	0.0021	0.0016	0.4432	-0.256	-0.2189	0.4459	-0.1984	-0.0622	-0.0484	-0.0175	0.0588	-1.139	0.9726	-0.309	0.9882	A-	A-	A-
ELA	8	744857	8	B-C	2	8486	0.3957	0.256	0.1854	0.1611	0.3945	0.0019	0.0012	0.0649	-0.0092	-0.1106	0.0471	0.0673	-0.0431	-0.0388	0.9803	0.0587	9.9013	1.3239	9.9015	1.4646	A+	A+	A+
ELA	8	744849	8	B-K	2	8491	0.8065	0.0589	0.8045	0.0885	0.0457	0.0021	0.0004	0.462	-0.2602	0.4658	-0.2396	-0.2474	-0.0757	-0.0166	-1.2559	0.0706	-4.1892	0.8436	-4.8293	0.6822	A+	A+	A-
ELA	8	744852	8	B-K	2	8477	0.4701	0.1537	0.1344	0.2397	0.4682	0.0036	0.0005	0.2743	-0.0778	-0.2248	-0.0711	0.2753	-0.0284	-0.028	0.5999	0.0578	5.9911	1.1395	6.6112	1.2354	A+	A+	A+
ELA	8	744853	8	B-K	2	8480	0.3329	0.3877	0.1813	0.3316	0.0956	0.0027	0.0011	0.2183	0.0029	-0.0557	0.2198	-0.2717	-0.059	-0.0166	1.3423	0.0608	7.3712	1.2058	7.2114	1.3695	A+	A-	A-
ELA	8	744847	8	B-V	1	8500	0.3287	0.3282	0.0632	0.3804	0.2267	0.0006	0.0008	0.1916	0.192	-0.1772	0.0293	-0.144	-0.0244	-0.0138	1.2236	0.06	6.3712	1.1683	8.2614	1.3983	A+	A-	A-
ELA	8	746440	8	D	1	8472	0.8107	0.0586	0.0801	0.0497	0.8069	0.0034	0.0013	0.4259	-0.2225	-0.2281	-0.2349	0.4286	-0.0423	-0.0411	-1.2466	0.0705	-2.5291	0.9038	-2.4892	0.826	A+	A-	A+
ELA	8	747126	8	D	2	8462	0.7887	0.0818	0.0665	0.0618	0.7841	0.0036	0.0022	0.4932	-0.2761	-0.2456	-0.2563	0.4969	-0.0522	-0.0583	-1.2063	0.0698	-4.6192	0.8326	-5.5293	0.6514	A+	A+	A+
ELA	8	745376	9	B-C	2	8421	0.6363	0.1369	0.068	0.1578	0.6345	0.002	0.0008	0.3153	-0.2384	-0.1788	-0.0637	0.3169	-0.0325	-0.0344	-0.252	0.0601	2.5011	1.0656	2.6211	1.1138	A-	A-	A-
ELA	8	745377	9	B-K	3	8387	0.6223	0.1198	0.2152	0.618	0.0401	0.0063	0.0006	0.3521	-0.1687	-0.1693	0.3538	-0.22	-0.0434	-0.0406	-0.1128	0.0593	2.2911	1.0574	2.8711	1.1161	A-	A+	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	8	745378	9	B-K	2	8401	0.5351	0.5323	0.1061	0.041	0.3155	0.0036	0.0017	0.2401	0.2428	-0.1856	-0.1851	-0.0494	-0.047	-0.0372	0.3157	0.0579	8.4812	1.2041	7.8213	1.2817	A+	A-	A-
ELA	8	745380	9	B-K	2	8424	0.5878	0.5864	0.0587	0.0575	0.2948	0.0018	0.0007	0.3513	0.3531	-0.2134	-0.2107	-0.1576	-0.0448	-0.0348	0.0606	0.0585	3.9911	1.097	5.0212	1.1915	A+	A+	A+
ELA	8	745381	9	B-K	2	8391	0.7276	0.1544	0.7229	0.0757	0.0406	0.0062	0.0002	0.4947	-0.3159	0.4965	-0.2488	-0.1864	-0.0624	-0.038	-0.7739	0.0645	-3.6391	0.8889	-4.1192	0.7805	A-	A+	A+
ELA	8	745375	9	B-V	2	8424	0.8196	0.0442	0.0365	0.8175	0.0993	0.0019	0.0006	0.3891	-0.2592	-0.1938	0.3917	-0.1972	-0.0417	-0.0375	-1.3887	0.0734	-1.4791	0.9375	-1.5791	0.8733	A-	A-	A-
ELA	8	745383	9	B-V	2	8424	0.6067	0.2213	0.6052	0.0819	0.089	0.0015	0.0009	0.0993	0.1962	0.1018	-0.2821	-0.1807	-0.0225	-0.0483	-0.0646	0.059	9.9013	1.3351	9.9016	1.5519	B+	A-	A-
ELA	8	745384	9	B-V	2	8432	0.5255	0.0738	0.1828	0.2172	0.5247	0.0013	0.0002	0.1768	-0.1017	-0.1963	0.0356	0.1772	-0.0113	-0.0204	0.3791	0.0578	9.9013	1.3214	9.9015	1.4593	A+	A+	A+
ELA	8	746441	9	D	2	8403	0.5897	0.1435	0.1106	0.5867	0.1542	0.0043	0.0007	0.4478	-0.2756	-0.1728	0.4503	-0.1816	-0.0676	-0.0357	-0.0254	0.0589	-0.279	0.9932	-0.759	0.9715	A+	B-	A-
ELA	8	747127	9	D	1	8408	0.628	0.0854	0.1937	0.6252	0.0913	0.0028	0.0015	0.4009	-0.2161	-0.1595	0.4037	-0.2338	-0.0513	-0.0489	-0.308	0.0604	0.011	1.0001	-1.2591	0.9456	A+	B-	A-
MATH	3	408674	0	A-F	1	85323	0.4869	0.0712	0.4786	0.1447	0.2884	0.0157	0.0014	0.5463	-0.2054	0.548	-0.2658	-0.2526	-0.0896	-0.0501	0.6468	0.0229	-9.6491	0.911	-7.6991	0.8947	A-	A-	A+
MATH	3	479164	0	A-F	1	78359	0.5578	0.5035	0.1618	0.0869	0.1505	0.0121	0.0852	0.3555	0.296	-0.2255	-0.2133	-0.0778	-0.0635	0.1071	0.5115	0.0229	9.9012	1.2122	9.9013	1.2932	A-	A+	A+
MATH	3	495184	0	A-F	2	85372	0.3672	0.2545	0.2039	0.1639	0.3611	0.0157	0.0008	0.3733	-0.0603	-0.1277	-0.2455	0.377	-0.0951	-0.0238	1.3919	0.024	9.9011	1.1281	9.9013	1.2936	A+	A+	A+
MATH	3	495193	0	A-F	1	85694	0.3893	0.3844	0.2081	0.1825	0.2122	0.0119	0.0009	0.4658	0.4676	-0.2064	-0.236	-0.1048	-0.0811	-0.0291	1.2718	0.0237	-0.869	0.9909	7.9111	1.1405	A-	A+	A+
MATH	3	657711	0	A-F	2	85859	0.4161	0.1514	0.2152	0.2111	0.4115	0.0099	0.001	0.4757	-0.2662	-0.0848	-0.237	0.477	-0.0699	-0.0279	0.9577	0.0232	-0.079	0.9992	1.261	1.0188	A+	A-	A-
MATH	3	709878	0	A-F	2	85203	0.3986	0.3763	0.1029	0.3912	0.1112	0.0178	0.0007	0.4289	-0.1697	-0.188	0.4303	-0.1909	-0.0762	-0.0239	1.0835	0.0234	2.351	1.0239	7.7011	1.1251	A-	A+	A+
MATH	3	711343	0	A-F	1	84629	0.4322	0.1365	0.1691	0.2479	0.4214	0.0209	0.0041	0.5052	-0.1669	-0.2484	-0.1966	0.5055	-0.0811	-0.0417	0.8453	0.0231	-5.019	0.9521	-3.159	0.9548	A-	A-	A+
MATH	3	493220	0	A-T	1	85393	0.6068	0.1437	0.0663	0.5969	0.1769	0.0153	0.001	0.6194	-0.2898	-0.2209	0.6189	-0.3565	-0.0831	-0.0248	-0.0415	0.0233	-9.8992	0.8384	-9.8992	0.7857	A-	A-	A-
MATH	3	493231	0	A-T	1	85026	0.4628	0.1722	0.2964	0.4533	0.0576	0.0201	0.0004	0.5699	-0.1485	-0.4307	0.5675	-0.0857	-0.0664	-0.024	0.746	0.023	-9.8991	0.8879	-9.8991	0.8613	A-	A-	A-
MATH	3	617235	0	A-T	2	85106	0.4645	0.2173	0.141	0.4554	0.1668	0.0185	0.0011	0.4591	-0.2204	-0.146	0.4623	-0.2002	-0.0984	-0.0203	1.0283	0.0233	5.6811	1.0577	8.1211	1.1294	A+	A+	A+
MATH	3	621395	0	A-T	1	85956	0.7399	0.1197	0.7327	0.0694	0.0685	0.0094	0.0004	0.4742	-0.2187	0.4764	-0.2626	-0.2615	-0.0693	-0.0199	-0.5473	0.0246	-9.8991	0.8781	-8.4492	0.8195	A-	A+	A+
MATH	3	394378	0	B-O	2	85942	0.6743	0.047	0.0615	0.6676	0.214	0.0096	0.0004	0.605	-0.2395	-0.1775	0.6051	-0.4497	-0.0695	-0.0256	-0.2527	0.0237	-9.8992	0.7803	-9.8993	0.6824	A-	A+	A-
MATH	3	495186	0	B-O	2	83837	0.5846	0.14	0.0852	0.176	0.5646	0.0328	0.0014	0.4495	-0.131	-0.2059	-0.2596	0.46	-0.1408	-0.0308	0.3243	0.0229	1.511	1.0144	0.101	1.0014	A+	A+	A+
MATH	3	495214	0	B-O	2	85067	0.4348	0.4261	0.1943	0.2414	0.1181	0.0194	0.0006	0.2878	0.2936	-0.1284	-0.1315	-0.0771	-0.0923	-0.0194	0.7198	0.023	9.9012	1.223	9.9013	1.2973	A-	A+	A+
MATH	3	579676	0	B-O	2	81012	0.3313	0.2117	0.225	0.1874	0.3092	0.0252	0.0415	0.4302	-0.1891	-0.1377	-0.1427	0.4107	-0.0804	0.0663	1.4391	0.0242	-1.679	0.9815	4.8111	1.0917	A-	A+	A+
MATH	3	659903	0	B-O	2	85285	0.5642	0.1142	0.5543	0.1236	0.1904	0.0168	0.0008	0.5739	-0.2112	0.5742	-0.2519	-0.3153	-0.0871	-0.0127	0.3136	0.0229	-9.8991	0.8683	-9.8992	0.8268	A-	A+	A+
MATH	3	659904	0	B-O	1	85685	0.5982	0.0864	0.1919	0.1183	0.5905	0.0123	0.0006	0.5948	-0.348	-0.2928	-0.2195	0.5945	-0.0703	-0.0264	0.3602	0.0229	-9.8992	0.8469	-9.8992	0.7978	A-	A+	A+
MATH	3	659917	0	B-O	2	84682	0.372	0.2729	0.1879	0.3629	0.1518	0.0236	0.0009	0.3417	-0.1111	-0.1849	0.3452	-0.0846	-0.0893	-0.0106	1.2417	0.0237	9.9011	1.1474	9.9013	1.2729	A+	A+	A-
MATH	3	711346	0	B-O	1	84673	0.7028	0.6855	0.108	0.0865	0.0954	0.0236	0.001	0.471	0.4729	-0.2298	-0.2555	-0.2107	-0.0894	-0.0305	-0.4039	0.0241	-4.8491	0.9488	-3.5091	0.9281	A-	A-	A-
MATH	3	711414	0	B-O	1	85070	0.7224	0.0667	0.0454	0.16	0.7079	0.0196	0.0004	0.5555	-0.1288	-0.2181	-0.4431	0.5534	-0.0809	-0.0222	-0.49	0.0244	-9.8992	0.8139	-9.8993	0.7331	A-	A+	A-
MATH	3	711415	0	B-O	2	85816	0.6045	0.2186	0.0765	0.0959	0.5976	0.011	0.0004	0.5454	-0.2159	-0.2948	-0.3119	0.5469	-0.0798	-0.0206	0.2646	0.023	-9.8991	0.9033	-9.8991	0.8542	A+	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	3	711418	0	B-O	1	85676	0.629	0.1008	0.6208	0.1755	0.0898	0.0119	0.0011	0.5074	-0.2792	0.5098	-0.2597	-0.1925	-0.0768	-0.0339	0.0287	0.0232	-8.0991	0.923	-7.9791	0.8729	A+	A+	A+
MATH	3	408536	0	C-G	2	85282	0.3085	0.3031	0.2742	0.1927	0.2124	0.0114	0.0062	0.2707	0.2732	-0.1106	-0.0921	-0.0747	-0.0625	-0.0344	1.3164	0.0238	9.9012	1.1692	9.9013	1.324	A+	A-	A-
MATH	3	497750	0	C-G	2	85639	0.615	0.6067	0.0682	0.202	0.1097	0.0089	0.0045	0.4395	0.4446	-0.2219	-0.2574	-0.1496	-0.0718	-0.0656	-0.3361	0.0239	9.7311	1.106	8.5912	1.1833	A+	A-	A-
MATH	3	497751	0	C-G	2	84757	0.4608	0.0758	0.4499	0.2171	0.2335	0.022	0.0016	0.4069	-0.1739	0.4115	-0.1482	-0.1932	-0.1038	-0.0161	0.7552	0.023	9.1711	1.0904	8.6211	1.1282	A+	A-	A+
MATH	3	579647	0	C-G	2	85905	0.633	0.6264	0.2802	0.0444	0.0386	0.01	0.0004	0.3497	0.3547	-0.1809	-0.2033	-0.2096	-0.0763	-0.0268	-0.1932	0.0236	9.9012	1.1513	9.9012	1.2355	A-	A+	A+
MATH	3	314244	0	D-M	1	85960	0.489	0.1741	0.4842	0.2724	0.0595	0.0094	0.0003	0.4755	-0.3838	0.477	-0.1362	-0.1057	-0.0708	-0.0208	0.9827	0.0232	6.3911	1.0645	6.9411	1.1082	A+	A+	A+
MATH	3	394382	0	D-M	2	85208	0.6047	0.1627	0.5936	0.1516	0.0738	0.018	0.0004	0.4199	-0.2764	0.4238	-0.1583	-0.1437	-0.0857	-0.0209	0.2397	0.023	6.3211	1.0614	2.541	1.0391	A-	A+	A+
MATH	3	408729	0	D-M	1	85837	0.4613	0.4561	0.1137	0.1608	0.2583	0.0097	0.0015	0.4824	0.484	-0.1889	-0.1708	-0.2512	-0.0709	-0.0389	0.3127	0.0229	2.951	1.0282	1.291	1.0192	A-	A-	A+
MATH	3	493239	0	D-M	1	86214	0.6324	0.1282	0.1036	0.6281	0.1332	0.0064	0.0004	0.6083	-0.2624	-0.3153	0.6092	-0.3084	-0.0661	-0.0262	-0.161	0.0235	-9.8992	0.8227	-9.8992	0.7615	A-	A-	A-
MATH	3	493248	0	D-M	1	85724	0.4947	0.2926	0.0639	0.4885	0.1425	0.0121	0.0004	0.2489	-0.1192	-0.2583	0.2547	-0.0012	-0.0831	-0.0219	0.5417	0.0229	9.9013	1.2997	9.9014	1.4398	A+	A+	A+
MATH	3	579656	0	D-M	2	85240	0.4619	0.1129	0.2774	0.1381	0.4536	0.0171	0.0009	0.3818	-0.2839	-0.0391	-0.2117	0.385	-0.0792	-0.0315	0.7285	0.023	9.9011	1.1235	9.9012	1.1875	A+	A+	A+
MATH	3	579661	0	D-M	2	85790	0.7505	0.0592	0.7418	0.0599	0.1275	0.0104	0.0012	0.6075	-0.2366	0.6081	-0.2486	-0.4253	-0.0772	-0.0467	-0.9407	0.0261	-9.8992	0.7997	-9.8994	0.6415	A+	A-	A+
MATH	3	579664	0	D-M	2	86082	0.8009	0.0814	0.7942	0.0627	0.0534	0.0067	0.0016	0.5102	-0.3018	0.5125	-0.2672	-0.2355	-0.0594	-0.052	-0.9544	0.0262	-9.8992	0.7672	-9.8993	0.6826	A+	A-	A-
MATH	3	622959	0	D-M	1	84900	0.6249	0.1919	0.6111	0.1064	0.0686	0.0183	0.0037	0.5546	-0.2773	0.557	-0.309	-0.2028	-0.092	-0.0575	0.0043	0.0233	-9.8991	0.8612	-9.8992	0.8318	A-	A-	A-
MATH	3	624785	0	D-M	2	85481	0.4367	0.175	0.2068	0.173	0.4301	0.0124	0.0028	0.4158	-0.2567	-0.1304	-0.1224	0.4187	-0.069	-0.0564	0.6565	0.0229	6.4611	1.0626	5.5811	1.0812	A+	A-	A-
MATH	3	662425	0	D-M	2	84114	0.4011	0.2382	0.167	0.1752	0.3886	0.0301	0.0009	0.4335	-0.1302	-0.1946	-0.1847	0.4317	-0.072	0.0036	0.7786	0.023	4.131	1.0402	5.5011	1.0809	A-	A-	A+
MATH	3	713366	0	D-M	2	85274	0.4608	0.06	0.2657	0.4527	0.2039	0.0171	0.0005	0.4319	-0.2002	-0.1056	0.4354	-0.2717	-0.0979	-0.0156	0.5696	0.0229	9.4611	1.0921	8.2711	1.1219	A-	A-	A-
MATH	3	713371	0	D-M	1	85908	0.8827	0.0311	0.8736	0.0403	0.0447	0.0094	0.0009	0.4041	-0.2303	0.4095	-0.1974	-0.2348	-0.0777	-0.0416	-1.8087	0.0322	-7.7792	0.8483	-6.8493	0.7202	A+	A+	A+
MATH	3	713618	0	D-M	2	85405	0.4329	0.082	0.2351	0.2409	0.4259	0.0156	0.0005	0.4814	-0.2349	-0.2268	-0.1591	0.4819	-0.0742	-0.0189	0.7984	0.023	-1.759	0.9831	1.291	1.0186	A+	A+	A+
MATH	3	709880	1	A-F	2	9561	0.3289	0.1881	0.323	0.1348	0.3359	0.0176	0.0005	0.441	0.0285	0.4431	-0.1244	-0.3433	-0.1029	-0.0099	1.4117	0.0741	-0.969	0.9655	0.501	1.028	A+	A+	A+
MATH	3	737299	1	A-T	1	9594	0.6083	0.5994	0.0774	0.2002	0.1083	0.0139	0.0008	0.4947	0.4977	-0.2605	-0.1687	-0.308	-0.0915	-0.0112	-0.0099	0.0692	-3.9991	0.889	-3.5392	0.8416	A+	A-	A+
MATH	3	737301	1	A-T	1	9524	0.6168	0.1282	0.1221	0.1246	0.6033	0.0202	0.0016	0.4652	-0.225	-0.1657	-0.2634	0.4643	-0.0633	-0.0436	-0.0606	0.0693	-1.8991	0.946	-1.9991	0.906	A-	A-	A-
MATH	3	408705	1	B-O	2	9498	0.5224	0.1038	0.1532	0.5096	0.2088	0.0238	0.0007	0.4771	-0.2057	-0.1382	0.4784	-0.2768	-0.0913	-0.0071	0.4245	0.0689	0.501	1.0144	0.601	1.0246	A-	A-	A-
MATH	3	743123	1	B-O	2	9556	0.7494	0.1209	0.7354	0.0726	0.0525	0.0182	0.0004	0.4723	-0.1998	0.4731	-0.27	-0.2796	-0.082	-0.0088	-0.7579	0.0738	-3.7891	0.8795	-1.7291	0.8812	A+	A+	A+
MATH	3	737316	1	C-G	1	9591	0.2899	0.2855	0.0511	0.1	0.5483	0.0113	0.0037	0.2367	0.2407	-0.1281	-0.2881	0.0351	-0.0841	-0.0438	1.5021	0.075	5.5912	1.2177	6.8615	1.4809	A-	A+	A+
MATH	3	301357	1	D-M	2	9605	0.648	0.0789	0.0571	0.2113	0.6392	0.0122	0.0013	0.4821	-0.2182	-0.1643	-0.3095	0.4845	-0.0746	-0.0335	-0.2535	0.0701	-1.299	0.9619	-1.5191	0.9206	A-	A-	A-
MATH	3	737088	1	D-M	1	9640	0.7493	0.1073	0.0544	0.7418	0.0865	0.0099	0.0001	0.4247	-0.1583	-0.2438	0.4268	-0.2704	-0.066	0.0034	-0.8494	0.0747	-1.4991	0.9492	-0.7691	0.9416	A-	A-	A-
MATH	3	737304	2	A-F	1	9479	0.4316	0.4221	0.1212	0.1536	0.2811	0.0218	0.0001	0.6048	0.6034	-0.2113	-0.1539	-0.3586	-0.0835	-0.0139	0.8727	0.069	-8.4392	0.7754	-6.4793	0.7499	A-	A-	A-
MATH	3	314122	2	A-T	1	9421	0.7009	0.0931	0.6814	0.1063	0.0914	0.0276	0.0003	0.4939	-0.2551	0.488	-0.2112	-0.2681	-0.0637	-0.0266	-0.4861	0.0731	-2.8191	0.9089	-2.7692	0.834	A-	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	3	743115	2	A-T	1	9514	0.6805	0.0738	0.1694	0.0705	0.668	0.0176	0.0006	0.5645	-0.2471	-0.3257	-0.2624	0.5649	-0.0855	-0.0351	-0.4268	0.0725	-6.0892	0.8137	-5.2893	0.7094	A-	A-	A-
MATH	3	299934	2	B-O	1	9510	0.5596	0.1508	0.1495	0.1319	0.5492	0.0183	0.0004	0.522	-0.2923	-0.2328	-0.1805	0.524	-0.0848	-0.0343	0.2402	0.0689	-2.9491	0.918	-2.7491	0.8844	A+	A-	A+
MATH	3	659905	2	B-O	2	9536	0.4669	0.2099	0.1418	0.4594	0.1729	0.0155	0.0005	0.3429	-0.0919	-0.2	0.3472	-0.1445	-0.0864	-0.0237	0.7171	0.0687	5.8612	1.1754	5.2712	1.2312	A+	A+	A+
MATH	3	738164	2	C-G	1	9558	0.4076	0.1215	0.156	0.402	0.3068	0.0099	0.0038	0.3554	-0.1776	-0.1419	0.3573	-0.1251	-0.0683	-0.0196	1.0556	0.0697	4.4911	1.1391	5.0012	1.2413	A+	A+	A+
MATH	3	738174	2	D-M	2	9568	0.5923	0.1068	0.5848	0.192	0.1037	0.012	0.0007	0.3041	-0.2454	0.309	-0.1064	-0.0862	-0.0718	-0.0177	0.0747	0.0694	6.2512	1.1928	4.4512	1.2212	A-	A-	A-
MATH	3	743132	2	D-M	1	9532	0.4675	0.4598	0.0985	0.1475	0.2778	0.0159	0.0005	0.4916	0.4923	-0.2282	-0.4184	-0.0442	-0.0672	-0.0326	0.6726	0.0686	-2.1691	0.9396	-1.6391	0.9338	A-	A-	A-
MATH	3	737303	3	A-F	2	9489	0.5999	0.0696	0.2461	0.0786	0.591	0.0143	0.0004	0.3668	-0.2731	-0.1058	-0.2132	0.3725	-0.0868	-0.017	0.055	0.0692	3.1211	1.0915	3.0111	1.1488	A+	A-	A-
MATH	3	408666	3	A-T	1	9490	0.8312	0.0459	0.0477	0.819	0.0728	0.0143	0.0003	0.4638	-0.1995	-0.2326	0.4675	-0.2983	-0.0905	-0.0241	-1.4046	0.0861	-3.3892	0.842	-3.5993	0.6597	A-	A-	A+
MATH	3	706330	3	B-O	2	9478	0.3494	0.3439	0.0787	0.3196	0.2419	0.0155	0.0004	0.3892	0.3913	-0.209	-0.0097	-0.2675	-0.0811	-0.0266	1.3444	0.0718	0.621	1.0198	2.9712	1.1639	A-	A+	A-
MATH	3	737315	3	B-O	2	9498	0.4425	0.1734	0.4364	0.1988	0.1776	0.0135	0.0003	0.3312	-0.2617	0.3358	-0.1335	-0.0084	-0.0924	-0.0176	0.8441	0.0691	5.0312	1.1522	4.5112	1.2047	A+	A+	A+
MATH	3	737087	3	C-G	1	9409	0.5885	0.0326	0.2602	0.1092	0.5749	0.0209	0.0022	0.4585	-0.1978	-0.3022	-0.1498	0.4614	-0.0818	-0.0414	0.0881	0.0691	-1.449	0.9591	-1.9891	0.9094	A+	A-	A-
MATH	3	316233	3	D-M	2	9489	0.6137	0.6046	0.1101	0.1114	0.1592	0.013	0.0018	0.4853	0.4904	-0.1937	-0.2552	-0.2346	-0.0925	-0.0602	-0.0535	0.0697	-1.139	0.967	-1.9491	0.9048	A+	A-	A-
MATH	3	624786	3	D-M	2	9348	0.3142	0.305	0.1983	0.256	0.2113	0.0284	0.0009	0.283	0.2885	-0.097	-0.1377	-0.0384	-0.1075	-0.0172	1.5691	0.0738	0.781	1.027	2.6912	1.1676	A-	A-	A-
MATH	3	738167	3	D-M	2	9458	0.621	0.1064	0.1429	0.6098	0.1229	0.0175	0.0004	0.4392	-0.2191	-0.2714	0.4448	-0.1244	-0.1002	-0.0201	-0.0814	0.0698	-0.169	0.9948	-0.869	0.9559	B-	A+	A+
MATH	3	737306	4	A-F	2	9428	0.64	0.6269	0.1218	0.1687	0.0621	0.0133	0.0072	0.3936	0.3947	-0.2051	-0.1704	-0.2094	-0.0621	-0.0276	-0.1553	0.0707	1.361	1.0411	-0.219	0.9865	A+	A-	A-
MATH	3	737296	4	A-T	2	9478	0.6207	0.0603	0.1258	0.1874	0.6112	0.0133	0.002	0.5628	-0.2611	-0.3074	-0.2562	0.5645	-0.081	-0.0422	-0.092	0.0703	-3.4991	0.8994	-3.0792	0.8415	A-	A-	A-
MATH	3	330053	4	B-O	1	9429	0.688	0.1108	0.1057	0.674	0.0892	0.0198	0.0005	0.5398	-0.2591	-0.3203	0.5398	-0.2127	-0.0857	-0.0285	-0.4406	0.0729	-4.7491	0.8521	-4.0892	0.7545	A+	A+	A-
MATH	3	743122	4	B-O	2	9436	0.6492	0.6365	0.1928	0.0713	0.0798	0.0188	0.0008	0.4216	0.4293	-0.1694	-0.2556	-0.2151	-0.1088	-0.0291	-0.1998	0.0709	0.091	1.0025	-0.149	0.9903	A-	A+	A-
MATH	3	743126	4	B-O	2	9483	0.4828	0.2669	0.1655	0.0772	0.4756	0.0144	0.0003	0.4107	-0.2046	-0.1464	-0.1925	0.4143	-0.0845	-0.0317	0.6346	0.0686	2.0511	1.058	0.941	1.041	A+	A+	A+
MATH	3	312599	4	C-G	1	9369	0.7787	0.0752	0.758	0.0847	0.0555	0.0235	0.0031	0.4639	-0.2703	0.4726	-0.2025	-0.2358	-0.1076	-0.0798	-0.9763	0.0795	-2.4491	0.9023	-1.1891	0.8956	A-	A-	A+
MATH	3	617219	4	D-M	2	9508	0.6533	0.1901	0.078	0.6454	0.0743	0.0114	0.0007	0.5868	-0.4129	-0.2392	0.5835	-0.1803	-0.0433	-0.0415	-0.2968	0.0716	-4.7191	0.8591	-4.0992	0.7715	A-	A-	A-
MATH	3	713370	4	D-M	2	9498	0.4797	0.2376	0.2211	0.0548	0.4734	0.0102	0.003	0.2885	-0.1955	0.0044	-0.2408	0.2944	-0.0829	-0.0461	0.6785	0.0686	9.2413	1.2814	8.5414	1.4211	A+	A-	A+
MATH	3	301314	5	A-F	1	9393	0.7055	0.0758	0.69	0.1369	0.0753	0.0204	0.0016	0.3466	-0.1976	0.3532	-0.1585	-0.165	-0.082	-0.036	-0.5065	0.0731	0.771	1.0254	-0.9591	0.9386	A+	A-	A+
MATH	3	653747	5	A-F	2	9334	0.2003	0.2712	0.2495	0.1947	0.2565	0.0278	0.0003	0.302	-0.2394	-0.0977	0.3024	0.0971	-0.0827	0.0085	2.2874	0.0832	0.131	1.0053	5.6516	1.5856	B-	A-	A-
MATH	3	737300	5	A-T	2	9398	0.6026	0.2124	0.0827	0.0938	0.5897	0.0206	0.0008	0.5968	-0.4436	-0.1945	-0.1553	0.5948	-0.0824	-0.0207	-0.0097	0.0696	-6.9392	0.8117	-5.4592	0.758	B-	A-	A-
MATH	3	711413	5	B-O	1	9474	0.748	0.7379	0.1347	0.0649	0.0489	0.0131	0.0004	0.5215	0.5209	-0.2918	-0.2623	-0.2629	-0.0669	-0.024	-0.8348	0.0769	-4.8292	0.8285	-4.2993	0.7009	A-	A+	A+
MATH	3	737313	5	B-O	2	9426	0.2028	0.249	0.4783	0.0551	0.1991	0.0161	0.0024	0.3469	-0.2541	0.0726	-0.2339	0.3473	-0.089	-0.0095	2.3191	0.0838	0.681	1.0313	3.7714	1.3768	A-	A-	A-
MATH	3	313471	5	C-G	1	9478	0.7725	0.095	0.0571	0.7624	0.0725	0.012	0.0011	0.4538	-0.2389	-0.2143	0.4571	-0.2508	-0.0772	-0.0418	-0.9496	0.0785	-0.789	0.9685	-1.5591	0.8737	A+	A-	A+
MATH	3	738169	5	D-M	1	9460	0.4934	0.108	0.486	0.31	0.081	0.0141	0.0009	0.2416	-0.1276	0.2472	-0.028	-0.2246	-0.0749	-0.0311	0.5321	0.0684	6.1912	1.1828	5.6512	1.2469	A-	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	3	743136	5	D-M	1	9492	0.8202	0.8106	0.0886	0.0523	0.0369	0.0117		0.2729	0.2784	-0.1504	-0.1382	-0.1524	-0.064		-1.2813	0.0843	0.021	1.0003	0.9711	1.0974	A+	A-	A+
MATH	3	737302	6	A-F	1	9451	0.7252	0.072	0.0655	0.7125	0.1324	0.0168	0.0007	0.4738	-0.2163	-0.2525	0.475	-0.2551	-0.0721	-0.0319	-0.6908	0.0767	-3.3291	0.8806	-2.6692	0.7954	A+	A-	A-
MATH	3	314240	6	A-T	2	9518	0.6431	0.0766	0.2152	0.0613	0.6363	0.0104	0.0002	0.6092	-0.2094	-0.428	-0.2298	0.6063	-0.0455	-0.0211	-0.2419	0.0723	-7.1692	0.7837	-5.2393	0.7025	A-	A-	A-
MATH	3	737085	6	B-O	2	9470	0.3098	0.2517	0.305	0.2864	0.1414	0.0154	0.0002	0.2105	-0.2357	0.2137	0.0835	-0.0727	-0.0682	-0.0075	1.5767	0.0729	6.0812	1.2139	7.5415	1.5016	A-	A-	A+
MATH	3	737309	6	B-O	1	9460	0.6801	0.1911	0.0663	0.6688	0.0572	0.0166		0.6059	-0.469	-0.1913	0.6008	-0.1864	-0.0584		-0.4206	0.0738	-6.9192	0.7815	-5.3493	0.6689	A-	A+	A-
MATH	3	653752	6	C-G	2	9497	0.2884	0.2847	0.3335	0.2816	0.0874	0.0121	0.0007	0.2523	0.2553	-0.1262	-0.0732	-0.0506	-0.0762	-0.0068	1.7419	0.0744	3.9911	1.1447	6.9515	1.5066	A+	A-	A-
MATH	3	738162	6	C-G	1	9467	0.6435	0.6333	0.1527	0.1061	0.092	0.0156	0.0003	0.4272	0.4312	-0.249	-0.1802	-0.1798	-0.0846	-0.0158	-0.1888	0.0719	0.581	1.0184	-0.199	0.9868	A+	A+	A-
MATH	3	302001	6	D-M	2	9536	0.6922	0.0744	0.1147	0.6862	0.116	0.0083	0.0004	0.5389	-0.2688	-0.4012	0.54	-0.1437	-0.0656	-0.0128	-0.4798	0.0743	-4.9792	0.8363	-3.4592	0.7684	A-	A-	A-
MATH	3	713364	6	D-M	2	9457	0.4496	0.2099	0.442	0.216	0.1152	0.0149	0.0021	0.4401	-0.2638	0.4406	-0.1076	-0.1813	-0.0639	-0.032	0.8411	0.0692	1.591	1.0467	2.7411	1.126	A-	A-	A+
MATH	3	621406	7	A-F	2	9538	0.4839	0.2618	0.4792	0.0543	0.1951	0.0093	0.0003	0.5011	-0.1998	0.502	-0.1961	-0.2821	-0.0657	-0.0234	0.5936	0.0688	-3.0491	0.9153	-2.1691	0.9112	A-	A-	A-
MATH	3	737298	7	A-T	1	9447	0.7492	0.1032	0.0748	0.7349	0.068	0.0187	0.0004	0.4409	-0.1753	-0.278	0.4403	-0.2305	-0.0677	-0.0339	-0.8132	0.0764	-1.9491	0.9291	-0.599	0.9532	A+	A-	A-
MATH	3	299925	7	B-O	1	9502	0.7442	0.1622	0.0392	0.7342	0.051	0.0131	0.0003	0.5702	-0.4385	-0.2078	0.5694	-0.1843	-0.0767	-0.0168	-0.8012	0.0762	-7.4092	0.7504	-5.3894	0.6435	A-	A+	A-
MATH	3	743125	7	B-O	2	9488	0.7266	0.7158	0.076	0.1509	0.0425	0.0144	0.0004	0.4492	0.4503	-0.2189	-0.2521	-0.2272	-0.0721	-0.0234	-0.6782	0.0748	-2.6691	0.9083	-1.8791	0.8718	A+	A-	A+
MATH	3	738163	7	C-G	1	9361	0.4962	0.1786	0.2345	0.0766	0.4823	0.0163	0.0117	0.2674	-0.1515	-0.0116	-0.2166	0.2771	-0.0888	-0.0617	0.6363	0.0688	8.1513	1.2512	7.4513	1.3457	A+	A-	A-
MATH	3	738165	7	C-G	2	9471	0.557	0.5477	0.2025	0.1193	0.1139	0.0162	0.0004	0.3398	0.3455	-0.1163	-0.151	-0.2036	-0.0923	0.0042	0.2527	0.069	4.5611	1.1363	3.0111	1.1376	A-	A-	A-
MATH	3	662417	7	D-M	1	9521	0.8379	0.05	0.8284	0.0433	0.0669	0.0106	0.0008	0.4715	-0.261	0.4755	-0.2395	-0.2567	-0.0817	-0.0411	-1.4526	0.087	-2.1391	0.8969	-3.2093	0.6871	A+	A-	A+
MATH	3	738171	7	D-M	2	9400	0.5124	0.1757	0.1581	0.142	0.5002	0.0235	0.0005	0.537	-0.2129	-0.285	-0.196	0.5364	-0.094	-0.0245	0.5269	0.0687	-4.9891	0.8643	-4.1792	0.8345	A-	A-	A-
MATH	3	408848	8	A-F	1	9437	0.8658	0.0458	0.0389	0.0469	0.8489	0.0186	0.0009	0.3927	-0.2139	-0.1963	-0.2175	0.4025	-0.1071	-0.0346	-1.6636	0.0934	-2.6091	0.8563	-2.5793	0.6991	B+	A-	A+
MATH	3	743116	8	A-T	1	9417	0.7063	0.0482	0.0732	0.1659	0.691	0.0212	0.0004	0.3893	-0.2295	-0.17	-0.2024	0.3956	-0.0934	-0.0307	-0.5289	0.0737	0.771	1.0259	0.211	1.0132	A+	A-	A-
MATH	3	659908	8	B-O	2	9293	0.5369	0.5183	0.2447	0.1252	0.0773	0.0182	0.0163	0.315	0.3098	-0.0708	-0.1798	-0.2214	-0.0699	0.0286	0.4114	0.0688	5.4912	1.1639	3.8312	1.1821	A-	A+	A-
MATH	3	737310	8	B-O	1	9450	0.7702	0.0799	0.0287	0.7562	0.1171	0.0176	0.0006	0.4295	-0.2727	-0.1827	0.4386	-0.2135	-0.1106	-0.0298	-0.9423	0.0788	-1.6991	0.9335	-1.4091	0.8769	A-	A-	A-
MATH	3	743127	8	B-O	2	9463	0.6571	0.646	0.0777	0.1289	0.1305	0.0163	0.0005	0.3352	0.3448	-0.209	-0.176	-0.1082	-0.1025	-0.0228	-0.2757	0.0716	3.5511	1.1146	3.3912	1.22	A-	A-	A-
MATH	3	302212	8	C-G	1	9475	0.5497	0.2484	0.0897	0.5411	0.1052	0.0139	0.0017	0.4798	-0.2299	-0.2307	0.4854	-0.2039	-0.1077	-0.0361	0.2753	0.069	-0.769	0.9779	-0.839	0.9602	A+	A+	A+
MATH	3	316234	8	D-M	2	9492	0.5543	0.3258	0.5466	0.0857	0.0281	0.0137	0.0001	0.4336	-0.3694	0.4358	-0.0079	-0.1967	-0.0773	-0.0158	0.3002	0.069	3.5811	1.1055	3.9012	1.1916	A-	A-	A-
MATH	3	743133	8	D-M	2	9392	0.3929	0.1297	0.3834	0.1374	0.3254	0.023	0.0012	0.5133	-0.068	0.5135	-0.1176	-0.3671	-0.088	-0.033	1.0878	0.0701	-2.9191	0.9138	-1.0591	0.9498	A-	A-	A-
MATH	3	737081	9	A-F	2	9484	0.4579	0.1502	0.4505	0.1055	0.2776	0.0158	0.0005	0.5305	-0.124	0.5314	-0.2131	-0.3193	-0.0884	-0.0299	0.752	0.0688	-4.8491	0.8693	-3.0791	0.8712	A-	A-	A-
MATH	3	737305	9	A-F	1	9429	0.3641	0.3561	0.1578	0.2026	0.2616	0.0215	0.0005	0.3879	0.3903	-0.1853	-0.099	-0.1492	-0.0929	-0.0232	1.2745	0.0708	0.561	1.0172	1.3511	1.0678	A-	A+	A+
MATH	3	737080	9	A-T	2	9488	0.6741	0.06	0.2098	0.6634	0.0509	0.0155	0.0004	0.6057	-0.1938	-0.4493	0.6034	-0.211	-0.076	-0.0197	-0.3867	0.0728	-5.7892	0.8221	-4.5593	0.7243	A-	A-	A-
MATH	3	300611	9	B-O	2	9526	0.5684	0.1434	0.2345	0.5617	0.0484	0.0117	0.0002	0.4516	-0.3041	-0.177	0.4547	-0.1643	-0.0783	-0.0251	0.178	0.0693	-0.489	0.9858	-0.909	0.9547	A+	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	3	737308	9	B-O	2	9412	0.5663	0.1081	0.1627	0.1526	0.5528	0.0234	0.0003	0.5406	-0.3024	-0.255	-0.1855	0.541	-0.0913	-0.0262	0.2396	0.0691	-5.0291	0.8639	-4.2992	0.8057	A-	A+	A+
MATH	3	743130	9	C-G	1	9525	0.9134	0.0279	0.0339	0.0238	0.9024	0.0112	0.0008	0.3722	-0.2176	-0.2085	-0.1884	0.3768	-0.0781	-0.0459	-2.2137	0.1128	-2.3792	0.8173	-2.6394	0.6037	C+	A-	A-
MATH	3	313472	9	D-M	1	9486	0.5566	0.239	0.5477	0.1018	0.0955	0.0154	0.0007	0.2363	-0.0492	0.2453	-0.1969	-0.099	-0.0951	-0.0284	0.2898	0.069	9.0713	1.2775	8.0614	1.432	A+	A-	A-
MATH	3	738166	9	D-M	2	9539	0.6067	0.0799	0.1218	0.1875	0.6002	0.0101	0.0005	0.4734	-0.2435	-0.1412	-0.2882	0.4762	-0.0796	-0.0295	0.0099	0.07	-2.1691	0.9373	-2.0891	0.8911	A-	A-	A-
MATH	4	314656	0	A-F	2	86305	0.5697	0.1283	0.1707	0.1255	0.562	0.013	0.0005	0.5976	-0.2636	-0.2786	-0.2844	0.5984	-0.0806	-0.0264	-0.2593	0.0231	-9.8992	0.8471	-9.8992	0.7684	A+	A+	A+
MATH	4	408641	0	A-F	2	86534	0.3915	0.3359	0.3872	0.1052	0.1607	0.0106	0.0003	0.3081	-0.0341	0.3105	-0.2208	-0.1646	-0.0641	-0.021	0.4639	0.023	9.9012	1.1955	9.9013	1.2686	A-	A+	A+
MATH	4	479188	0	A-F	1	86467	0.5198	0.0908	0.241	0.5137	0.1428	0.0112	0.0005	0.5251	-0.2285	-0.289	0.5264	-0.1885	-0.0692	-0.0248	0.2783	0.0229	-5.8191	0.9457	-4.8991	0.9316	A-	A+	A+
MATH	4	622938	0	A-F	2	85965	0.3592	0.1446	0.2374	0.3529	0.2476	0.0146	0.0029	0.3873	-0.1036	-0.1866	0.3895	-0.138	-0.0752	-0.0317	0.8734	0.0237	3.761	1.0401	9.6612	1.1658	A-	A+	A+
MATH	4	622939	0	A-F	1	86996	0.7107	0.1414	0.7067	0.0388	0.1074	0.0052	0.0004	0.5289	-0.3665	0.5308	-0.161	-0.2516	-0.0626	-0.0207	-1.1913	0.0256	-1.039	0.9871	-3.6491	0.9013	A+	A-	A-
MATH	4	622944	0	A-F	1	87014	0.6247	0.0817	0.2506	0.041	0.6213	0.0051	0.0003	0.4222	-0.271	-0.1939	-0.2167	0.4248	-0.0625	-0.0237	-0.5883	0.0236	6.2711	1.0644	6.4911	1.1334	A+	A+	A+
MATH	4	662427	0	A-F	2	86337	0.3909	0.2906	0.137	0.1735	0.3857	0.0127	0.0005	0.5346	-0.3229	-0.1565	-0.1355	0.5348	-0.0747	-0.0099	0.4815	0.023	-9.8991	0.9049	-7.0091	0.9022	A-	A+	A+
MATH	4	706340	0	A-F	2	86544	0.5555	0.2258	0.1005	0.1133	0.5495	0.0106	0.0002	0.5131	-0.252	-0.2391	-0.2236	0.5151	-0.0773	-0.0157	0.1553	0.0229	-4.449	0.9587	-3.299	0.9529	A+	A+	A-
MATH	4	709847	0	A-F	2	86514	0.575	0.189	0.1046	0.1266	0.5686	0.0105	0.0006	0.5719	-0.2917	-0.2419	-0.2654	0.5716	-0.06	-0.0185	-0.0028	0.0229	-9.8991	0.8673	-9.8992	0.8364	A-	A+	A+
MATH	4	709899	0	A-F	2	86927	0.6698	0.2396	0.6655	0.0638	0.0247	0.0062	0.0003	0.4994	-0.3697	0.5011	-0.2036	-0.1534	-0.0602	-0.0211	-0.5499	0.0236	-9.1491	0.9113	-9.8992	0.8087	A+	A+	A+
MATH	4	711349	0	A-F	1	86131	0.5584	0.1013	0.1878	0.1456	0.5497	0.0153	0.0003	0.5596	-0.2926	-0.1819	-0.3117	0.5591	-0.0697	-0.0205	-0.052	0.0229	-9.8991	0.8997	-8.9691	0.869	A+	A+	A+
MATH	4	493261	0	A-T	1	86827	0.8614	0.0453	0.8549	0.0375	0.0547	0.0072	0.0004	0.4368	-0.2234	0.4413	-0.2299	-0.2565	-0.0773	-0.0221	-1.7152	0.0286	-9.8993	0.6984	-9.8995	0.5266	A-	A-	A-
MATH	4	493262	0	A-T	2	86730	0.3828	0.0736	0.3859	0.3795	0.1523	0.0084	0.0003	0.2918	-0.2023	-0.079	0.2937	-0.1274	-0.0567	-0.0146	0.6809	0.0233	9.9012	1.2057	9.9013	1.2894	A-	A+	A+
MATH	4	495201	0	A-T	2	86275	0.4161	0.1286	0.3005	0.4103	0.1467	0.0134	0.0005	0.2679	-0.0336	-0.1669	0.2721	-0.1039	-0.0758	-0.0251	0.4033	0.023	9.9012	1.228	9.9013	1.3335	A-	A+	A+
MATH	4	575715	0	A-T	1	86830	0.7543	0.0777	0.0802	0.0859	0.7486	0.0074	0.0002	0.4953	-0.2677	-0.2512	-0.2504	0.4962	-0.0574	-0.0195	-0.9487	0.0247	-9.8992	0.8296	-9.8993	0.719	A-	A-	A+
MATH	4	621396	0	A-T	1	86915	0.6566	0.6523	0.0845	0.1863	0.0704	0.0062	0.0004	0.4793	0.4813	-0.2423	-0.2397	-0.2474	-0.0609	-0.0231	-0.6395	0.0238	-2.479	0.9749	-1.999	0.9598	A+	A-	A-
MATH	4	662438	0	A-T	1	86222	0.6741	0.6643	0.0849	0.0553	0.1809	0.0113	0.0032	0.3832	0.3893	-0.2239	-0.2448	-0.1424	-0.0737	-0.0504	-0.7369	0.024	5.9011	1.063	9.9013	1.2622	A-	A+	A+
MATH	4	706338	0	A-T	1	86354	0.8322	0.0324	0.0718	0.8214	0.0614	0.0128	0.0002	0.4667	-0.2002	-0.2671	0.4647	-0.275	-0.0649	-0.0217	-1.7207	0.0287	-9.7092	0.8505	-8.7393	0.7113	A+	A-	A-
MATH	4	709844	0	A-T	1	86148	0.8095	0.07	0.0571	0.7971	0.0605	0.0121	0.0032	0.4838	-0.2655	-0.2713	0.4847	-0.227	-0.0718	-0.0401	-1.3889	0.0266	-9.8992	0.7874	-9.8994	0.6441	A-	A-	A+
MATH	4	709883	0	A-T	2	86212	0.6505	0.641	0.1362	0.1296	0.0786	0.0137	0.0009	0.5493	0.5486	-0.2938	-0.2508	-0.2599	-0.0665	-0.0168	-0.4875	0.0234	-9.8991	0.8785	-9.8992	0.8137	A-	A+	A-
MATH	4	709889	0	A-T	2	86039	0.4696	0.2008	0.4618	0.1853	0.1355	0.0164	0.0002	0.4189	-0.1439	0.4208	-0.1801	-0.2125	-0.0726	-0.0131	0.4255	0.023	8.4811	1.0839	7.8311	1.1163	A-	A+	A+
MATH	4	313738	0	B-O	2	86641	0.7232	0.7162	0.1438	0.0652	0.0651	0.0094	0.0003	0.5567	0.5588	-0.3388	-0.2504	-0.2563	-0.0783	-0.0231	-0.8337	0.0243	-9.8992	0.7928	-9.8993	0.6965	A+	A+	A+
MATH	4	314659	0	B-O	2	86762	0.6303	0.104	0.1383	0.625	0.1244	0.008	0.0003	0.4601	-0.1022	-0.2532	0.4619	-0.3007	-0.0616	-0.0158	-0.4402	0.0234	-0.209	0.998	-1.879	0.9661	A+	A+	A-
MATH	4	575720	0	B-O	2	86306	0.5085	0.1108	0.5016	0.173	0.2011	0.0131	0.0004	0.4703	-0.1596	0.4724	-0.1785	-0.2728	-0.077	-0.0244	0.3085	0.0229	2.981	1.0286	2.801	1.0404	A-	A+	A+
MATH	4	657726	0	B-O	2	86602	0.5705	0.1425	0.055	0.2276	0.5647	0.0096	0.0006	0.547	-0.2863	-0.2284	-0.2672	0.5487	-0.0742	-0.0257	-0.2676	0.0231	-9.8991	0.9041	-7.4591	0.8805	A-	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	4	657728	0	B-O	1	86406	0.5058	0.4995	0.0501	0.0763	0.3617	0.0121	0.0003	0.5765	0.5764	-0.2314	-0.3389	-0.2913	-0.067	-0.0258	0.0511	0.0229	-9.8991	0.8823	-9.3891	0.8673	A-	A-	A-
MATH	4	657730	0	B-O	1	86928	0.8362	0.8309	0.044	0.0615	0.0572	0.0062	0.0002	0.2933	0.2984	-0.1346	-0.1852	-0.1498	-0.06	-0.0186	-1.7601	0.029	0.131	1.0021	5.6512	1.2271	A+	A-	A+
MATH	4	657737	0	B-O	2	86934	0.6338	0.1369	0.1024	0.1245	0.6298	0.006	0.0004	0.4091	-0.1254	-0.1844	-0.2865	0.4119	-0.0624	-0.0262	-0.5737	0.0236	7.2511	1.0746	6.8311	1.1395	A+	A+	A-
MATH	4	711433	0	B-O	1	86181	0.4947	0.2057	0.4873	0.1557	0.1364	0.0141	0.0008	0.4737	-0.2002	0.4748	-0.2043	-0.214	-0.0714	-0.0159	0.2217	0.0229	-1.019	0.9903	-1.709	0.9757	A+	A+	A+
MATH	4	711438	0	B-O	2	86427	0.5925	0.5853	0.2059	0.1334	0.0632	0.0118	0.0004	0.487	0.4894	-0.1733	-0.2996	-0.2484	-0.0778	-0.0166	-0.2194	0.0231	-3.029	0.9715	-3.6991	0.9407	A-	A+	A-
MATH	4	565998	0	C-G	2	86475	0.5909	0.5841	0.1413	0.1214	0.1416	0.0108	0.0008	0.4402	0.4431	-0.2618	-0.2415	-0.1154	-0.0732	-0.0194	-0.2113	0.023	2.941	1.0281	3.6211	1.0599	A+	A+	A+
MATH	4	621401	0	C-G	2	86729	0.5702	0.5653	0.1166	0.2114	0.098	0.0084	0.0003	0.4276	0.4301	-0.2295	-0.2001	-0.1724	-0.0694	-0.0169	0.0458	0.0229	6.7811	1.065	4.2211	1.0638	A+	A-	A-
MATH	4	706343	0	C-G	1	86520	0.3964	0.1134	0.3639	0.1195	0.392	0.0099	0.0012	0.405	-0.1784	-0.2141	-0.0971	0.4066	-0.0611	-0.0392	0.5853	0.0232	6.3811	1.0644	7.6011	1.1161	A-	A-	A-
MATH	4	713378	0	C-G	1	86600	0.3983	0.1768	0.1614	0.3942	0.2574	0.0084	0.0018	0.2991	-0.1113	-0.1049	0.3028	-0.1336	-0.0753	-0.0387	0.7345	0.0234	9.9012	1.2314	9.9014	1.3578	A-	A+	A+
MATH	4	314172	0	D-M	2	86129	0.4265	0.1245	0.4199	0.2379	0.2022	0.0151	0.0005	0.3976	-0.1921	0.4004	-0.1158	-0.1854	-0.0826	-0.0174	0.4393	0.023	9.4911	1.0945	9.3311	1.1398	A-	A-	A+
MATH	4	617224	0	D-M	2	86662	0.4612	0.3474	0.1044	0.4568	0.082	0.009	0.0005	0.4467	-0.2621	-0.1814	0.4482	-0.1331	-0.066	-0.0124	0.1785	0.0229	6.0111	1.0577	5.1111	1.0754	A-	A+	A+
MATH	4	659934	0	D-M	2	86287	0.4286	0.1772	0.2587	0.4227	0.1276	0.0093	0.0044	0.5501	-0.1481	-0.3815	0.5512	-0.1179	-0.064	-0.0473	0.7289	0.0234	-7.4791	0.9258	-3.079	0.9533	A-	A-	A-
MATH	4	706345	0	D-M	1	86572	0.693	0.6857	0.1244	0.0813	0.0981	0.0076	0.0029	0.5374	0.5407	-0.2758	-0.2342	-0.2918	-0.0658	-0.0652	-0.8025	0.0242	-9.8991	0.8749	-9.8992	0.7919	A+	A-	A-
MATH	4	706346	0	D-M	2	86660	0.4617	0.1499	0.096	0.2873	0.4573	0.0083	0.0012	0.4666	-0.2575	-0.1801	-0.18	0.4682	-0.0666	-0.0228	0.4273	0.023	1.871	1.0181	2.791	1.0405	A+	A+	A+
MATH	4	713628	0	D-M	1	86651	0.5134	0.2678	0.5085	0.1334	0.0807	0.0086	0.001	0.4232	-0.1245	0.425	-0.2455	-0.2476	-0.0584	-0.0324	0.0416	0.0229	8.7211	1.0841	7.0311	1.108	A-	A-	A-
MATH	4	736735	1	A-F	2	9810	0.491	0.0726	0.488	0.1127	0.3205	0.0057	0.0005	0.4552	-0.2512	0.4572	-0.2898	-0.1421	-0.0621	-0.0319	0.1413	0.0686	1.011	1.0291	0.931	1.0379	A-	A-	A-
MATH	4	302349	1	A-T	1	9807	0.8521	0.0443	0.0423	0.0603	0.8466	0.0064	0.0001	0.413	-0.2003	-0.2293	-0.2425	0.4096	-0.0285	-0.0231	-1.8314	0.0832	-5.1592	0.7834	-4.3994	0.6097	A+	A-	A+
MATH	4	743138	1	A-T	2	9675	0.6991	0.6852	0.1286	0.0722	0.0941	0.0156	0.0043	0.4738	0.4763	-0.1907	-0.2691	-0.259	-0.0751	-0.0434	-0.8229	0.0704	-2.1291	0.9395	-0.119	0.9918	A-	A-	A+
MATH	4	743178	1	A-T	1	9769	0.5817	0.1263	0.1595	0.5757	0.1282	0.0097	0.0006	0.4384	-0.1961	-0.2095	0.4417	-0.2042	-0.0753	-0.0331	-0.2417	0.0683	0.011	1	-0.339	0.9847	A+	A-	A-
MATH	4	408755	1	B-O	2	9744	0.5155	0.1065	0.2284	0.5089	0.1433	0.012	0.0009	0.4857	-0.1789	-0.22	0.4871	-0.2508	-0.0655	-0.0325	0.0869	0.0685	-3.1491	0.9119	-2.9691	0.8827	A-	A+	A-
MATH	4	711429	1	B-O	2	9764	0.3872	0.1358	0.2035	0.383	0.2668	0.0106	0.0002	0.2818	-0.0789	-0.0456	0.284	-0.195	-0.0587	-0.0264	0.5839	0.0705	5.3512	1.1791	4.9612	1.2429	A-	A-	A+
MATH	4	743908	1	C-G	1	9760	0.5311	0.039	0.2041	0.2204	0.5252	0.0104	0.0008	0.4742	-0.2069	-0.2555	-0.2101	0.4764	-0.0697	-0.0232	0.0511	0.0685	-1.8591	0.9476	-1.7591	0.929	A-	A+	A-
MATH	4	736742	1	D-M	2	9738	0.7087	0.0403	0.1022	0.6991	0.1449	0.0129	0.0006	0.4684	-0.1919	-0.2187	0.4665	-0.2953	-0.0478	-0.0252	-0.8431	0.0706	-2.7691	0.9215	-2.7692	0.8449	A-	A-	A-
MATH	4	300349	2	A-F	1	9623	0.6775	0.6683	0.1165	0.0777	0.1238	0.0133	0.0003	0.5625	0.5624	-0.2828	-0.2308	-0.3148	-0.0725	-0.0152	-0.7815	0.0727	-5.9692	0.8181	-4.6693	0.7242	A+	A+	A+
MATH	4	743182	2	A-F	1	9681	0.6445	0.089	0.2213	0.6395	0.0425	0.0074	0.0003	0.3865	-0.272	-0.1427	0.3909	-0.2195	-0.0735	-0.0244	-0.5488	0.0708	1.491	1.0457	1.6311	1.0947	A+	A+	A+
MATH	4	706337	2	A-T	2	9644	0.1584	0.1693	0.1566	0.3388	0.3238	0.0114	0.0001	0.1134	-0.0134	0.1153	0.1739	-0.2412	-0.0584	-0.0117	2.315	0.0905	2.1611	1.1216	7.252	1.9864	A-	A+	A-
MATH	4	736739	2	B-O	2	9593	0.7304	0.7182	0.18	0.0487	0.0364	0.0165	0.0002	0.3096	0.3153	-0.114	-0.2325	-0.2058	-0.0722	-0.0185	-1.0286	0.0753	3.7511	1.139	4.2113	1.3495	A+	A+	A+
MATH	4	737337	2	B-O	2	9651	0.5207	0.0647	0.1075	0.302	0.5151	0.0108		0.4286	-0.2556	-0.2566	-0.144	0.4306	-0.0653		0.0622	0.0685	1.211	1.0338	0.681	1.0289	A-	A-	A-
MATH	4	302226	2	C-G	1	9650	0.4195	0.1519	0.1572	0.2651	0.4149	0.0072	0.0037	0.4454	-0.2742	-0.1401	-0.1403	0.4486	-0.0647	-0.0696	0.5796	0.0691	-1.569	0.9549	-1.2791	0.9457	A+	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	4	738202	2	C-G	2	9638	0.5275	0.281	0.1052	0.5211	0.0807	0.0093	0.0028	0.3102	-0.0947	-0.1787	0.3145	-0.1878	-0.0707	-0.0341	0.0727	0.0685	4.8511	1.1411	3.8112	1.1727	A+	A-	A+
MATH	4	743914	2	D-M	1	9569	0.6618	0.057	0.6491	0.1727	0.102	0.0191	0.0001	0.4532	-0.1743	0.4544	-0.2428	-0.2449	-0.0782	0.0104	-0.6352	0.0715	-1.089	0.9662	-1.0791	0.9355	A+	A-	A+
MATH	4	301945	3	A-F	2	9569	0.6036	0.1844	0.5976	0.1031	0.105	0.0096	0.0003	0.4719	-0.2158	0.4721	-0.2465	-0.2211	-0.0485	-0.0197	-0.361	0.0701	-1.389	0.9596	-2.3891	0.8721	A-	A-	A+
MATH	4	737336	3	A-F	1	9588	0.4739	0.2182	0.2599	0.0438	0.4702	0.0077	0.0003	0.5716	-0.3855	-0.2158	-0.1256	0.5723	-0.0678	-0.0075	0.2707	0.0693	-6.3292	0.8252	-5.5692	0.7692	A-	A-	A-
MATH	4	662443	3	A-T	2	9549	0.3138	0.4792	0.099	0.0998	0.31	0.0119	0.0001	0.4245	-0.0712	-0.2748	-0.2392	0.425	-0.0654	-0.009	1.2095	0.0742	1.011	1.0359	2.1111	1.1285	A+	A-	A-
MATH	4	711436	3	B-O	2	9566	0.2829	0.2076	0.2317	0.28	0.2706	0.0101	0.0001	0.2523	-0.216	-0.0841	0.2545	0.0354	-0.0696	0.0068	1.419	0.0763	3.9512	1.1571	6.1515	1.4634	A+	A+	A+
MATH	4	736737	3	B-O	2	9532	0.4673	0.4608	0.061	0.1079	0.3564	0.0137	0.0001	0.5087	0.5091	-0.2265	-0.3862	-0.1496	-0.0681	-0.016	0.3369	0.0694	-1.069	0.9683	-1.029	0.954	B-	A-	A-
MATH	4	738201	3	C-G	1	9552	0.5527	0.1741	0.086	0.5462	0.182	0.0112	0.0005	0.4196	-0.2209	-0.2456	0.4203	-0.1318	-0.0512	-0.0166	-0.1014	0.0694	2.1611	1.0634	0.951	1.0468	A+	A-	A-
MATH	4	299669	3	D-M	1	9526	0.6244	0.1219	0.0962	0.1521	0.6154	0.0141	0.0003	0.5776	-0.244	-0.3024	-0.2878	0.5757	-0.0646	-0.006	-0.4747	0.0707	-7.2392	0.7997	-5.4193	0.7129	A-	A-	A-
MATH	4	659938	3	D-M	2	9600	0.5573	0.1439	0.5535	0.1231	0.1727	0.0064	0.0003	0.4731	-0.1069	0.4747	-0.2356	-0.3071	-0.061	-0.0044	-0.0976	0.0694	-1.169	0.9662	-1.4391	0.9298	A-	A-	A-
MATH	4	737332	4	A-F	1	9597	0.8679	0.0895	0.8619	0.0137	0.028	0.0066	0.0002	0.3955	-0.3004	0.3996	-0.1509	-0.1743	-0.0679	-0.0183	-2.12	0.0957	-3.3892	0.807	-3.1994	0.6172	A+	A-	A-
MATH	4	737335	4	A-F	1	9523	0.6075	0.092	0.1818	0.113	0.5987	0.0138	0.0007	0.5399	-0.2759	-0.1959	-0.3137	0.5433	-0.0938	-0.0272	-0.3685	0.0698	-3.1891	0.9099	-2.6891	0.8608	A+	A+	A+
MATH	4	737327	4	A-T	1	9517	0.7732	0.7616	0.104	0.0756	0.0437	0.0121	0.003	0.5006	0.5011	-0.2805	-0.2711	-0.2275	-0.0715	-0.0342	-1.3458	0.0791	-4.4692	0.8323	-3.9893	0.6726	A+	A-	A-
MATH	4	408748	4	B-O	1	9433	0.6344	0.1548	0.0667	0.6193	0.1354	0.0119	0.0119	0.4513	-0.2662	-0.1892	0.4602	-0.1787	-0.0966	-0.0768	-0.4812	0.0704	-0.169	0.9946	-0.729	0.9576	A+	A-	A-
MATH	4	706342	4	B-O	2	9492	0.5409	0.2295	0.1207	0.5313	0.1008	0.0175	0.0002	0.411	-0.1257	-0.2127	0.416	-0.2408	-0.0968	-0.0165	-0.0029	0.0688	1.671	1.0479	0.881	1.0405	A-	A+	A+
MATH	4	743912	4	C-G	1	9424	0.8911	0.8691	0.0088	0.0672	0.0302	0.0234	0.0013	0.2829	0.3154	-0.0935	-0.1856	-0.1614	-0.146	-0.0411	-2.1847	0.0976	-1.2591	0.9215	-1.8092	0.7589	A+	B-	A-
MATH	4	299668	4	D-M	1	9553	0.611	0.0497	0.1882	0.6041	0.1466	0.0111	0.0003	0.4849	-0.2521	-0.3329	0.4877	-0.1262	-0.083	-0.0141	-0.3835	0.0699	-2.4491	0.93	-2.3091	0.8786	A-	A-	A+
MATH	4	713387	4	D-M	2	9577	0.4309	0.1346	0.4271	0.2324	0.1969	0.0084	0.0005	0.2559	-0.0579	0.2597	-0.1521	-0.094	-0.0732	-0.0182	0.5729	0.0696	7.9013	1.2548	8.5514	1.4316	A-	A-	A+
MATH	4	662433	5	A-F	2	9556	0.4861	0.3095	0.4786	0.1347	0.0618	0.014	0.0013	0.4911	-0.2224	0.4937	-0.2511	-0.1966	-0.0824	-0.0297	0.2484	0.0685	-1.379	0.962	-1.159	0.9503	B-	A-	A-
MATH	4	743143	5	A-F	2	9574	0.683	0.6738	0.132	0.0934	0.0874	0.0129	0.0006	0.5674	0.5665	-0.3404	-0.255	-0.2416	-0.0645	-0.0268	-0.7899	0.0726	-5.6992	0.828	-5.1493	0.6889	A-	A-	A+
MATH	4	300347	5	A-T	1	9528	0.6013	0.0846	0.141	0.1659	0.5903	0.0177	0.0005	0.5063	-0.2306	-0.2838	-0.2006	0.5095	-0.0993	0.0023	-0.3335	0.0695	-3.0491	0.9161	-2.1891	0.8883	A+	A-	A-
MATH	4	743176	5	A-T	1	9634	0.7212	0.7159	0.0803	0.1351	0.0614	0.0069	0.0004	0.4847	0.4838	-0.1753	-0.3484	-0.1986	-0.0402	-0.0225	-1.026	0.0751	-2.2191	0.9236	-1.4791	0.8873	A+	A-	A-
MATH	4	408765	5	B-O	2	9607	0.6836	0.0843	0.6767	0.1155	0.1134	0.0093	0.0008	0.4999	-0.2051	0.504	-0.2821	-0.2516	-0.0819	-0.0325	-0.8116	0.0728	-2.8291	0.9111	-3.0092	0.8059	A-	A+	A+
MATH	4	743149	5	B-O	1	9536	0.3927	0.3859	0.1987	0.2352	0.1628	0.0164	0.001	0.3223	0.3243	-0.1534	-0.0867	-0.1381	-0.0724	0.0083	0.7766	0.0702	2.6311	1.0824	3.4812	1.1699	A-	A+	A-
MATH	4	743910	5	C-G	1	9541	0.699	0.6872	0.1919	0.0501	0.054	0.0157	0.0012	0.5085	0.5074	-0.3742	-0.1724	-0.1825	-0.0663	-0.0232	-0.9028	0.0737	-1.6591	0.9453	-1.9491	0.8641	A+	B-	A-
MATH	4	743915	5	D-M	2	9569	0.726	0.1148	0.0727	0.7158	0.0826	0.0134	0.0006	0.4515	-0.2417	-0.2199	0.4552	-0.223	-0.0811	-0.0189	-1.0491	0.0754	-0.669	0.9758	-0.8691	0.931	A-	A-	A-
MATH	4	301392	6	A-F	2	9613	0.6272	0.2352	0.621	0.0778	0.0562	0.0095	0.0003	0.4441	-0.2497	0.4464	-0.2863	-0.1186	-0.0672	-0.0092	-0.4714	0.0697	-2.1891	0.9377	-0.079	0.9948	A+	A-	A-
MATH	4	743181	6	A-F	1	9607	0.8533	0.0525	0.8445	0.0501	0.0425	0.0099	0.0005	0.4081	-0.1917	0.4104	-0.2553	-0.2138	-0.0647	-0.0318	-1.9206	0.0908	-2.2291	0.8808	-1.8392	0.7964	A+	A-	A+
MATH	4	662436	6	A-T	1	9587	0.2979	0.1467	0.1638	0.3829	0.2942	0.0118	0.0006	0.2669	-0.2241	-0.2429	0.1106	0.2689	-0.0636	-0.009	1.3018	0.0741	4.8912	1.1836	4.9813	1.325	A-	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	4	314657	6	B-O	2	9570	0.6446	0.1732	0.0792	0.098	0.6355	0.0136	0.0006	0.6218	-0.3484	-0.2531	-0.2999	0.6209	-0.0783	-0.0176	-0.5747	0.0704	-8.2092	0.7756	-6.8693	0.6686	A-	A-	A+
MATH	4	624801	6	B-O	2	9509	0.1522	0.1364	0.529	0.165	0.1491	0.0197	0.0008	-0.1711	-0.2299	0.4444	-0.1926	-0.163	-0.0922	-0.0211	2.417	0.0938	5.6714	1.3703	9.9029	2.88	A-	A-	A+
MATH	4	713374	6	C-G	1	9551	0.2347	0.2309	0.3783	0.1753	0.1992	0.0144	0.0018	0.1802	0.1854	0.0667	-0.2257	-0.028	-0.0987	-0.0419	1.738	0.0799	2.4611	1.1074	6.1916	1.5539	A+	A+	A-
MATH	4	713380	6	D-M	2	9518	0.2935	0.352	0.2073	0.2878	0.1334	0.0193	0.0003	-0.0927	0.2784	-0.1383	-0.0857	-0.0863	-0.0601	-0.0275	1.3348	0.0745	9.9016	1.5546	9.902	2.0367	A+	A+	A+
MATH	4	738199	6	D-M	2	9619	0.362	0.194	0.3587	0.2036	0.2345	0.0084	0.0007	0.3437	-0.2027	0.3459	-0.2039	0.0082	-0.0713	-0.0224	0.8848	0.0705	3.1611	1.1007	5.3113	1.2717	A-	A-	A+
MATH	4	737333	7	A-F	1	9505	0.7473	0.0656	0.1152	0.0674	0.7339	0.0172	0.0007	0.5028	-0.235	-0.2684	-0.2713	0.5009	-0.0675	-0.0268	-1.1622	0.0775	-4.7292	0.8295	-4.0993	0.6877	A+	A-	A-
MATH	4	621400	7	A-T	2	9550	0.3862	0.2724	0.3811	0.2109	0.1224	0.0127	0.0005	0.2768	-0.1757	0.2792	-0.0171	-0.1318	-0.0597	-0.0228	0.795	0.0702	6.7112	1.2175	6.6213	1.3474	A-	A-	A-
MATH	4	736734	7	A-T	1	9602	0.702	0.6965	0.0647	0.1441	0.0868	0.0075	0.0003	0.5037	0.5053	-0.1657	-0.3713	-0.1974	-0.0601	-0.0227	-0.8937	0.0743	-5.5192	0.8212	-3.6092	0.757	A+	A-	A-
MATH	4	743140	7	A-T	1	9590	0.8516	0.0649	0.0263	0.8439	0.0558	0.0087	0.0004	0.4171	-0.2585	-0.1947	0.4196	-0.2214	-0.0669	-0.0206	-1.9517	0.0927	-2.2291	0.878	-2.0792	0.7522	A-	A+	A-
MATH	4	301946	7	B-O	2	9534	0.7265	0.7156	0.0658	0.0862	0.1175	0.0145	0.0004	0.5539	0.5533	-0.2604	-0.2786	-0.3034	-0.0731	-0.0219	-1.0612	0.0762	-5.7892	0.8022	-4.4693	0.6799	A-	A+	A+
MATH	4	738195	7	B-O	2	9548	0.4184	0.3036	0.1777	0.0925	0.4128	0.0129	0.0005	0.2674	0.0812	-0.2198	-0.2715	0.2712	-0.0663	-0.0287	0.6509	0.0696	7.3412	1.2326	6.2413	1.3099	A+	A+	A-
MATH	4	743911	7	C-G	1	9545	0.56	0.0496	0.2106	0.1738	0.5523	0.0127	0.001	0.1884	-0.1866	-0.0161	-0.1089	0.1948	-0.0674	-0.0292	-0.1131	0.0693	8.0313	1.2497	5.4713	1.288	A-	A-	A-
MATH	4	302228	7	D-M	2	9598	0.7275	0.0581	0.7215	0.1582	0.0539	0.0077	0.0005	0.5608	-0.2088	0.5631	-0.4003	-0.223	-0.0718	-0.0362	-1.0941	0.0766	-7.1792	0.7561	-5.3794	0.6188	A-	A-	A-
MATH	4	301389	8	A-F	1	9541	0.4179	0.4097	0.2869	0.0865	0.1973	0.0195		0.5517	0.5494	-0.2148	-0.1776	-0.2853	-0.069		0.6182	0.0695	-3.8591	0.8892	-2.4991	0.8953	A-	A-	A-
MATH	4	736736	8	A-F	2	9544	0.4761	0.1475	0.2625	0.467	0.1039	0.0186	0.0006	0.4541	-0.1505	-0.2176	0.4572	-0.2166	-0.0921	-0.0185	0.313	0.0689	0.671	1.0191	0.831	1.0343	A-	A-	A+
MATH	4	736733	8	A-T	1	9611	0.709	0.1499	0.0604	0.7002	0.0771	0.0121	0.0002	0.4125	-0.2167	-0.2624	0.4187	-0.1567	-0.0901	-0.0186	-0.9172	0.0745	-1.359	0.9534	-1.1491	0.9203	A-	A+	A-
MATH	4	737329	8	A-T	1	9620	0.5438	0.1023	0.1327	0.2161	0.5376	0.0107	0.0007	0.5013	-0.2198	-0.2591	-0.2143	0.502	-0.0699	-0.0166	0.0144	0.069	-2.1091	0.9401	-1.5391	0.9341	A+	A-	A-
MATH	4	657735	8	B-O	2	9583	0.2129	0.3308	0.2515	0.1929	0.2096	0.0149	0.0003	-0.1555	0.1561	0.0281	-0.042	-0.1494	-0.0648	-0.0215	1.9649	0.0825	9.9015	1.5461	9.9032	3.2112	A+	A+	A+
MATH	4	738194	8	B-O	1	9567	0.7212	0.0942	0.7091	0.1353	0.0445	0.0163	0.0005	0.5167	-0.2253	0.5215	-0.3511	-0.1807	-0.1034	-0.0248	-0.9787	0.0752	-4.7092	0.8429	-3.9393	0.7393	A+	A-	A-
MATH	4	314191	8	C-G	1	9590	0.7959	0.7844	0.0777	0.0672	0.0562	0.0138	0.0007	0.4567	0.4572	-0.2563	-0.2509	-0.2081	-0.0705	-0.0173	-1.4699	0.0823	-2.8991	0.878	-3.1893	0.7204	A+	A-	A-
MATH	4	743917	8	D-M	2	9633	0.6304	0.0928	0.1651	0.6241	0.1079	0.0087	0.0013	0.5496	-0.2894	-0.3305	0.5524	-0.1688	-0.0757	-0.0411	-0.5248	0.0712	-5.7992	0.8314	-4.9893	0.7461	A+	A-	A-
MATH	4	743144	9	A-F	1	9636	0.763	0.7568	0.1067	0.0354	0.0931	0.0076	0.0004	0.4531	0.4567	-0.1627	-0.1927	-0.3559	-0.0706	-0.0264	-1.2387	0.0786	-1.8191	0.9291	-1.1891	0.8905	A+	A-	A-
MATH	4	743180	9	A-F	2	9640	0.5026	0.1554	0.4988	0.2557	0.0825	0.0067	0.0009	0.4393	-0.2725	0.4418	-0.1932	-0.1132	-0.0719	-0.0292	0.1739	0.0684	0.111	1.0027	0.681	1.0308	A-	A+	A-
MATH	4	269339	9	A-T	1	9568	0.8364	0.0572	0.044	0.0599	0.8239	0.0148	0.0002	0.4005	-0.1738	-0.2303	-0.2364	0.4062	-0.0892	-0.0177	-1.711	0.0874	-0.669	0.9657	-1.0091	0.8846	A-	A+	A+
MATH	4	736738	9	B-O	2	9454	0.4316	0.1222	0.2009	0.42	0.2301	0.0129	0.0139	0.4286	-0.1135	-0.138	0.4245	-0.2645	-0.0576	0.0067	0.6005	0.0691	0.311	1.0087	0.621	1.0275	A+	A+	A-
MATH	4	743148	9	B-O	1	9604	0.6853	0.0975	0.115	0.0986	0.6776	0.0107	0.0006	0.5222	-0.2453	-0.243	-0.2887	0.5252	-0.0814	-0.0289	-0.7797	0.0729	-4.3991	0.863	-3.6592	0.7579	A-	A-	A-
MATH	4	302353	9	C-G	2	9569	0.5923	0.0422	0.5835	0.1828	0.1765	0.0135	0.0014	0.4657	-0.1873	0.4705	-0.1725	-0.3022	-0.0912	-0.0495	-0.2616	0.0694	-0.589	0.983	-0.709	0.9613	A+	A-	A-
MATH	4	736740	9	C-G	1	9589	0.5127	0.1888	0.5061	0.1677	0.1246	0.012	0.0008	0.4327	-0.1331	0.4354	-0.2524	-0.1891	-0.0764	-0.0192	0.1384	0.0684	-0.079	0.9976	-0.479	0.9773	A-	A-	A-
MATH	4	736741	9	D-M	2	9567	0.4831	0.2373	0.2317	0.4758	0.04	0.0146	0.0005	0.5229	-0.279	-0.2426	0.5225	-0.1629	-0.0615	-0.0243	0.308	0.0684	-2.7391	0.9255	-2.0391	0.9108	A+	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	5	313341	0	A-F	1	84808	0.3962	0.3945	0.0465	0.4954	0.0592	0.0041	0.0003	0.4836	0.4846	-0.1456	-0.3289	-0.1604	-0.0537	-0.022	0.5959	0.0229	-4.649	0.9562	-3.6491	0.9489	A+	A-	A-
MATH	5	313760	0	A-F	1	84750	0.48	0.2762	0.1293	0.1119	0.4775	0.0047	0.0004	0.611	-0.3784	-0.2335	-0.171	0.6115	-0.0526	-0.0194	-0.1171	0.0228	-9.8991	0.873	-9.8992	0.8347	A+	A+	A-
MATH	5	408597	0	A-F	1	84638	0.4686	0.4656	0.0737	0.3687	0.0855	0.0062	0.0003	0.4549	0.456	-0.2698	-0.2994	-0.0297	-0.0504	-0.0164	0.4022	0.0228	2.131	1.0197	1.651	1.0232	A-	A+	A-
MATH	5	495241	0	A-F	2	84418	0.4818	0.1936	0.4774	0.2142	0.1058	0.0066	0.0025	0.4049	-0.1254	0.4077	-0.2514	-0.1425	-0.0558	-0.0528	0.316	0.0227	7.7211	1.0717	7.1911	1.1048	A-	A+	A+
MATH	5	495248	0	A-F	2	84412	0.3499	0.3467	0.3083	0.2714	0.0645	0.0089	0.0002	0.3062	0.3083	-0.2591	0.0526	-0.1807	-0.0624	-0.0165	0.9214	0.0235	9.9011	1.1406	9.9013	1.2623	A-	A+	A-
MATH	5	495254	0	A-F	2	84070	0.2439	0.4279	0.2279	0.0904	0.2407	0.0128	0.0004	0.4736	-0.1645	-0.185	-0.1315	0.4727	-0.0464	-0.0082	1.3618	0.0249	-9.8991	0.8509	-7.1291	0.8662	A+	A+	A+
MATH	5	575694	0	A-F	1	84287	0.6052	0.5988	0.1305	0.1772	0.0829	0.0103	0.0003	0.4266	0.4287	-0.2531	-0.1802	-0.18	-0.0606	-0.0177	-0.2123	0.0229	1.991	1.018	-1.609	0.9731	A+	A+	A+
MATH	5	642399	0	A-F	2	84585	0.5577	0.5537	0.1868	0.1738	0.0786	0.0068	0.0003	0.5491	0.5501	-0.2504	-0.3028	-0.2078	-0.0598	-0.0177	0.0527	0.0227	-9.8991	0.8589	-9.8992	0.8098	B-	A+	A-
MATH	5	662460	0	A-F	2	84612	0.294	0.292	0.1263	0.2392	0.3357	0.0065	0.0003	0.332	0.3332	-0.2093	-0.0063	-0.1576	-0.0576	-0.0157	1.0531	0.0239	4.5811	1.0509	8.5311	1.1491	A-	A+	A+
MATH	5	706349	0	A-F	2	84447	0.3872	0.2189	0.2385	0.3838	0.15	0.008	0.0007	0.3336	-0.0849	-0.2167	0.3354	-0.0842	-0.0549	-0.0268	0.8739	0.0234	9.9012	1.1648	9.9013	1.251	A-	A+	A+
MATH	5	706410	0	A-F	2	84350	0.4907	0.2922	0.0806	0.1316	0.4858	0.0095	0.0003	0.5398	-0.1684	-0.2507	-0.3536	0.5399	-0.0541	-0.0148	0.5756	0.0229	-6.1491	0.9426	-6.0591	0.9165	A+	A-	A-
MATH	5	711367	0	A-F	1	84616	0.6558	0.1114	0.1122	0.1182	0.6514	0.0065	0.0003	0.5462	-0.2281	-0.3147	-0.2624	0.5477	-0.0602	-0.0198	-0.5207	0.0234	-9.8992	0.8479	-9.8992	0.7842	A-	A-	A-
MATH	5	711370	0	A-F	2	84372	0.4493	0.2631	0.1451	0.445	0.1373	0.0092	0.0004	0.4559	-0.193	-0.1205	0.4569	-0.2729	-0.0566	-0.0173	0.5659	0.0229	2.371	1.0226	2.711	1.0388	A+	A-	A-
MATH	5	713632	0	A-F	2	84466	0.5989	0.2185	0.1177	0.0615	0.5938	0.0081	0.0004	0.6349	-0.4314	-0.2428	-0.2065	0.6345	-0.058	-0.0148	-0.0045	0.0227	-9.8992	0.7608	-9.8993	0.6915	A-	A+	A+
MATH	5	408608	0	A-T	1	84368	0.3272	0.2149	0.1934	0.324	0.258	0.0094	0.0002	0.3621	-0.0755	-0.1497	0.3635	-0.1693	-0.0595	-0.0135	1.287	0.0246	9.9012	1.1528	9.9014	1.37	A-	A+	A+
MATH	5	566349	0	A-T	1	84332	0.5574	0.137	0.1697	0.1315	0.5518	0.0095	0.0005	0.5269	-0.2783	-0.2241	-0.2256	0.5277	-0.0602	-0.0223	0.0836	0.0227	-9.8991	0.9	-7.3291	0.895	A+	A+	A+
MATH	5	574137	0	A-T	2	84244	0.3706	0.3664	0.2175	0.2042	0.2007	0.0108	0.0003	0.3586	0.3603	-0.0532	-0.1765	-0.1854	-0.0586	-0.0113	0.9816	0.0237	9.9011	1.1099	9.9012	1.1775	A+	A+	A+
MATH	5	622924	0	A-T	1	84750	0.6533	0.1187	0.65	0.1327	0.0934	0.0048	0.0004	0.4768	-0.2186	0.4786	-0.2468	-0.2393	-0.0556	-0.0175	-0.5093	0.0234	-7.8891	0.9263	-6.4991	0.8772	A+	A+	A+
MATH	5	659945	0	A-T	1	84145	0.5249	0.1262	0.2821	0.5185	0.061	0.012	0.0002	0.5472	-0.1833	-0.3927	0.5488	-0.1171	-0.0775	-0.0105	0.1344	0.0227	-9.8991	0.8956	-9.8991	0.8614	A-	A+	A+
MATH	5	659949	0	A-T	1	84546	0.8927	0.0348	0.0295	0.886	0.0422	0.0073	0.0002	0.375	-0.2132	-0.1662	0.3749	-0.2358	-0.0503	-0.0186	-2.1738	0.0334	-8.9192	0.8121	-8.3393	0.6515	A+	A-	A+
MATH	5	709852	0	A-T	2	84703	0.7954	0.0686	0.7909	0.0706	0.0642	0.0055	0.0002	0.4404	-0.287	0.4427	-0.1756	-0.2369	-0.0572	-0.0167	-0.9106	0.0246	-9.8992	0.7926	-9.8993	0.7322	A+	A+	A+
MATH	5	709854	0	A-T	2	84649	0.6342	0.1503	0.1349	0.0783	0.6302	0.0062	0.0002	0.5006	-0.2017	-0.2866	-0.2527	0.5019	-0.0546	-0.0143	-0.2847	0.023	-9.8991	0.9081	-7.6491	0.8724	A-	A+	A+
MATH	5	710019	0	A-T	2	84597	0.7275	0.1131	0.0709	0.7224	0.0866	0.0068	0.0001	0.535	-0.3675	-0.2565	0.5352	-0.188	-0.0548	-0.0057	-0.7791	0.0241	-9.8992	0.7979	-9.8993	0.6891	A-	A-	A+
MATH	5	313325	0	B-O	2	84341	0.4665	0.2056	0.4618	0.1127	0.21	0.0096	0.0004	0.4223	-0.244	0.4241	-0.2642	-0.0565	-0.0605	-0.0186	0.5793	0.0229	6.9911	1.068	6.1111	1.0891	B-	A+	A+
MATH	5	313924	0	B-O	2	84194	0.4242	0.158	0.1765	0.4192	0.2346	0.0113	0.0003	0.405	-0.2477	-0.2858	0.4072	0.0142	-0.069	-0.0167	0.3953	0.0227	8.0811	1.0761	7.1611	1.1038	A-	A+	A+
MATH	5	408790	0	B-O	2	84265	0.3499	0.3461	0.3448	0.1732	0.1251	0.0105	0.0004	0.3821	0.3837	-0.1022	-0.1618	-0.1989	-0.0657	-0.014	0.9615	0.0236	6.4011	1.0694	9.5612	1.1606	A+	A+	A-
MATH	5	493297	0	B-O	2	84423	0.2681	0.2151	0.2947	0.2156	0.2656	0.0082	0.0008	0.4295	-0.0871	-0.1839	-0.1559	0.4303	-0.0659	-0.0136	1.2445	0.0244	-6.5291	0.9255	-0.119	0.9977	A-	A-	A-
MATH	5	408806	0	C-G	2	84636	0.4906	0.1895	0.148	0.1687	0.4874	0.0061	0.0004	0.3969	-0.0936	-0.1853	-0.2465	0.3985	-0.0528	-0.0152	0.3986	0.0227	9.9011	1.0947	9.9011	1.1489	A-	A-	A-
MATH	5	408813	0	C-G	1	84037	0.5888	0.1586	0.1132	0.5809	0.1339	0.013	0.0005	0.4118	-0.1418	-0.1866	0.414	-0.2518	-0.0625	-0.0238	-0.0553	0.0227	5.7511	1.0521	3.4311	1.0546	A+	A+	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	5	495260	0	C-G	2	84518	0.3735	0.3706	0.221	0.1814	0.2191	0.0075	0.0003	0.4239	0.425	-0.1058	-0.2048	-0.1864	-0.0579	-0.0189	0.8289	0.0233	2.191	1.0224	3.4911	1.0537	A+	A+	A+
MATH	5	574147	0	C-G	1	84344	0.4116	0.1949	0.4075	0.1483	0.2394	0.0092	0.0007	0.3088	-0.0091	0.3112	-0.2104	-0.1604	-0.0598	-0.0151	0.7523	0.0232	9.9012	1.2108	9.9013	1.3109	A+	A+	A+
MATH	5	706353	0	C-G	2	84253	0.4533	0.1328	0.3026	0.4483	0.1053	0.0103	0.0007	0.4028	-0.2332	-0.1506	0.4053	-0.1485	-0.0716	-0.0174	0.4764	0.0228	8.9211	1.0855	8.5111	1.1242	A+	A+	A+
MATH	5	715770	0	C-G	1	84761	0.8231	0.0622	0.819	0.0489	0.0649	0.0042	0.0008	0.3676	-0.2004	0.3714	-0.1447	-0.2396	-0.054	-0.031	-1.262	0.0262	-9.8992	0.8378	-7.3692	0.7945	A-	A-	A-
MATH	5	715773	0	C-G	2	84678	0.8398	0.0184	0.8347	0.0721	0.0688	0.0052	0.0008	0.4556	-0.1452	0.457	-0.2884	-0.2812	-0.0523	-0.0249	-1.4558	0.0273	-9.8993	0.7229	-9.8994	0.5656	A+	B-	A-
MATH	5	497786	0	D-M	2	84580	0.3249	0.331	0.3226	0.2005	0.1387	0.0067	0.0004	0.4802	-0.3235	0.4803	-0.1847	0.0169	-0.0479	-0.0152	1.0192	0.0238	-6.8391	0.9279	-0.069	0.9988	A-	A-	A-
MATH	5	566040	0	D-M	2	84306	0.2717	0.1792	0.2494	0.2922	0.2689	0.0101	0.0003	0.3404	-0.0248	-0.0797	-0.2222	0.3417	-0.0626	-0.0125	1.4069	0.025	3.401	1.0428	9.9012	1.2423	A-	A+	A+
MATH	5	715777	0	D-M	1	84280	0.5728	0.5667	0.2086	0.1336	0.0804	0.0096	0.0011	0.54	0.5407	-0.2799	-0.2319	-0.2523	-0.0585	-0.031	0.0419	0.0227	-9.8991	0.8826	-9.8992	0.8369	A-	A-	A-
MATH	5	715909	0	D-M	2	84614	0.7215	0.0553	0.1026	0.1187	0.7166	0.0065	0.0003	0.4525	-0.2693	-0.2634	-0.1814	0.4538	-0.0501	-0.02	-0.5892	0.0236	-9.8991	0.8621	-8.3292	0.8379	A-	A-	A-
MATH	5	715913	0	D-M	1	84770	0.7675	0.0281	0.1709	0.7637	0.0324	0.0046	0.0003	0.4927	-0.1716	-0.4156	0.494	-0.1205	-0.0498	-0.0207	-0.8985	0.0245	-9.8992	0.7748	-9.8993	0.6531	A+	A-	A-
MATH	5	715915	0	D-M	2	84678	0.4925	0.1458	0.2779	0.4895	0.0808	0.0056	0.0004	0.5458	-0.3397	-0.243	0.5465	-0.1475	-0.0509	-0.0224	0.1975	0.0227	-9.8991	0.9028	-9.8991	0.8544	A+	A-	A-
MATH	5	408598	1	A-F	1	9437	0.4395	0.1076	0.3771	0.069	0.4343	0.0113	0.0007	0.5385	-0.1904	-0.3014	-0.2186	0.5369	-0.0445	-0.0331	0.5559	0.0695	-6.2192	0.8245	-5.2492	0.7894	A-	A-	A-
MATH	5	662459	1	A-F	2	9426	0.4396	0.1474	0.4338	0.2618	0.1437	0.0128	0.0004	0.4585	-0.1222	0.4583	-0.2062	-0.2472	-0.0513	-0.0343	0.4847	0.0691	0.341	1.0098	0.271	1.011	A+	A-	A-
MATH	5	709943	1	A-T	2	9475	0.7515	0.0741	0.7454	0.1047	0.0677	0.0076	0.0004	0.4712	-0.1882	0.4756	-0.284	-0.2544	-0.0772	-0.0151	-1.085	0.0734	-4.3191	0.8663	-4.0893	0.7223	A-	A-	A+
MATH	5	743934	1	A-T	1	9487	0.6848	0.1071	0.1174	0.6802	0.0886	0.0063	0.0005	0.4414	-0.2194	-0.2209	0.4439	-0.2217	-0.0596	-0.0182	-0.713	0.0701	-2.8591	0.9216	-2.8592	0.8362	A+	A+	A+
MATH	5	300524	1	B-O	2	9120	0.589	0.1513	0.1721	0.5624	0.069	0.0445	0.0007	0.4879	-0.2739	-0.1659	0.493	-0.2313	-0.119	-0.0236	-0.1227	0.0679	-1.579	0.9586	0.041	1.0013	A-	A-	A-
MATH	5	737099	1	C-G	2	9484	0.4626	0.4593	0.3421	0.0963	0.0952	0.0063	0.0008	0.1629	0.1661	0.0548	-0.179	-0.1748	-0.0507	-0.0242	0.2985	0.0684	9.9013	1.3451	9.9015	1.5382	A-	A-	A-
MATH	5	657756	1	D-M	1	9388	0.1981	0.2113	0.1815	0.1947	0.3953	0.0168	0.0004	0.0152	-0.1977	-0.15	0.0204	0.2889	-0.0822	-0.0124	1.6641	0.0814	6.9913	1.3488	9.4519	1.9029	A+	A-	A+
MATH	5	743951	1	D-M	1	9470	0.7404	0.1665	0.054	0.0369	0.7341	0.008	0.0006	0.5374	-0.4078	-0.2173	-0.1648	0.538	-0.0535	-0.0336	-0.9555	0.0721	-7.6992	0.7825	-5.8094	0.6469	A+	A-	A+
MATH	5	662452	2	A-F	2	9338	0.5608	0.1603	0.1682	0.5559	0.1068	0.0087	0.0001	0.5038	-0.3524	-0.1943	0.5041	-0.1403	-0.0543	-0.0115	-0.1166	0.0689	-4.0291	0.8916	-3.6392	0.8407	A+	A-	A+
MATH	5	737321	2	A-F	1	9352	0.3246	0.3223	0.1434	0.2293	0.2977	0.0071	0.0002	0.4665	0.4676	-0.1651	-0.072	-0.2731	-0.0637	-0.0125	1.1442	0.0723	0.011	0.9999	1.9311	1.103	A+	A-	A-
MATH	5	743939	2	A-F	2	9341	0.6721	0.6664	0.128	0.1171	0.08	0.0081	0.0004	0.5215	0.5208	-0.2901	-0.2635	-0.2197	-0.046	-0.0099	-0.6983	0.0722	-5.6092	0.834	-4.9493	0.7176	A-	A+	A+
MATH	5	314903	2	A-T	1	9333	0.6371	0.6311	0.0963	0.1576	0.1056	0.0089	0.0004	0.4566	0.4586	-0.1695	-0.1898	-0.3124	-0.0596	-0.024	-0.488	0.0706	-1.9491	0.9434	-2.5691	0.862	A+	A-	A-
MATH	5	711448	2	B-O	2	9247	0.5365	0.0885	0.2186	0.5266	0.1479	0.0176	0.0008	0.4254	-0.2444	-0.147	0.4289	-0.206	-0.0807	-0.0063	0.0586	0.0685	1.131	1.0314	0.671	1.0287	A-	A-	A+
MATH	5	737098	2	C-G	1	9328	0.7082	0.0598	0.1771	0.0521	0.7012	0.0097	0.0002	0.5075	-0.26	-0.2937	-0.2378	0.5083	-0.0588	-0.0208	-0.8828	0.074	-3.8591	0.8757	-3.3492	0.7809	A-	A-	A-
MATH	5	740965	2	C-G	2	9356	0.4467	0.1849	0.4436	0.1426	0.2221	0.0063	0.0006	0.451	-0.2233	0.4522	-0.2314	-0.1265	-0.0541	-0.0083	0.467	0.0687	-1.709	0.9516	-1.6491	0.9335	A-	A+	A-
MATH	5	740999	2	D-M	1	9325	0.4768	0.0701	0.1475	0.3003	0.4719	0.0098	0.0004	0.5748	-0.1713	-0.2957	-0.2873	0.5753	-0.0661	-0.0208	0.3283	0.0685	-7.3292	0.8074	-6.0792	0.7714	A-	A-	A-
MATH	5	408579	3	A-F	1	9439	0.5524	0.1141	0.1479	0.1818	0.5477	0.0083	0.0001	0.5328	-0.2256	-0.2297	-0.2761	0.5348	-0.0692	-0.0136	-0.0458	0.0681	-5.6791	0.8583	-4.6492	0.7982	A+	A+	A-
MATH	5	740958	3	A-F	2	9438	0.3914	0.1813	0.2911	0.3881	0.131	0.0082	0.0003	0.2879	-0.1076	-0.1273	0.2906	-0.1076	-0.0629	-0.0199	0.7985	0.0695	2.9611	1.0914	3.2111	1.1443	A-	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	5	743935	3	A-F	1	9459	0.6636	0.0507	0.1345	0.1491	0.6594	0.0062	0.0001	0.3459	-0.1375	-0.168	-0.2058	0.3494	-0.0617	0.0045	-0.5828	0.0708	3.1211	1.0935	1.0611	1.0657	A+	A+	A+
MATH	5	314500	3	A-T	1	9444	0.8021	0.0355	0.12	0.7958	0.0409	0.0076	0.0003	0.4678	-0.1956	-0.3406	0.4676	-0.1881	-0.0475	-0.0157	-1.4843	0.0833	-3.1091	0.8622	-4.1394	0.6303	A-	A-	A-
MATH	5	737325	3	A-T	2	9376	0.4109	0.4048	0.162	0.2916	0.1266	0.0143	0.0007	0.3212	0.3235	-0.1667	-0.0607	-0.1872	-0.0626	-0.0056	0.6992	0.069	4.4811	1.1364	4.3012	1.1909	A-	A-	A-
MATH	5	743943	3	B-O	2	9463	0.2676	0.2312	0.3413	0.1556	0.266	0.0048	0.0011	0.3181	-0.255	-0.0127	-0.0651	0.3191	-0.0477	-0.0164	1.5238	0.0759	0.861	1.0333	1.1111	1.0687	A+	A+	A-
MATH	5	653732	3	C-G	2	9441	0.4439	0.2215	0.4403	0.1729	0.1572	0.0072	0.0009	0.3714	-0.0491	0.3729	-0.2608	-0.169	-0.0582	0.0104	0.5253	0.0683	2.2411	1.0634	2.0311	1.0849	A-	A-	A+
MATH	5	743949	3	D-M	2	9473	0.4575	0.1526	0.2686	0.4553	0.1186	0.0043	0.0005	0.4365	-0.1946	-0.1914	0.4373	-0.1858	-0.0348	-0.026	0.4177	0.068	-1.419	0.9616	-0.429	0.9821	A-	A-	A-
MATH	5	303073	4	A-F	2	9308	0.5772	0.079	0.227	0.5706	0.1118	0.0116		0.5609	-0.2073	-0.3357	0.5585	-0.2394	-0.0416		-0.1509	0.0682	-6.6592	0.834	-5.3692	0.7669	A+	A-	A+
MATH	5	711368	4	A-F	1	9332	0.5451	0.1596	0.1643	0.1269	0.5402	0.0088	0.0002	0.5415	-0.1979	-0.3234	-0.2177	0.5414	-0.0506	-0.0231	0.0029	0.0678	-4.2991	0.8921	-3.5792	0.8496	A+	A-	A-
MATH	5	709945	4	A-T	1	9345	0.6609	0.1428	0.1323	0.6558	0.0614	0.0075	0.0001	0.5158	-0.2597	-0.3037	0.5161	-0.1956	-0.0505	-0.009	-0.6178	0.071	-4.2791	0.8768	-3.7692	0.7864	A-	A-	A-
MATH	5	737317	4	A-T	1	9361	0.7186	0.0721	0.1086	0.099	0.7143	0.0053	0.0006	0.5203	-0.2837	-0.2656	-0.2515	0.5214	-0.0526	-0.0225	-0.92	0.074	-5.0292	0.8373	0.361	1.0245	A+	A-	A-
MATH	5	740959	4	B-O	2	9311	0.3224	0.1806	0.3633	0.126	0.3188	0.0109	0.0003	0.4187	-0.268	-0.012	-0.2418	0.4195	-0.0592	-0.013	1.2009	0.0723	0.011	0.9998	2.2711	1.1229	A-	A-	A-
MATH	5	740960	4	B-O	2	9329	0.5317	0.1247	0.5267	0.2383	0.101	0.0092	0.0001	0.3073	-0.3132	0.3102	-0.0141	-0.132	-0.0569	-0.0181	0.0811	0.0677	4.6511	1.1254	3.1711	1.1413	A+	A-	A+
MATH	5	303009	4	C-G	2	9364	0.4245	0.4221	0.176	0.267	0.1293	0.0053	0.0003	0.3511	0.352	-0.1264	-0.1329	-0.19	-0.0419	-0.0088	0.5923	0.0683	2.2111	1.062	2.2511	1.0944	A-	A-	A-
MATH	5	303022	4	D-M	2	9342	0.3856	0.1554	0.2177	0.2365	0.3825	0.0079	0.0001	0.5219	-0.2468	-0.2222	-0.159	0.5226	-0.0598	-0.0072	0.8375	0.0695	-3.3291	0.9044	-1.4991	0.9349	A-	A-	A-
MATH	5	743937	5	A-F	2	9356	0.6105	0.1228	0.6043	0.1562	0.1065	0.0098	0.0003	0.4904	-0.1686	0.4898	-0.2275	-0.3138	-0.045	-0.0179	-0.3528	0.0694	-2.0591	0.9431	-2.6791	0.8563	A-	A-	A-
MATH	5	743940	5	A-F	1	9394	0.4236	0.1934	0.1722	0.2073	0.421	0.0056	0.0005	0.4096	-0.2403	-0.2627	-0.0088	0.4119	-0.0663	-0.0323	0.6397	0.0692	1.271	1.0371	1.091	1.0488	A+	A+	A+
MATH	5	301877	5	A-T	1	9385	0.8246	0.0422	0.0615	0.0705	0.8188	0.007	0.0001	0.4225	-0.209	-0.2384	-0.2322	0.4224	-0.0463	-0.0142	-1.5934	0.0843	-3.2691	0.8531	-3.3093	0.682	A+	A-	A-
MATH	5	622921	5	A-T	2	9336	0.1698	0.1677	0.1888	0.4131	0.218	0.0123		0.1088	0.1111	-0.1186	0.0485	-0.0291	-0.0632		2.2778	0.0899	2.7212	1.1546	8.5621	2.1438	A-	A+	A-
MATH	5	653730	5	B-O	1	9387	0.7695	0.1609	0.0298	0.7642	0.0382	0.0067	0.0002	0.1967	-0.0845	-0.1209	0.1999	-0.1556	-0.0403	-0.0112	-1.2367	0.078	4.4512	1.1823	5.5416	1.5831	A+	A+	A+
MATH	5	313326	5	C-G	1	9393	0.7253	0.7208	0.0584	0.062	0.1526	0.0059	0.0003	0.4879	0.4893	-0.2457	-0.2707	-0.2556	-0.0578	-0.0137	-0.9752	0.0745	-3.2291	0.8927	-2.4992	0.8117	A-	A-	A-
MATH	5	408825	5	D-M	1	9363	0.4864	0.2151	0.4818	0.1061	0.1876	0.009	0.0004	0.3552	-0.3242	0.3562	-0.2034	0.0574	-0.0435	-0.0199	0.2715	0.0682	2.2311	1.0617	0.931	1.0409	A-	A-	A-
MATH	5	741000	5	D-M	2	9393	0.2801	0.1168	0.1853	0.4134	0.2784	0.0055	0.0007	0.2095	-0.0517	-0.1669	-0.0175	0.2114	-0.054	-0.0261	1.298	0.074	5.7112	1.218	5.8814	1.3818	A+	A-	A-
MATH	5	662449	6	A-F	2	9355	0.5254	0.0687	0.2912	0.1098	0.5199	0.0099	0.0004	0.5256	-0.1586	-0.3795	-0.1448	0.5247	-0.0421	-0.0088	0.1531	0.068	-4.5291	0.8844	-3.6292	0.8465	A+	A-	A+
MATH	5	710023	6	A-F	1	9346	0.6684	0.0715	0.6608	0.1901	0.0662	0.011	0.0003	0.4565	-0.2361	0.4543	-0.2749	-0.1713	-0.0332	-0.0194	-0.6184	0.0714	-0.529	0.9836	-1.1891	0.9234	A+	A+	A+
MATH	5	743938	6	A-F	1	9400	0.3553	0.0623	0.3533	0.4844	0.0944	0.0051	0.0005	0.503	-0.1396	0.5036	-0.3391	-0.1152	-0.0471	-0.0232	1.0095	0.0708	-4.0091	0.8785	-2.5491	0.8814	A+	A-	A-
MATH	5	314762	6	A-T	2	9372	0.6163	0.611	0.1933	0.1158	0.0713	0.0083	0.0003	0.5143	0.5146	-0.2339	-0.2669	-0.2658	-0.0508	-0.0054	-0.3042	0.0693	-3.9591	0.8937	-3.2592	0.8316	A-	A+	A-
MATH	5	314767	6	B-O	2	9355	0.6713	0.1434	0.0828	0.6643	0.099	0.0104		0.4923	-0.2385	-0.2771	0.4896	-0.2269	-0.0339		-0.6509	0.0717	-4.2391	0.875	-4.1893	0.7464	A-	A-	A-
MATH	5	737096	6	B-O	1	9372	0.5366	0.532	0.1322	0.2655	0.0617	0.0086		0.3376	0.3406	-0.3147	-0.0032	-0.232	-0.0666		0.1028	0.068	3.1611	1.0859	3.9212	1.1873	A+	A-	A+
MATH	5	743945	6	C-G	1	9396	0.7834	0.1765	0.7787	0.0223	0.0165	0.0058	0.0002	0.3959	-0.2982	0.3979	-0.1849	-0.1571	-0.0519	-0.0154	-1.2937	0.0799	-0.769	0.9679	-0.9891	0.907	A+	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	5	653735	6	D-M	2	9389	0.1673	0.1871	0.4126	0.2273	0.1662	0.0063	0.0004	0.1114	-0.1343	0.1285	-0.1136	0.1132	-0.0656	-0.0088	2.3356	0.09	2.2611	1.1282	8.0821	2.0516	A-	A+	A-
MATH	5	301853	7	A-F	1	9393	0.663	0.1303	0.1296	0.6559	0.0734	0.0103	0.0004	0.5236	-0.263	-0.2737	0.5207	-0.2399	-0.0389	-0.0199	-0.6305	0.0711	-4.8891	0.86	-4.5993	0.746	A-	A-	A-
MATH	5	662451	7	A-F	2	9404	0.1585	0.4308	0.2253	0.1774	0.157	0.0091	0.0005	0.1164	0.0494	-0.0988	-0.0481	0.1191	-0.0828	-0.0149	2.3636	0.0915	3.9912	1.2382	6.9619	1.9406	A+	A+	A+
MATH	5	709858	7	A-T	2	9422	0.6192	0.0859	0.1172	0.6144	0.1747	0.0075	0.0002	0.5106	-0.1858	-0.2057	0.5137	-0.3291	-0.0751	-0.0236	-0.3919	0.0696	-4.1591	0.8865	-3.7092	0.8154	A-	A-	A-
MATH	5	737318	7	A-T	1	9411	0.6253	0.0971	0.6198	0.1742	0.1001	0.0084	0.0004	0.4495	-0.0665	0.4524	-0.2763	-0.2948	-0.0719	-0.0045	-0.4123	0.0697	-3.2791	0.9093	-2.6191	0.8654	A-	A-	A-
MATH	5	737324	7	A-T	1	9376	0.3915	0.3866	0.2359	0.1884	0.1765	0.0122	0.0003	0.4786	0.4794	-0.1666	-0.2485	-0.153	-0.0635	-0.0125	0.8041	0.07	-3.9091	0.8848	-2.0891	0.9063	A-	A-	A-
MATH	5	743941	7	B-O	2	9400	0.3056	0.2605	0.2817	0.1452	0.3026	0.0096	0.0004	0.3848	-0.2449	0.0272	-0.2142	0.3863	-0.0655	-0.0181	1.3107	0.074	0.301	1.0102	2.5812	1.1602	A-	A-	A+
MATH	5	765982	7	C-G	2	9399	0.2347	0.2323	0.4153	0.186	0.1563	0.0099	0.0002	0.1243	0.1274	0.222	-0.2251	-0.1886	-0.0692	-0.0166	1.7476	0.0796	5.6313	1.2567	6.9616	1.6272	A-	A+	A-
MATH	5	394394	7	D-M	2	9442	0.5692	0.12	0.566	0.1642	0.1443	0.0053	0.0003	0.4728	-0.1049	0.4745	-0.2861	-0.2578	-0.0598	-0.0109	-0.1336	0.0685	-2.4791	0.9334	-1.2691	0.9412	A-	A-	A-
MATH	5	737320	8	A-F	1	9342	0.3717	0.075	0.3688	0.1788	0.3698	0.0069	0.0007	0.5191	-0.1421	0.5189	-0.0449	-0.3974	-0.0424	-0.0134	0.8925	0.0706	-6.0492	0.8203	-4.3892	0.8081	A-	A-	A-
MATH	5	738188	8	A-F	2	9343	0.311	0.3087	0.3317	0.2775	0.0746	0.0074	0.0001	0.1471	0.1491	-0.0863	0.0498	-0.1762	-0.0481	-0.0091	1.2583	0.0738	8.7013	1.3473	9.9017	1.7061	A-	A+	A-
MATH	5	408631	8	A-T	1	9320	0.7393	0.0293	0.0675	0.7319	0.1614	0.0095	0.0005	0.4007	-0.1398	-0.2243	0.4042	-0.2514	-0.0643	-0.0215	-1.0064	0.0742	-3.6791	0.8803	-1.7591	0.8686	A+	A+	A+
MATH	5	738186	8	A-T	2	9324	0.6189	0.613	0.0894	0.0872	0.2008	0.0082	0.0014	0.5538	0.5549	-0.2414	-0.2396	-0.3182	-0.0616	-0.0205	-0.3821	0.0689	-5.9192	0.8487	-4.7392	0.7655	B-	A-	A-
MATH	5	737097	8	B-O	2	9308	0.5096	0.2559	0.5038	0.1483	0.0807	0.0106	0.0006	0.5062	-0.1817	0.5081	-0.266	-0.2639	-0.0745	-0.0282	0.1768	0.0678	-4.4991	0.8854	-3.9592	0.8398	A-	A-	A+
MATH	5	740963	8	C-G	2	9332	0.3944	0.2192	0.1189	0.2622	0.391	0.0084	0.0003	0.39	-0.1998	-0.1638	-0.1138	0.3911	-0.0547	-0.0063	0.7924	0.0699	0.161	1.0046	1.2211	1.0548	A-	A-	A-
MATH	5	740998	8	C-G	2	9281	0.3986	0.1823	0.2273	0.3929	0.1833	0.0138	0.0003	0.1753	-0.0555	0.0048	0.1813	-0.1529	-0.0853	-0.0027	0.7865	0.0699	8.6813	1.2887	7.6914	1.3846	A+	A-	A-
MATH	5	741003	8	D-M	2	9297	0.4133	0.1176	0.2513	0.2105	0.4081	0.0124		0.5242	-0.1978	-0.3078	-0.132	0.5243	-0.0602		0.7096	0.0694	-3.7991	0.8906	-2.9891	0.8746	A-	A+	A+
MATH	5	300474	9	A-F	1	9369	0.6498	0.1061	0.0847	0.1558	0.6432	0.0096	0.0005	0.4952	-0.1497	-0.2822	-0.2948	0.4953	-0.0533	-0.0201	-0.5304	0.0711	-4.2091	0.8795	-3.2792	0.791	A+	A+	A+
MATH	5	653729	9	A-T	2	9340	0.2915	0.2565	0.2877	0.3055	0.137	0.0129	0.0003	0.2384	-0.1045	0.2398	0.0304	-0.2079	-0.0467	-0.0073	1.348	0.0734	3.2911	1.1197	5.2813	1.3197	A-	A-	A-
MATH	5	659941	9	A-T	2	9378	0.4457	0.125	0.279	0.1452	0.4416	0.0091	0.0001	0.5221	-0.2443	-0.2858	-0.1289	0.5222	-0.052	0.0008	0.537	0.0683	-4.4591	0.882	-3.3991	0.8569	A-	A-	A-
MATH	5	737319	9	A-T	1	9418	0.6968	0.6933	0.0942	0.1324	0.0751	0.0045	0.0004	0.4938	0.4964	-0.2124	-0.3486	-0.1671	-0.0648	-0.0162	-0.7787	0.0735	-4.3091	0.8646	-3.3892	0.7545	A+	A-	A-
MATH	5	743942	9	B-O	2	9344	0.3455	0.341	0.4076	0.1121	0.1265	0.0123	0.0005	0.334	0.3355	-0.079	-0.1539	-0.1941	-0.0586	-0.0317	1.0446	0.0708	1.6011	1.0508	3.3212	1.1674	A-	A-	A-
MATH	5	740962	9	C-G	2	9394	0.3287	0.1084	0.4581	0.3263	0.0997	0.0066	0.001	0.3154	-0.2056	-0.0823	0.3175	-0.1262	-0.0638	-0.0308	1.1394	0.0715	3.1311	1.105	4.9513	1.2674	A+	A-	A-
MATH	5	314506	9	D-M	1	9359	0.6338	0.1273	0.1694	0.6267	0.0654	0.0106	0.0006	0.5676	-0.3154	-0.2816	0.5681	-0.2291	-0.067	-0.0213	-0.4699	0.0707	-7.7292	0.7908	-5.5193	0.6772	A-	A-	A-
MATH	5	743950	9	D-M	2	9363	0.4616	0.165	0.4566	0.2002	0.1674	0.0105	0.0003	0.4447	-0.2228	0.4454	-0.2263	-0.1156	-0.0491	-0.0254	0.4364	0.0681	-1.249	0.9664	-1.029	0.9541	A-	A-	A-
MATH	6	412555	0	A-N	2	77545	0.6785	0.6732	0.1035	0.1005	0.1149	0.0075	0.0004	0.5052	0.5067	-0.2549	-0.2833	-0.2173	-0.06	-0.019	-0.4649	0.0235	-9.8991	0.8945	-6.8291	0.8637	A-	A+	A-
MATH	6	479690	0	A-N	1	77731	0.7383	0.7342	0.1691	0.0553	0.0359	0.0053	0.0002	0.4906	0.4933	-0.3785	-0.1549	-0.192	-0.0649	-0.0148	-1.1256	0.0256	-5.9291	0.9299	-6.7992	0.8093	A+	A-	A-
MATH	6	491046	0	A-N	1	77652	0.5669	0.2569	0.1276	0.5632	0.0458	0.0062	0.0003	0.5145	-0.3499	-0.1819	0.5166	-0.1782	-0.0653	-0.0169	-0.1308	0.023	-5.179	0.9531	-5.6891	0.9029	A+	A-	A-
MATH	6	574777	0	A-N	2	77228	0.3905	0.1037	0.3859	0.3209	0.1775	0.0117	0.0003	0.405	-0.1636	0.4067	-0.2762	-0.0311	-0.0652	-0.0165	0.9275	0.0238	9.9011	1.1342	9.9012	1.1841	A-	A+	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	6	575149	0	A-N	2	77113	0.4076	0.0998	0.4022	0.1559	0.3288	0.0129	0.0005	0.3775	-0.1337	0.3807	-0.1933	-0.1434	-0.0778	-0.0149	0.7042	0.0234	9.9012	1.1601	9.9012	1.2188	A+	A+	A+
MATH	6	617644	0	A-N	1	77632	0.6171	0.1685	0.613	0.1746	0.0372	0.0064	0.0004	0.4209	-0.3155	0.4241	-0.1365	-0.1635	-0.0667	-0.0208	-0.3598	0.0233	4.061	1.0383	3.3111	1.0667	A-	A+	A+
MATH	6	652192	0	A-N	1	77421	0.4278	0.2302	0.1594	0.1772	0.4238	0.0089	0.0005	0.4915	-0.184	-0.2666	-0.1628	0.4927	-0.0615	-0.0197	0.5899	0.0232	-0.769	0.9922	-0.279	0.9958	A+	A+	A+
MATH	6	312500	0	A-R	2	77426	0.4738	0.1676	0.2639	0.4693	0.0898	0.0091	0.0003	0.5016	-0.0953	-0.3089	0.5033	-0.2542	-0.0688	-0.0147	0.4275	0.023	-2.509	0.9757	-1.659	0.9754	A-	A+	A+
MATH	6	412895	0	A-R	2	77285	0.4886	0.2572	0.4832	0.153	0.0954	0.011	0.0002	0.5391	-0.2547	0.5394	-0.2268	-0.2385	-0.0608	-0.0123	0.6673	0.0233	-1.939	0.9802	-0.979	0.9852	A-	A+	A+
MATH	6	478716	0	A-R	2	77238	0.5272	0.0566	0.0992	0.521	0.3114	0.0117	0.0001	0.4288	-0.2169	-0.2673	0.4312	-0.1683	-0.068	-0.0134	0.3094	0.023	8.2011	1.0802	4.7411	1.0734	A-	A+	A+
MATH	6	575151	0	A-R	1	77548	0.7655	0.0737	0.7595	0.0992	0.0597	0.0077	0.0002	0.3905	-0.2098	0.394	-0.227	-0.1688	-0.0633	-0.0132	-1.164	0.0258	-0.889	0.989	-0.899	0.9725	A+	A+	A+
MATH	6	614778	0	A-R	1	77580	0.8449	0.8386	0.0524	0.0495	0.052	0.0068	0.0006	0.4075	0.409	-0.2611	-0.2431	-0.1561	-0.0561	-0.0117	-1.3367	0.0267	-9.8992	0.7515	-9.0793	0.7251	A+	A+	A+
MATH	6	622370	0	A-R	1	77574	0.4169	0.1711	0.2144	0.1932	0.4138	0.007	0.0005	0.5424	-0.1248	-0.2592	-0.275	0.5433	-0.0648	-0.0097	0.5751	0.0232	-8.7191	0.9149	-7.3191	0.8948	A-	A-	A-
MATH	6	653194	0	A-R	1	77547	0.6177	0.6128	0.0741	0.1061	0.1991	0.0075	0.0003	0.3802	0.3833	-0.1987	-0.2	-0.1685	-0.0623	-0.0188	-0.258	0.0232	9.8211	1.0935	8.5312	1.1685	A-	A+	A+
MATH	6	657501	0	A-R	2	76786	0.4685	0.224	0.0973	0.2008	0.4603	0.0169	0.0007	0.4809	-0.0779	-0.2566	-0.3046	0.4824	-0.0748	-0.0084	0.7141	0.0234	1.771	1.0185	2.261	1.0346	A-	A+	A+
MATH	6	711379	0	A-R	2	77365	0.4276	0.285	0.1445	0.1371	0.4232	0.0099	0.0002	0.4412	-0.1559	-0.3002	-0.1035	0.4433	-0.0727	-0.0149	0.7127	0.0234	4.681	1.0493	4.0811	1.0631	A-	A-	A-
MATH	6	490026	0	B-E	2	77201	0.3652	0.3607	0.2433	0.2107	0.173	0.012	0.0003	0.4637	0.4646	-0.1826	-0.1521	-0.1997	-0.0639	-0.0133	1.0765	0.0241	0.631	1.0071	3.8411	1.0672	A-	A+	A+
MATH	6	574784	0	B-E	2	76717	0.3341	0.1767	0.3279	0.275	0.2019	0.018	0.0005	0.3577	-0.0656	0.3613	-0.2452	-0.0568	-0.0893	-0.0174	1.2544	0.0246	9.9012	1.1776	9.9013	1.3151	A-	A+	A+
MATH	6	624649	0	B-E	2	77438	0.3267	0.3237	0.2695	0.2445	0.153	0.009	0.0002	0.3414	0.3427	-0.0621	-0.1581	-0.1647	-0.0567	-0.0138	1.2656	0.0247	9.9011	1.1469	9.9013	1.2893	A-	A+	A+
MATH	6	654994	0	B-E	1	77626	0.5871	0.1251	0.1485	0.5831	0.1365	0.0065	0.0003	0.4918	-0.1617	-0.1751	0.4936	-0.3565	-0.061	-0.0177	-0.3109	0.0232	-2.609	0.9759	-1.859	0.9645	A+	A+	A+
MATH	6	657503	0	B-E	1	77142	0.5456	0.0613	0.312	0.5385	0.0751	0.0124	0.0007	0.4489	-0.207	-0.2382	0.4516	-0.2151	-0.0734	-0.0109	-0.0104	0.0229	4.751	1.0443	1.671	1.028	A+	A+	A+
MATH	6	657504	0	B-E	2	77283	0.5442	0.5381	0.1587	0.1627	0.1293	0.011	0.0002	0.4916	0.4932	-0.246	-0.1962	-0.2277	-0.0664	-0.0144	0.0725	0.0229	-0.729	0.9932	-1.029	0.9834	A+	A+	A+
MATH	6	663836	0	B-E	2	77415	0.6684	0.1182	0.662	0.1279	0.0824	0.0066	0.0029	0.5316	-0.2079	0.5346	-0.3061	-0.2744	-0.0616	-0.0574	-0.3529	0.0233	-9.8991	0.8508	-9.8992	0.7607	A+	A-	A+
MATH	6	706361	0	B-E	1	77605	0.5238	0.52	0.1728	0.1597	0.1404	0.0068	0.0003	0.6109	0.6113	-0.2623	-0.3101	-0.2525	-0.0569	-0.015	0.0837	0.0229	-9.8992	0.8402	-9.8992	0.7692	A-	A+	A-
MATH	6	711451	0	B-E	2	77634	0.4736	0.1483	0.1795	0.1951	0.4704	0.0065	0.0002	0.5991	-0.2364	-0.2609	-0.2794	0.5991	-0.049	-0.0166	0.5636	0.0232	-9.8991	0.8579	-9.8992	0.8293	A+	A+	A+
MATH	6	713650	0	B-E	2	77554	0.5289	0.1698	0.1491	0.5248	0.1486	0.0076	0.0002	0.5645	-0.2749	-0.3174	0.5654	-0.17	-0.0629	-0.0134	0.2084	0.0229	-9.8991	0.8912	-9.8991	0.8514	A+	A+	A+
MATH	6	496953	0	C-G	1	77307	0.5559	0.5498	0.1781	0.1841	0.0771	0.0108	0.0002	0.6064	0.6062	-0.3282	-0.2942	-0.2075	-0.0634	-0.0099	-0.0538	0.023	-9.8992	0.8295	-9.8992	0.7581	A+	A-	A-
MATH	6	574849	0	C-G	1	77437	0.4427	0.4386	0.2859	0.1689	0.0974	0.009	0.0003	0.4731	0.4739	-0.2516	-0.1815	-0.1619	-0.0553	-0.0159	0.5477	0.0231	2.211	1.0222	1.211	1.018	A+	A-	A-
MATH	6	614784	0	C-G	1	77691	0.6383	0.1266	0.6344	0.1158	0.1172	0.0058	0.0002	0.355	-0.2276	0.3575	-0.2202	-0.0679	-0.0525	-0.0138	-0.2446	0.0231	9.9011	1.1087	5.8311	1.1126	A+	A+	A+
MATH	6	654782	0	C-G	1	77469	0.5073	0.167	0.1493	0.172	0.5028	0.0087	0.0002	0.6272	-0.33	-0.2109	-0.2901	0.6273	-0.0617	-0.0142	0.3874	0.023	-9.8992	0.8248	-9.8992	0.7844	A+	A-	A-
MATH	6	663839	0	C-G	1	77599	0.9352	0.0121	0.9285	0.0121	0.0402	0.0065	0.0007	0.2702	-0.1113	0.2795	-0.1241	-0.2026	-0.0707	-0.0312	-2.7564	0.0413	-2.9591	0.9075	-7.0594	0.6031	A+	A-	A-
MATH	6	713400	0	C-G	1	77373	0.3707	0.1109	0.1306	0.3815	0.3669	0.0099	0.0002	0.5868	-0.2852	-0.1958	-0.2487	0.587	-0.0642	-0.016	1.0061	0.024	-9.8991	0.8564	-9.8392	0.8452	A+	A-	A-
MATH	6	715778	0	C-G	2	77591	0.5055	0.3145	0.5018	0.0815	0.0949	0.0071	0.0002	0.647	-0.4876	0.6471	-0.1707	-0.1548	-0.0584	-0.0121	0.238	0.0229	-9.8992	0.8116	-9.8992	0.7557	A-	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	6	715779	0	C-G	1	77687	0.697	0.0808	0.1252	0.6928	0.0953	0.0059	0.0002	0.4696	-0.2488	-0.3222	0.4722	-0.1308	-0.0628	-0.0179	-0.6177	0.0238	-9.1091	0.913	-6.9392	0.8499	A+	A+	A+
MATH	6	413106	0	D-S	2	77412	0.3432	0.1909	0.3399	0.3536	0.106	0.0091	0.0004	0.3618	-0.1185	0.364	-0.136	-0.1745	-0.0704	-0.0202	0.94	0.0238	9.9012	1.1504	9.9013	1.2555	A-	A+	A-
MATH	6	500237	0	D-S	2	77459	0.5176	0.2948	0.1145	0.513	0.0688	0.0086	0.0004	0.4583	-0.1743	-0.2862	0.4603	-0.21	-0.0657	-0.0123	0.0975	0.0229	2.371	1.0221	1.081	1.0173	A+	A+	A-
MATH	6	622368	0	D-S	2	77453	0.3247	0.3217	0.2507	0.2241	0.1944	0.0086	0.0004	0.3134	0.3155	-0.1807	-0.0041	-0.1544	-0.065	-0.0137	0.888	0.0237	9.9012	1.1775	9.9013	1.2814	A-	A+	A-
MATH	6	624654	0	D-S	2	77466	0.5315	0.1852	0.1141	0.5268	0.165	0.0084	0.0005	0.44	-0.2462	-0.1065	0.4416	-0.23	-0.0584	-0.0141	0.1612	0.0229	5.6011	1.0532	5.2811	1.0851	A-	A-	A-
MATH	6	654998	0	D-S	2	77332	0.4508	0.1457	0.2491	0.1485	0.4461	0.01	0.0006	0.508	-0.2252	-0.2196	-0.1996	0.5101	-0.0787	-0.012	0.4898	0.0231	0.021	1.0002	1.091	1.0162	A+	A-	A-
MATH	6	663840	0	D-S	2	77333	0.5019	0.0964	0.1568	0.4966	0.2397	0.0102	0.0004	0.2797	-0.1543	-0.0977	0.2835	-0.126	-0.0646	-0.0199	0.3077	0.023	9.9013	1.2738	9.9014	1.4007	A+	A+	A-
MATH	6	738179	1	A-N	1	8678	0.5793	0.1564	0.1112	0.5753	0.1501	0.0069		0.3658	-0.0113	-0.2293	0.3697	-0.281	-0.0752		-0.1807	0.0677	3.9711	1.1059	2.6211	1.1272	A+	A-	A-
MATH	6	624473	1	A-R	2	8643	0.3176	0.093	0.3678	0.3141	0.2141	0.0105	0.0003	0.3153	-0.1928	-0.1762	0.3164	-0.0019	-0.046	-0.0219	1.0451	0.074	4.4412	1.1723	5.0013	1.2957	A-	A-	A+
MATH	6	740936	1	A-R	2	8666	0.4772	0.1001	0.4732	0.3512	0.0672	0.0077	0.0006	0.3355	-0.2853	0.3378	-0.0216	-0.2684	-0.0568	-0.0232	0.3416	0.0687	5.5012	1.1677	4.1612	1.1873	A-	A+	A+
MATH	6	740940	1	B-E	2	8657	0.5189	0.159	0.2311	0.0866	0.5141	0.009	0.0002	0.5638	-0.2562	-0.2669	-0.2486	0.5645	-0.0599	-0.0221	0.2441	0.0684	-4.1491	0.8871	-3.6691	0.8514	A+	A-	A-
MATH	6	740942	1	B-E	2	8674	0.6375	0.6329	0.1459	0.1344	0.0795	0.007	0.0003	0.5377	0.5389	-0.2133	-0.346	-0.2253	-0.0617	-0.0187	-0.2393	0.0678	-6.8492	0.8337	-5.1592	0.7712	A+	A+	A+
MATH	6	745972	1	C-G	2	8679	0.4672	0.4641	0.2661	0.1701	0.093	0.0063	0.0005	0.4343	0.4365	-0.1372	-0.2545	-0.192	-0.0639	-0.0286	0.5601	0.0699	0.431	1.0132	0.121	1.0045	A-	A-	A+
MATH	6	411365	1	D-S	1	8642	0.4342	0.4294	0.217	0.1741	0.1686	0.0108	0.0002	0.4216	0.4237	-0.1469	-0.1959	-0.1808	-0.0657	-0.0279	0.595	0.0701	2.9511	1.0952	3.6612	1.1719	A+	A+	A+
MATH	6	654783	1	D-S	2	8660	0.2781	0.1165	0.2756	0.1657	0.4333	0.0089		0.1408	-0.2262	0.143	-0.0738	0.0831	-0.0538		1.2379	0.0762	6.9013	1.2981	7.6415	1.5334	A-	A+	A+
MATH	6	412894	2	A-N	1	8571	0.7387	0.1076	0.1056	0.0456	0.7317	0.0088	0.0007	0.5314	-0.3131	-0.2925	-0.2041	0.5328	-0.0623	-0.029	-1.0045	0.0755	-6.4292	0.7948	-4.5293	0.6545	A+	A-	A-
MATH	6	743919	2	A-N	1	8588	0.4639	0.0962	0.1865	0.2494	0.4604	0.007	0.0005	0.5209	-0.1658	-0.2592	-0.2408	0.5228	-0.0725	-0.0237	0.4961	0.0694	-3.4791	0.8999	-2.7391	0.8785	A+	A-	A-
MATH	6	745960	2	A-R	2	8589	0.3241	0.0678	0.3217	0.1017	0.5013	0.007	0.0003	0.3511	-0.2249	0.3527	-0.2675	-0.0436	-0.0616	-0.0202	1.2532	0.0741	3.2011	1.1206	4.3613	1.2649	A-	A-	A+
MATH	6	413108	2	B-E	2	8572	0.4714	0.1714	0.2444	0.467	0.1078	0.0094		0.2854	-0.0869	-0.1384	0.2895	-0.1445	-0.0771		0.438	0.0693	7.5412	1.2378	5.9713	1.3011	A+	A-	A-
MATH	6	745964	2	B-E	2	8571	0.3363	0.1846	0.3461	0.1268	0.3331	0.0088	0.0007	0.4155	-0.2513	-0.0439	-0.2191	0.416	-0.0492	-0.0073	1.2036	0.0736	0.601	1.0214	1.6211	1.0905	A+	A-	A-
MATH	6	740945	2	C-G	1	8579	0.5288	0.0462	0.1683	0.5243	0.2526	0.0083	0.0002	0.5693	-0.1954	-0.3846	0.5698	-0.2158	-0.0649	0.0008	0.1498	0.0689	-5.0891	0.8636	-3.6292	0.831	A+	A-	A-
MATH	6	740949	2	D-S	2	8546	0.3142	0.3103	0.2033	0.1863	0.2878	0.0121	0.0002	0.5276	0.5281	-0.0547	-0.2229	-0.2812	-0.0724	-0.0154	1.3407	0.0749	-2.9591	0.8928	-1.8991	0.8913	A-	A-	A-
MATH	6	745975	2	D-S	2	8586	0.4674	0.4638	0.2039	0.184	0.1406	0.0075	0.0002	0.4604	0.462	-0.2026	-0.2737	-0.107	-0.0609	-0.018	0.4529	0.0693	0.211	1.006	0.751	1.0342	A+	A-	A-
MATH	6	269606	3	A-N	2	8598	0.3391	0.0555	0.2532	0.3424	0.3341	0.0142	0.0006	0.3192	-0.1765	-0.2033	-0.0346	0.3195	-0.0454	-0.0039	1.2191	0.073	4.2612	1.1564	5.2313	1.3023	A+	A+	A-
MATH	6	738177	3	A-N	1	8643	0.3929	0.3891	0.1346	0.2506	0.216	0.0093	0.0003	0.4442	0.4467	-0.1495	-0.2315	-0.1417	-0.0859	0.0052	0.8454	0.0703	0.771	1.0239	0.831	1.0369	A+	A-	A-
MATH	6	711374	3	A-R	1	8653	0.4971	0.1223	0.3164	0.4928	0.06	0.0077	0.0008	0.5002	-0.332	-0.1832	0.5015	-0.2152	-0.058	-0.0191	0.2513	0.0684	-2.7391	0.9257	-2.6891	0.8895	A-	A+	A-
MATH	6	300400	3	B-E	2	8645	0.4042	0.4004	0.2055	0.1689	0.2159	0.0091	0.0003	0.3947	0.3955	-0.1963	-0.2533	-0.0358	-0.0493	-0.0084	0.759	0.0698	2.6511	1.0832	2.0111	1.0892	A-	A+	A+
MATH	6	711450	3	B-E	1	8513	0.3345	0.3895	0.1461	0.1136	0.3263	0.0207	0.0038	0.107	0.1016	-0.0497	-0.2348	0.1125	-0.0575	-0.0335	1.2855	0.0736	9.9014	1.4208	9.9017	1.6818	A+	A-	A+
MATH	6	745970	3	C-G	2	8628	0.4407	0.1699	0.4357	0.2269	0.1562	0.0111	0.0002	0.5209	-0.3384	0.5209	-0.0894	-0.2412	-0.0573	-0.0101	0.5797	0.069	-3.5991	0.8978	-2.4591	0.9001	A-	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	6	622371	3	D-S	2	8635	0.3728	0.1529	0.1789	0.2889	0.3689	0.0096	0.0009	0.4682	-0.161	-0.2208	-0.1721	0.4685	-0.0562	-0.0002	0.9238	0.0707	0.751	1.0239	1.6211	1.0754	A-	A-	A+
MATH	6	745977	3	D-S	1	8643	0.563	0.1502	0.1903	0.5576	0.0922	0.0093	0.0003	0.5481	-0.2744	-0.2299	0.548	-0.2723	-0.05	-0.0158	-0.0674	0.0686	-5.6291	0.8546	-4.9092	0.7843	A-	A-	A-
MATH	6	709921	4	A-N	2	8677	0.741	0.1338	0.7343	0.0707	0.0521	0.0085	0.0007	0.4835	-0.3037	0.4851	-0.2458	-0.1878	-0.0618	-0.0192	-1.0011	0.076	-3.8591	0.8701	-2.7492	0.7693	A+	A+	A+
MATH	6	743923	4	A-N	1	8697	0.4984	0.1147	0.221	0.495	0.1625	0.0063	0.0006	0.4344	-0.2351	-0.2753	0.4376	-0.0624	-0.0771	-0.0224	0.3301	0.0691	-0.009	0.9995	-0.609	0.97	A-	A-	A-
MATH	6	736747	4	A-R	2	8659	0.5767	0.1632	0.1141	0.5703	0.1413	0.0111	0.0001	0.5481	-0.2826	-0.2485	0.5482	-0.2338	-0.0615	-0.0106	-0.1676	0.0696	-4.5791	0.8766	-3.6192	0.8024	B-	A-	A-
MATH	6	740938	4	A-R	2	8606	0.522	0.1623	0.0679	0.2396	0.513	0.0167	0.0006	0.5342	-0.3827	-0.1838	-0.1663	0.5322	-0.0555	-0.0232	0.233	0.069	-3.2191	0.911	-3.1591	0.8509	B-	A+	A+
MATH	6	624650	4	B-E	2	8670	0.3963	0.1646	0.3924	0.2508	0.1824	0.0092	0.0007	0.398	-0.1471	0.4004	-0.1975	-0.1234	-0.0776	-0.0122	0.8328	0.0707	1.481	1.0475	1.9611	1.0963	A-	A-	A-
MATH	6	740947	4	C-G	2	8701	0.565	0.1624	0.5614	0.1383	0.1316	0.0057	0.0007	0.377	-0.2341	0.3788	-0.2227	-0.0604	-0.0517	-0.0166	-0.0053	0.0692	3.2911	1.0947	1.6611	1.0914	A-	A-	A-
MATH	6	301841	4	D-S	2	8650	0.2943	0.2834	0.1979	0.2907	0.2157	0.0115	0.0007	0.2572	0.0277	-0.1542	0.2582	-0.1534	-0.0438	-0.0211	1.4916	0.076	6.5413	1.2718	7.1915	1.5216	A+	A-	A-
MATH	6	740951	4	D-S	2	8687	0.3778	0.3748	0.2051	0.2758	0.1363	0.0075	0.0005	0.3136	0.3157	-0.1974	-0.0149	-0.1774	-0.061	-0.0148	0.9816	0.0715	5.6412	1.1977	5.8113	1.3184	A+	A-	A-
MATH	6	411367	5	A-N	1	8625	0.4006	0.1462	0.3974	0.3302	0.1182	0.0078	0.0001	0.4343	-0.0615	0.4349	-0.219	-0.2586	-0.0504	-0.0141	0.817	0.0698	-0.509	0.9842	-0.509	0.9765	A-	A+	A+
MATH	6	738180	5	A-N	1	8639	0.3761	0.1462	0.3052	0.1686	0.3737	0.0062	0.0001	0.3208	-0.0967	-0.2637	0.0128	0.3233	-0.0699	-0.0141	1.0213	0.0709	2.6311	1.0864	3.4512	1.1742	A+	A-	A-
MATH	6	401964	5	A-R	1	8619	0.3525	0.1112	0.3494	0.4884	0.0423	0.0082	0.0005	0.3729	-0.1042	0.3747	-0.1994	-0.1971	-0.0684	-0.0196	1.0608	0.0712	4.6312	1.1577	5.7913	1.3086	B-	A-	A+
MATH	6	745962	5	B-E	1	8516	0.7875	0.0366	0.1353	0.0363	0.7713	0.0204	0.0001	0.5029	-0.2256	-0.3521	-0.1933	0.5007	-0.0794	-0.0114	-1.2754	0.0805	-4.3592	0.8282	-3.8293	0.6625	A+	A-	A-
MATH	6	745967	5	B-E	2	8354	0.5662	0.1473	0.0924	0.5441	0.1771	0.023	0.0161	0.3058	-0.1761	-0.2172	0.3091	-0.0387	-0.0953	0.0034	0.0955	0.0685	4.2111	1.1186	4.0612	1.2109	A+	A-	A-
MATH	6	413110	5	C-G	2	8646	0.2998	0.302	0.2981	0.2269	0.1674	0.0052	0.0003	0.1473	0.0451	0.1489	-0.1188	-0.0947	-0.054	0.0087	1.4532	0.0747	7.4813	1.3016	8.7516	1.6076	A-	A+	A-
MATH	6	740950	5	D-S	2	8608	0.3789	0.1533	0.324	0.1376	0.3752	0.0097	0.0002	0.3602	-0.1624	-0.1199	-0.161	0.3601	-0.0412	-0.0136	0.9548	0.0705	4.2311	1.1388	4.8012	1.2416	A-	A-	A-
MATH	6	745979	5	D-S	2	8606	0.3494	0.3459	0.2581	0.2686	0.1173	0.01	0.0001	0.3254	0.3268	-0.1328	-0.1272	-0.1105	-0.0528	-0.0132	1.1389	0.0718	2.9211	1.0997	3.4812	1.1847	A-	A-	A-
MATH	6	411364	6	A-N	1	8578	0.5421	0.3392	0.0601	0.054	0.5367	0.0099		0.42	-0.2134	-0.2409	-0.2036	0.4218	-0.0608		0.0792	0.0697	2.4911	1.0739	2.4211	1.1265	A+	A-	A-
MATH	6	743924	6	A-N	1	8600	0.7587	0.0629	0.7531	0.1203	0.0563	0.0072	0.0002	0.4812	-0.1993	0.4851	-0.3206	-0.2159	-0.0784	-0.0056	-1.1612	0.0792	-4.3492	0.8399	-4.4094	0.6282	A+	A-	A-
MATH	6	710027	6	A-R	2	8566	0.7846	0.1142	0.0551	0.7757	0.0437	0.011	0.0003	0.4037	-0.2148	-0.2284	0.4036	-0.2081	-0.0477	-0.0244	-1.3015	0.0815	-0.539	0.9769	-0.5391	0.9414	A+	A-	A-
MATH	6	300481	6	B-E	2	8580	0.4499	0.1721	0.4455	0.1926	0.1801	0.0083	0.0014	0.3755	-0.1422	0.3779	-0.1503	-0.1776	-0.0625	-0.0259	0.4884	0.0698	1.9711	1.0606	1.6211	1.0754	A-	A-	A-
MATH	6	314874	6	B-E	2	8603	0.5498	0.0918	0.2753	0.5459	0.08	0.0068	0.0002	0.2572	-0.1815	-0.0926	0.2612	-0.113	-0.0681	-0.003	-0.0011	0.0698	6.9412	1.2153	4.5713	1.2569	A-	A+	A-
MATH	6	745965	6	B-E	2	8576	0.5294	0.1125	0.524	0.1742	0.1791	0.0098	0.0003	0.4939	-0.233	0.4945	-0.1917	-0.2471	-0.0583	-0.0079	0.0963	0.0697	-1.8491	0.9468	-1.5191	0.9251	A+	A+	A+
MATH	6	715782	6	C-G	1	8602	0.4307	0.1162	0.3893	0.0597	0.4276	0.0072		0.6518	-0.1932	-0.4612	-0.1324	0.6511	-0.0468		0.6397	0.0701	-8.0992	0.7688	-6.6693	0.7238	A+	A-	A-
MATH	6	713405	6	D-S	2	8588	0.2719	0.2695	0.4252	0.1556	0.1409	0.0087	0.0001	0.1952	0.1976	0.1316	-0.2383	-0.1729	-0.066	-0.0085	1.6218	0.0769	8.1314	1.3521	7.7416	1.6172	A+	A-	A-
MATH	6	617213	7	A-N	1	8537	0.5115	0.2014	0.1698	0.5075	0.1134	0.0077	0.0002	0.4809	-0.192	-0.2424	0.484	-0.2104	-0.0817	-0.005	0.1927	0.0691	-1.709	0.9519	-1.7991	0.9138	A+	A-	A-
MATH	6	412072	7	A-R	2	8477	0.3474	0.1469	0.3422	0.3267	0.1693	0.0146	0.0002	0.3518	-0.1316	0.3539	-0.0602	-0.2262	-0.0678	-0.0076	1.151	0.0737	4.5412	1.1723	4.1712	1.2495	A-	A-	A-
MATH	6	622366	7	B-E	2	8501	0.2607	0.2698	0.2271	0.2575	0.2335	0.0121		0.0672	0.0096	-0.0488	0.0713	-0.0166	-0.0725		1.6869	0.0796	9.6415	1.47	9.902	1.9593	A+	A-	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	6	713651	7	B-E	2	8536	0.4303	0.4268	0.1682	0.2652	0.1318	0.0078	0.0002	0.4238	0.4252	-0.1611	-0.2725	-0.0732	-0.0546	-0.0128	0.7734	0.071	3.0911	1.1034	2.8311	1.1428	A-	A-	A+
MATH	6	746037	7	B-E	1	8528	0.4312	0.0995	0.3849	0.4273	0.0794	0.0084	0.0006	0.3949	-0.2398	-0.1016	0.3978	-0.2537	-0.0717	-0.0209	0.6312	0.0702	2.2211	1.0707	1.9611	1.0947	A+	A+	A+
MATH	6	654781	7	C-G	1	8526	0.5992	0.5937	0.1195	0.1163	0.1613	0.0085	0.0007	0.617	0.6185	-0.3037	-0.1953	-0.3682	-0.0701	-0.0307	-0.2484	0.0695	-8.5592	0.7821	-6.1193	0.6834	A+	A-	A-
MATH	6	740946	7	C-G	1	8519	0.5757	0.5699	0.061	0.1178	0.2413	0.01		0.5321	0.5335	-0.2047	-0.2257	-0.3157	-0.0735		-0.0933	0.0692	-3.5491	0.905	-3.1792	0.8366	A+	A+	A+
MATH	6	745976	7	D-S	2	8506	0.5852	0.0639	0.1184	0.2277	0.5785	0.0114	0.0001	0.4751	-0.1963	-0.2565	-0.2302	0.4783	-0.0817	-0.0132	-0.1323	0.0692	-2.1191	0.9425	-2.0891	0.8884	A-	A-	A-
MATH	6	738178	8	A-N	1	8575	0.3717	0.2205	0.1951	0.3684	0.2073	0.0086	0.0001	0.3462	-0.1755	-0.1575	0.3473	-0.0685	-0.0513	0.0096	1.0547	0.0716	4.4212	1.1544	5.1013	1.2637	A-	A-	A+
MATH	6	745961	8	A-R	2	8584	0.2457	0.328	0.2438	0.1101	0.3105	0.0075	0.0001	0.155	0.2778	0.1568	-0.196	-0.2849	-0.0519	-0.0096	1.7558	0.079	4.8612	1.2161	5.9015	1.4762	B-	A-	A-
MATH	6	711381	8	B-E	2	8528	0.0973	0.2354	0.5533	0.1013	0.096	0.0141		-0.0465	-0.0977	0.2604	-0.2231	-0.0435	-0.0669		3.2259	0.1146	5.4915	1.5073	9.9042	4.1755	A-	A+	A+
MATH	6	713649	8	B-E	2	8538	0.508	0.2397	0.5014	0.1816	0.0644	0.0127	0.0002	0.4024	-0.1146	0.4035	-0.2389	-0.2206	-0.057	-0.0116	0.2397	0.0683	1.611	1.0454	1.041	1.0442	A+	A+	A+
MATH	6	740941	8	B-E	2	8570	0.3559	0.2547	0.1597	0.3526	0.2238	0.0091	0.0001	0.3514	-0.0515	-0.2418	0.3529	-0.1251	-0.0563	-0.0087	1.0972	0.0719	3.4311	1.12	3.5312	1.1818	A+	A+	A-
MATH	6	713652	8	C-G	2	8571	0.321	0.3753	0.2086	0.318	0.089	0.0089	0.0002	0.2996	0.0115	-0.2494	0.3017	-0.1357	-0.0626	-0.0174	1.2757	0.0734	6.2412	1.2381	7.7515	1.4746	A+	A+	A+
MATH	6	614776	8	D-S	2	8551	0.3003	0.2969	0.3705	0.1638	0.1573	0.0112	0.0002	0.3096	0.3116	-0.1426	-0.081	-0.1002	-0.064	-0.0187	1.446	0.0751	3.5611	1.139	2.7712	1.1715	A-	A-	A-
MATH	6	740948	8	D-S	2	8538	0.4473	0.4415	0.2131	0.152	0.1805	0.0121	0.0008	0.4665	0.4674	-0.2474	-0.0911	-0.2364	-0.0602	-0.0198	0.6	0.0691	-0.769	0.977	-0.559	0.9763	A+	A-	A-
MATH	6	743922	9	A-N	1	8614	0.7916	0.0357	0.101	0.0702	0.7862	0.0065	0.0003	0.4037	-0.1898	-0.2193	-0.235	0.4091	-0.0752	-0.0192	-1.312	0.0802	-1.7991	0.9282	-1.4091	0.8596	A+	A-	A-
MATH	6	736746	9	A-R	2	8555	0.4919	0.1486	0.1885	0.1641	0.4852	0.013	0.0006	0.4775	-0.1703	-0.2915	-0.1533	0.4797	-0.0709	-0.0133	0.3592	0.0692	-0.099	0.9969	-0.839	0.9616	A-	A+	A-
MATH	6	740937	9	A-R	1	8597	0.6997	0.1251	0.107	0.6935	0.0656	0.0086	0.0001	0.5331	-0.317	-0.2672	0.5324	-0.2145	-0.0521	-0.0032	-0.8	0.0735	-5.5392	0.8334	-4.3193	0.6999	A-	A+	A-
MATH	6	269609	9	B-E	2	8555	0.4223	0.4166	0.1394	0.3487	0.0817	0.0134	0.0002	0.5136	0.5136	-0.2751	-0.1707	-0.2513	-0.0658	-0.0084	0.6923	0.0701	-1.189	0.9631	-0.989	0.9549	A-	A+	A-
MATH	6	745968	9	B-E	2	8572	0.4271	0.3247	0.1216	0.4221	0.1199	0.0114	0.0002	0.3119	-0.0129	-0.2445	0.3137	-0.194	-0.0541	-0.0174	0.7241	0.0703	6.1112	1.2036	5.5713	1.2759	A+	A-	A+
MATH	6	412067	9	C-G	2	8613	0.2584	0.0866	0.2296	0.2567	0.4203	0.0066	0.0003	0.3321	-0.2208	-0.3248	0.3328	0.1155	-0.0444	-0.0066	1.6165	0.0777	3.0711	1.1282	5.4114	1.4095	A-	A-	A-
MATH	6	417166	9	D-S	2	8572	0.3678	0.3635	0.1693	0.3081	0.1475	0.0113	0.0003	0.3603	0.3605	-0.0982	-0.1258	-0.208	-0.043	-0.0092	1.0494	0.0722	3.7111	1.1308	5.2813	1.2907	A+	A+	A-
MATH	6	736795	9	D-S	2	8564	0.3509	0.2471	0.3465	0.211	0.1829	0.0121	0.0005	0.227	0.06	0.2303	-0.1934	-0.1268	-0.0652	-0.0192	1.1085	0.0726	9.5114	1.3645	9.9016	1.6323	A+	A-	A-
MATH	7	319329	0	A-N	1	78465	0.2966	0.2945	0.34	0.2051	0.1533	0.0069	0.0002	0.2788	0.2807	-0.1408	-0.1474	0.0099	-0.0625	-0.01	0.9939	0.0247	9.9012	1.1849	9.9013	1.3223	A+	A+	A+
MATH	7	335226	0	A-N	1	78568	0.6441	0.1818	0.6403	0.0435	0.1286	0.0056	0.0002	0.4623	-0.3596	0.465	-0.1661	-0.1364	-0.0635	-0.0148	-0.669	0.0232	-4.549	0.9587	-3.9191	0.9266	B-	A-	A-
MATH	7	477761	0	A-N	1	78576	0.7735	0.7691	0.0573	0.0804	0.0876	0.0056	0.0001	0.5147	0.5161	-0.2242	-0.2824	-0.2982	-0.0561	-0.0122	-1.3178	0.0251	-9.8992	0.7782	-9.8994	0.6207	A-	A-	A-
MATH	7	565849	0	A-N	2	78191	0.405	0.2895	0.1674	0.4007	0.1318	0.0103	0.0003	0.3567	-0.0531	-0.2173	0.3583	-0.1909	-0.055	-0.0141	0.5076	0.0234	9.9012	1.1732	9.9012	1.2476	A-	A+	A-
MATH	7	615280	0	A-N	1	78491	0.5355	0.1631	0.083	0.2153	0.5319	0.0065	0.0003	0.4971	-0.2213	-0.2379	-0.2351	0.4982	-0.0548	-0.012	-0.1825	0.0227	-4.379	0.961	-4.3391	0.935	A+	A+	A+
MATH	7	659595	0	A-N	1	78244	0.3575	0.1154	0.4376	0.354	0.0832	0.0094	0.0005	0.5229	-0.1356	-0.3101	0.5232	-0.1706	-0.058	-0.0175	0.336	0.0231	-6.8691	0.9337	-4.8491	0.9313	B-	A+	A+
MATH	7	709909	0	A-N	2	78443	0.6613	0.1531	0.6564	0.1071	0.0761	0.007	0.0003	0.458	-0.281	0.46	-0.1982	-0.1919	-0.0573	-0.0164	-0.5626	0.023	-8.1591	0.9279	-6.8591	0.8809	A+	A-	A+
MATH	7	711510	0	A-N	1	78311	0.6062	0.1651	0.171	0.0541	0.6007	0.0086	0.0005	0.5689	-0.2852	-0.3137	-0.2154	0.5708	-0.0691	-0.0202	-0.6565	0.0231	-9.8991	0.865	-9.8992	0.8061	A-	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	7	335233	0	A-R	2	78526	0.4013	0.3174	0.1975	0.3988	0.08	0.006	0.0003	0.4503	-0.2062	-0.1753	0.4515	-0.1875	-0.0548	-0.0107	0.5359	0.0234	2.951	1.031	5.8311	1.0911	A-	A+	A+
MATH	7	413355	0	A-R	1	78499	0.3871	0.0715	0.3845	0.1519	0.3854	0.0064	0.0003	0.4558	-0.1375	0.4569	-0.2224	-0.2103	-0.0555	-0.014	0.4043	0.0232	3.661	1.0371	3.4611	1.0516	A-	A+	A+
MATH	7	567230	0	A-R	2	78591	0.7177	0.7137	0.0978	0.0954	0.0875	0.0053	0.0002	0.5407	0.5423	-0.2764	-0.2782	-0.2719	-0.0589	-0.0131	-1.1677	0.0245	-9.8992	0.8138	-9.8993	0.6706	A-	A+	A-
MATH	7	575220	0	A-R	2	78271	0.501	0.2392	0.4962	0.1354	0.1197	0.0092	0.0004	0.4224	-0.2122	0.4236	-0.2344	-0.11	-0.0542	-0.0101	0.0069	0.0228	8.3511	1.0789	5.7211	1.0854	A+	A+	A+
MATH	7	617919	0	A-R	2	78039	0.3582	0.3312	0.1229	0.1797	0.3537	0.0122	0.0003	0.4352	-0.1329	-0.2284	-0.168	0.4359	-0.0552	-0.0151	0.7174	0.0238	2.331	1.0258	4.4511	1.0741	A-	A+	A+
MATH	7	617925	0	A-R	1	78538	0.5058	0.5027	0.1573	0.2109	0.1229	0.0059	0.0003	0.4398	0.4411	-0.1672	-0.2408	-0.1747	-0.0503	-0.0134	-0.1894	0.0227	5.211	1.0477	4.4911	1.0703	A+	A-	A-
MATH	7	630491	0	A-R	2	78212	0.3827	0.2754	0.2071	0.3787	0.1285	0.01	0.0003	0.319	-0.0829	-0.1331	0.3215	-0.1745	-0.0651	-0.0071	0.5094	0.0234	9.9012	1.1908	9.9013	1.2818	A+	A+	A+
MATH	7	709907	0	A-R	2	78167	0.467	0.3284	0.4619	0.1505	0.0484	0.0105	0.0004	0.4106	-0.304	0.4119	-0.0774	-0.1346	-0.0568	-0.0135	0.1395	0.0229	9.2211	1.0895	6.5711	1.0971	A-	A-	A-
MATH	7	711391	0	A-R	2	78370	0.3173	0.3147	0.2086	0.307	0.1614	0.008	0.0003	0.4824	0.4832	-0.1117	-0.2359	-0.1755	-0.0601	-0.0156	0.9823	0.0246	-1.919	0.977	3.5711	1.0675	A-	A+	A+
MATH	7	711514	0	A-R	2	78671	0.8451	0.8413	0.056	0.0553	0.0429	0.0043	0.0002	0.4394	0.4403	-0.2458	-0.2459	-0.2218	-0.0458	-0.0151	-2.0296	0.0293	-9.8992	0.8212	-9.8994	0.5629	A+	A-	A+
MATH	7	404813	0	B-E	2	78358	0.5298	0.1813	0.5253	0.1899	0.095	0.0081	0.0003	0.5134	-0.2811	0.5143	-0.2342	-0.1751	-0.0572	-0.01	0.1033	0.0228	-3.509	0.9674	-3.9791	0.9439	A-	A-	A-
MATH	7	493996	0	B-E	2	78529	0.5639	0.0831	0.5604	0.2235	0.1268	0.0061	0.0002	0.4567	-0.0916	0.458	-0.3027	-0.2161	-0.0493	-0.0137	-0.3687	0.0228	-0.939	0.9916	-2.089	0.9659	A-	A-	A+
MATH	7	503046	0	B-E	1	78314	0.5812	0.0873	0.1752	0.1525	0.576	0.0085	0.0005	0.5678	-0.2789	-0.3131	-0.2149	0.5687	-0.0621	-0.0149	-0.3996	0.0228	-9.8992	0.8463	-9.8992	0.7892	A+	A-	A-
MATH	7	565851	0	B-E	2	78110	0.5056	0.4998	0.1597	0.1503	0.1786	0.0112	0.0004	0.5428	0.5435	-0.2587	-0.2808	-0.1815	-0.0655	-0.0127	-0.1968	0.0227	-9.8991	0.9082	-9.1891	0.8653	A-	A+	A+
MATH	7	617258	0	B-E	1	78485	0.5401	0.2152	0.1626	0.5364	0.0789	0.0066	0.0002	0.5221	-0.3371	-0.2107	0.524	-0.1466	-0.0661	-0.0085	-0.2364	0.0227	-7.8491	0.9311	-7.6991	0.8847	A-	A-	A-
MATH	7	711393	0	B-E	1	78244	0.3936	0.1945	0.2035	0.2024	0.3897	0.0096	0.0003	0.4203	-0.1888	-0.152	-0.1598	0.4211	-0.0511	-0.0141	0.4	0.0232	3.431	1.0348	3.281	1.0488	A+	A+	A+
MATH	7	711517	0	B-E	2	78402	0.3037	0.1552	0.1973	0.3013	0.3383	0.0076	0.0003	0.3681	-0.1628	-0.2167	0.3695	-0.04	-0.0602	-0.0124	0.8903	0.0243	3.971	1.0468	9.9012	1.1936	A-	A+	A+
MATH	7	713657	0	B-E	2	78565	0.5451	0.0906	0.5419	0.2973	0.0644	0.0056	0.0002	0.5863	-0.239	0.5872	-0.3497	-0.2434	-0.0559	-0.0141	-0.1587	0.0227	-9.8992	0.8465	-9.8992	0.7824	A+	A-	A-
MATH	7	713660	0	B-E	2	75245	0.3068	0.2168	0.1821	0.2612	0.2921	0.0075	0.0404	0.255	-0.0871	-0.1458	-0.0301	0.2552	-0.0527	-0.0311	1.0496	0.0248	9.9012	1.2062	9.9014	1.4446	A-	A+	A+
MATH	7	496123	0	C-G	2	78126	0.3326	0.1337	0.1638	0.3288	0.3624	0.0111	0.0003	0.3098	-0.011	-0.2266	0.3121	-0.1083	-0.0642	-0.0118	0.8651	0.0242	9.9012	1.2094	9.9013	1.347	A-	A-	A-
MATH	7	567235	0	C-G	1	78411	0.4347	0.1	0.1626	0.2983	0.4313	0.0074	0.0004	0.4262	-0.2707	-0.2365	-0.0829	0.4279	-0.0629	-0.0084	0.1235	0.0228	4.871	1.0465	4.7211	1.0692	A+	A-	A-
MATH	7	575224	0	C-G	2	77884	0.491	0.1345	0.1771	0.4839	0.19	0.014	0.0005	0.4011	-0.2232	-0.1531	0.4032	-0.1502	-0.0654	-0.0133	0.1384	0.0229	9.9011	1.1104	7.7811	1.1157	A+	A+	A+
MATH	7	576068	0	C-G	2	78217	0.5854	0.1243	0.1616	0.5794	0.1244	0.0098	0.0004	0.4079	-0.1555	-0.2341	0.4104	-0.1778	-0.0632	-0.01	-0.6942	0.0232	9.9011	1.104	8.8412	1.1814	A+	A+	A+
MATH	7	613069	0	C-G	2	78270	0.4075	0.4058	0.4036	0.1034	0.0776	0.0093	0.0003	0.3747	-0.2275	0.3766	-0.1824	-0.0432	-0.0594	-0.0141	0.3331	0.0231	9.9011	1.122	9.9012	1.1708	A-	A+	A+
MATH	7	706370	0	C-G	2	78617	0.6467	0.1322	0.1381	0.6434	0.0812	0.005	0.0001	0.5957	-0.3264	-0.3675	0.5963	-0.163	-0.0514	-0.0115	-0.7296	0.0233	-9.8992	0.7964	-9.8993	0.6961	A-	A-	A-
MATH	7	709902	0	C-G	1	78554	0.5338	0.2942	0.1483	0.5306	0.0209	0.0057	0.0002	0.5554	-0.3594	-0.2565	0.5562	-0.1295	-0.0533	-0.0084	-0.0891	0.0227	-9.8991	0.9071	-8.9791	0.8723	A-	A-	A-
MATH	7	709903	0	C-G	1	78099	0.3783	0.1648	0.1531	0.2966	0.3739	0.0112	0.0005	0.4334	-0.1823	-0.2806	-0.074	0.4356	-0.0768	-0.0101	0.7372	0.0239	7.4211	1.0843	6.9011	1.1175	A-	A-	A-
MATH	7	715806	0	C-G	2	78480	0.4764	0.3007	0.1705	0.4731	0.0489	0.0066	0.0003	0.4974	-0.2625	-0.2653	0.4985	-0.1113	-0.0564	-0.0113	-0.047	0.0227	-1.869	0.983	-1.789	0.9739	A+	A-	A-
MATH	7	399256	0	D-S	2	78144	0.3848	0.3805	0.2397	0.2571	0.1115	0.0109	0.0003	0.5204	0.5208	-0.1999	-0.2271	-0.1961	-0.061	-0.0143	0.3563	0.0231	-8.1791	0.9211	-5.6491	0.9201	A+	A+	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	7	480396	0	D-S	1	78478	0.6549	0.0926	0.6504	0.1089	0.1412	0.0067	0.0002	0.4549	-0.1472	0.4563	-0.2784	-0.2408	-0.0511	-0.0117	-0.5691	0.023	-4.019	0.964	-3.2191	0.9427	A-	A-	A-
MATH	7	500379	0	D-S	2	78143	0.5339	0.2061	0.5279	0.1306	0.1243	0.0108	0.0004	0.4546	-0.1711	0.4581	-0.2865	-0.1649	-0.0805	-0.0125	-0.3382	0.0228	2.821	1.0255	5.2811	1.0882	A+	A-	A-
MATH	7	713416	0	D-S	1	78182	0.4705	0.4654	0.2689	0.1864	0.0686	0.0104	0.0003	0.5372	0.5372	-0.2111	-0.3068	-0.1941	-0.0543	-0.0176	0.1338	0.0228	-8.7091	0.9201	-7.3191	0.8986	A-	A+	A-
MATH	7	745983	1	A-N	2	8789	0.6228	0.6178	0.1511	0.0784	0.1446	0.0076	0.0005	0.366	0.3702	-0.1299	-0.1998	-0.2082	-0.0724	-0.0075	-0.669	0.068	0.541	1.0136	-0.359	0.982	A-	A-	A+
MATH	7	401995	1	A-R	2	8793	0.3634	0.216	0.3606	0.3343	0.0815	0.007	0.0006	0.262	-0.0599	0.2643	-0.0645	-0.2436	-0.0549	-0.0251	0.5108	0.0708	7.1212	1.2491	8.0014	1.4083	A-	A-	A-
MATH	7	740972	1	A-R	2	8778	0.4834	0.1178	0.2131	0.1809	0.4789	0.0088	0.0005	0.4769	-0.2345	-0.2491	-0.1436	0.4786	-0.0616	-0.0198	0.1239	0.0685	-2.7291	0.9234	-2.9591	0.8855	A+	A+	A+
MATH	7	296709	1	B-E	2	8799	0.3733	0.3708	0.2722	0.1871	0.163	0.0069		0.2776	0.2791	-0.0998	-0.1799	-0.0444	-0.046		0.4731	0.0705	5.2212	1.1765	4.8512	1.2316	A-	A+	A+
MATH	7	655930	1	B-E	2	8761	0.5116	0.2239	0.5059	0.1526	0.1064	0.0111	0.0001	0.4241	-0.2315	0.4263	-0.1543	-0.1768	-0.0622	-0.0103	-0.1597	0.0676	-1.449	0.9614	-1.159	0.954	A-	A-	A-
MATH	7	658386	1	C-G	2	8814	0.3559	0.1933	0.2401	0.3541	0.2073	0.0049	0.0003	0.195	-0.1394	-0.0577	0.1966	-0.027	-0.0486	0.0009	0.4317	0.0702	8.3913	1.2891	8.2114	1.4044	A+	A-	A-
MATH	7	737109	1	C-G	2	8748	0.4553	0.0589	0.2991	0.4495	0.1798	0.0123	0.0003	0.2844	-0.1084	-0.1868	0.2867	-0.0664	-0.0546	-0.0038	0.0573	0.0682	5.7812	1.1714	5.0312	1.2129	A-	A-	A-
MATH	7	706374	1	D-S	1	8791	0.5751	0.1021	0.5707	0.1324	0.187	0.0074	0.0003	0.2504	-0.0769	0.2545	-0.0795	-0.1801	-0.0611	-0.0148	-0.5602	0.0677	5.7812	1.1547	5.1213	1.2515	A+	A+	A-
MATH	7	737103	2	A-N	2	8737	0.6809	0.0812	0.0927	0.6757	0.1428	0.0073	0.0003	0.4211	-0.1937	-0.1918	0.4269	-0.2387	-0.0876	-0.019	-0.9902	0.0717	-2.7391	0.9198	-2.4292	0.8462	A+	A-	A-
MATH	7	632641	2	A-R	2	8752	0.8694	0.0329	0.0504	0.8643	0.0465	0.0058	0.0001	0.373	-0.1758	-0.2162	0.377	-0.2165	-0.0629	-0.0088	-2.2824	0.0951	-1.1391	0.9301	-2.9494	0.6412	A+	A-	A-
MATH	7	740995	2	A-R	2	8751	0.6039	0.106	0.1494	0.1383	0.6003	0.0056	0.0005	0.5151	-0.2451	-0.244	-0.2512	0.5154	-0.0426	-0.0059	-0.5908	0.0691	-3.2191	0.9147	-2.6091	0.8676	A-	A+	A-
MATH	7	656010	2	B-E	2	8748	0.5218	0.5185	0.3187	0.0846	0.0718	0.0059	0.0005	0.4559	0.4576	-0.2188	-0.2236	-0.2309	-0.0589	-0.0148	-0.1357	0.0682	-0.579	0.9841	-0.449	0.98	A-	A+	A-
MATH	7	737107	2	B-E	2	8745	0.6229	0.1428	0.1801	0.6187	0.0517	0.0066	0.0001	0.5125	-0.2707	-0.3196	0.5127	-0.1253	-0.045	-0.0097	-0.7032	0.0697	-4.0891	0.8909	-4.1592	0.7832	B-	A-	A-
MATH	7	413358	2	C-G	2	8732	0.3354	0.0973	0.3327	0.4022	0.1596	0.008	0.0002	0.2557	0.0288	0.2583	-0.1162	-0.1837	-0.0657	-0.0131	0.8469	0.0724	5.4012	1.1973	5.3113	1.2918	A-	A-	A-
MATH	7	715809	2	D-S	2	8745	0.322	0.3008	0.1464	0.2263	0.3199	0.0059	0.0008	0.2124	0.095	-0.2213	-0.1457	0.2143	-0.0479	-0.0229	0.9717	0.0736	6.2112	1.2392	6.4514	1.3892	A+	A-	A-
MATH	7	741022	2	D-S	2	8712	0.3158	0.1495	0.3125	0.2857	0.2419	0.0095	0.0009	0.2741	-0.1045	0.275	-0.0903	-0.1048	-0.048	0.0047	1.0081	0.0739	3.2011	1.1205	5.8914	1.3595	A-	A-	A-
MATH	7	737104	3	A-N	2	8678	0.5341	0.0668	0.0929	0.3017	0.5289	0.0091	0.0006	0.5167	-0.2033	-0.2409	-0.2885	0.5168	-0.0464	-0.0181	-0.1867	0.0686	-4.1491	0.8901	-3.6092	0.8289	A+	A+	A+
MATH	7	745984	3	A-N	2	8693	0.4041	0.1546	0.1614	0.2751	0.4009	0.0074	0.0006	0.4158	-0.118	-0.2693	-0.1269	0.4184	-0.0718	-0.0193	0.495	0.0703	-0.549	0.9823	-0.519	0.9752	A-	A-	A-
MATH	7	740973	3	A-R	2	8705	0.5837	0.1946	0.1191	0.0999	0.5798	0.0064	0.0002	0.5481	-0.3053	-0.2516	-0.2127	0.5495	-0.0611	-0.0125	-0.4409	0.069	-5.9492	0.847	-4.8693	0.7501	A-	A-	A-
MATH	7	740994	3	A-R	2	8659	0.4536	0.4482	0.149	0.2871	0.1037	0.0118	0.0001	0.1788	0.1819	-0.1138	-0.0484	-0.0741	-0.0497	-0.0079	0.2641	0.0693	9.0313	1.2926	6.5413	1.3276	A+	A+	A-
MATH	7	741008	3	B-E	2	8698	0.3741	0.2129	0.2455	0.3713	0.1628	0.0073	0.0001	0.2304	-0.0199	-0.1208	0.2326	-0.129	-0.0532	-0.007	0.6604	0.0713	6.8012	1.2409	6.5114	1.3499	A+	A-	A-
MATH	7	745996	3	B-E	2	8667	0.4691	0.2108	0.2044	0.1099	0.464	0.0108	0.0001	0.4888	-0.1384	-0.2707	-0.233	0.4895	-0.0547	0.0022	0.1487	0.0689	-1.179	0.9658	-1.4191	0.9353	A+	A+	A-
MATH	7	741017	3	C-G	2	8673	0.5111	0.1115	0.2052	0.5059	0.1672	0.0098	0.0005	0.4207	-0.1889	-0.1537	0.4235	-0.2231	-0.069	-0.0061	-0.0804	0.0686	1.281	1.0358	0.341	1.0159	A-	A-	A-
MATH	7	413361	3	D-S	2	8718	0.4303	0.1153	0.428	0.2989	0.1527	0.0049	0.0002	0.3636	-0.1549	0.3655	-0.1577	-0.1522	-0.0603	-0.0164	0.2905	0.0694	1.071	1.032	0.901	1.041	A-	A-	A-
MATH	7	301881	4	A-N	2	8717	0.4268	0.1224	0.423	0.2972	0.1486	0.0084	0.0003	0.3306	-0.1572	0.3329	-0.1232	-0.1435	-0.0579	-0.0152	0.3901	0.0693	3.4511	1.105	2.8611	1.1314	A-	A-	A-
MATH	7	745981	4	A-N	2	8735	0.5977	0.5937	0.0739	0.077	0.2487	0.0065	0.0002	0.383	0.3866	-0.1646	-0.1752	-0.2184	-0.0695	-0.0086	-0.5308	0.0694	0.751	1.0206	0.421	1.0228	A-	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	7	303013	4	A-R	2	8670	0.5285	0.2074	0.1426	0.521	0.1149	0.014	0.0001	0.5558	-0.2629	-0.2573	0.5556	-0.2315	-0.0615	0.0003	-0.1744	0.0684	-4.4191	0.8841	-4.1092	0.8163	A-	A-	A-
MATH	7	741009	4	B-E	2	8687	0.6451	0.1033	0.6373	0.1593	0.088	0.0119	0.0002	0.4541	-0.199	0.4539	-0.2316	-0.2382	-0.048	-0.0144	-0.7506	0.0706	-2.4091	0.9316	-2.1091	0.8712	B+	A+	A-
MATH	7	745994	4	B-E	2	8705	0.6711	0.6643	0.1386	0.0892	0.0978	0.0086	0.0015	0.5375	0.5368	-0.251	-0.272	-0.2823	-0.0475	-0.0259	-0.9465	0.0721	-6.0292	0.8254	-4.8993	0.6908	A+	A-	A-
MATH	7	303084	4	C-G	2	8724	0.3404	0.3861	0.147	0.1212	0.3377	0.0078	0.0001	0.422	-0.0523	-0.2908	-0.2021	0.4234	-0.0643	-0.0161	0.8567	0.0722	0.601	1.0199	1.2811	1.0664	A+	A-	A-
MATH	7	745999	4	C-G	2	8712	0.5339	0.0882	0.5289	0.122	0.2515	0.0092	0.0001	0.5025	-0.2303	0.5026	-0.2665	-0.2153	-0.0515	0.0003	-0.2244	0.0685	-1.9191	0.9484	0.461	1.0215	A-	A-	A-
MATH	7	405356	4	D-S	2	8727	0.4266	0.1287	0.3426	0.4234	0.0977	0.0072	0.0005	0.4901	-0.2727	-0.2172	0.4913	-0.1449	-0.0636	0.0025	0.3234	0.0691	0.131	1.0036	-0.139	0.9934	A-	A-	A-
MATH	7	740967	5	A-N	2	8694	0.3195	0.147	0.2689	0.3176	0.2604	0.0062		0.1019	-0.1481	-0.0003	0.1048	0.0202	-0.0648		0.9196	0.073	9.9015	1.4596	9.9017	1.7157	A+	A-	A+
MATH	7	300461	5	A-R	2	8670	0.4597	0.4556	0.1591	0.2018	0.1746	0.0088	0.0001	0.4881	0.4883	-0.2551	-0.1766	-0.1953	-0.051	-0.0132	0.2066	0.0685	-1.649	0.954	-1.4791	0.9372	A-	A-	A-
MATH	7	745988	5	A-R	2	8671	0.577	0.1086	0.1228	0.1879	0.5719	0.0083	0.0005	0.5902	-0.314	-0.2698	-0.2569	0.5906	-0.0583	-0.0168	-0.4547	0.0685	-8.1892	0.7975	-5.7493	0.7292	A+	A+	A-
MATH	7	711394	5	B-E	2	8668	0.2916	0.289	0.2567	0.2994	0.1457	0.0088	0.0003	0.2649	0.2673	-0.0912	-0.0799	-0.11	-0.062	-0.0065	1.0718	0.0746	3.2611	1.1249	4.9613	1.3122	A-	A+	A+
MATH	7	777278	5	B-E	2	8659	0.3798	0.2965	0.2139	0.376	0.1035	0.0101	0.0001	0.4223	-0.183	-0.1579	0.4234	-0.167	-0.0596	0.0051	0.5381	0.07	2.2911	1.0719	2.6211	1.1227	A-	A-	A-
MATH	7	741015	5	C-G	2	8695	0.3767	0.2661	0.3744	0.2091	0.1444	0.0055	0.0006	0.1827	-0.0097	0.1849	-0.2011	0.0015	-0.0503	-0.0102	0.6006	0.0704	7.2112	1.2434	6.3113	1.3196	A+	A-	A-
MATH	7	741018	5	C-G	2	8661	0.4031	0.1175	0.2209	0.2526	0.3991	0.0085	0.0015	0.4108	-0.2198	-0.2354	-0.0636	0.4123	-0.0629	-0.0013	0.508	0.0698	1.281	1.0394	1.7711	1.0807	A+	A-	A-
MATH	7	741023	5	D-S	2	8644	0.6937	0.0694	0.0714	0.6854	0.1619	0.0115	0.0003	0.5013	-0.2617	-0.2177	0.5002	-0.2821	-0.0525	-0.0091	-1.0599	0.0723	-4.6591	0.8624	-2.3392	0.8378	A+	A-	A-
MATH	7	740969	6	A-N	2	8687	0.3099	0.2008	0.2754	0.2083	0.3074	0.0078	0.0003	0.4241	-0.0394	-0.2706	-0.1325	0.4258	-0.0639	-0.0206	1.0062	0.0737	1.001	1.0352	2.0011	1.1177	A+	A+	A-
MATH	7	745985	6	A-R	2	8695	0.7171	0.7119	0.1103	0.1052	0.0654	0.0072		0.5284	0.5298	-0.2872	-0.2731	-0.2471	-0.06		-1.1282	0.0736	-6.8892	0.7891	-5.8094	0.6293	A+	A+	A-
MATH	7	745986	6	A-R	2	8702	0.557	0.1161	0.1245	0.5534	0.1996	0.0063	0.0001	0.4181	-0.1645	-0.2041	0.4195	-0.2115	-0.0495	-0.0006	-0.3015	0.0686	1.8311	1.0512	1.1611	1.0557	A+	A+	A-
MATH	7	413356	6	B-E	2	8688	0.4099	0.1492	0.2213	0.4066	0.2149	0.007	0.001	0.3176	-0.0308	-0.1882	0.3199	-0.1532	-0.0536	-0.0204	0.4437	0.0696	5.6612	1.1778	4.7912	1.23	A+	A+	A+
MATH	7	741011	6	B-E	2	8656	0.6299	0.6225	0.1733	0.1084	0.0842	0.0114	0.0002	0.47	0.4721	-0.177	-0.2608	-0.2652	-0.0653	-0.0151	-0.6961	0.0702	-2.4991	0.9289	-1.1091	0.9365	A+	A+	A+
MATH	7	737110	6	C-G	2	8686	0.5799	0.135	0.2148	0.5751	0.0669	0.0079	0.0003	0.5048	-0.2618	-0.2905	0.506	-0.1447	-0.0529	-0.0291	-0.4762	0.0691	-2.3491	0.9353	-2.1291	0.8938	A+	A-	A-
MATH	7	737111	6	C-G	2	8686	0.3243	0.224	0.3216	0.2458	0.2003	0.008	0.0002	0.4739	-0.1753	0.4746	-0.2779	-0.0602	-0.0517	-0.017	0.947	0.0731	-1.8691	0.9368	0.101	1.0047	A+	A-	A-
MATH	7	715811	6	D-S	1	8643	0.5193	0.1197	0.1858	0.169	0.5124	0.013	0.0001	0.6049	-0.2756	-0.3011	-0.2367	0.604	-0.0581	-0.0052	-0.1146	0.0684	-7.5792	0.8041	-5.6592	0.7667	A-	A-	A+
MATH	7	412772	7	A-N	1	8728	0.51	0.1175	0.1714	0.1972	0.5059	0.0077	0.0003	0.5595	-0.1527	-0.3272	-0.2575	0.5602	-0.0559	-0.0133	-0.1086	0.0677	-4.9091	0.8756	-3.8092	0.8473	A-	A-	A-
MATH	7	740966	7	A-N	2	8738	0.2765	0.3419	0.1156	0.2746	0.2611	0.0068	0.0001	0.514	0.0134	-0.192	0.5147	-0.3863	-0.06	-0.008	1.1889	0.0762	-2.4091	0.9076	-1.7491	0.8944	A-	A+	A-
MATH	7	266614	7	A-R	2	8729	0.4261	0.2231	0.4227	0.2321	0.1142	0.0078	0.0001	0.4169	-0.1866	0.4181	-0.1871	-0.1412	-0.0563	-0.0043	0.341	0.0689	0.211	1.006	-0.309	0.9866	A+	A+	A+
MATH	7	740974	7	A-R	2	8737	0.5436	0.5397	0.1516	0.1459	0.1557	0.006	0.001	0.5335	0.5353	-0.2453	-0.1554	-0.3267	-0.0613	-0.0255	-0.2067	0.0677	-4.0491	0.8977	-2.8291	0.8817	A+	A+	A-
MATH	7	706368	7	B-E	1	8707	0.5702	0.0716	0.2091	0.1446	0.5643	0.01	0.0005	0.5314	-0.2431	-0.3157	-0.1895	0.5312	-0.056	-0.0063	-0.4044	0.068	-5.3391	0.8675	-4.6292	0.7977	A+	A+	A-
MATH	7	737108	7	B-E	2	8476	0.2834	0.273	0.1791	0.3179	0.1933	0.0089	0.0278	0.3096	0.3097	-0.0378	-0.1818	-0.0743	-0.0615	-0.0227	1.2183	0.0766	4.1612	1.1743	5.6214	1.3952	A-	A-	A-
MATH	7	706372	7	C-G	2	8723	0.2757	0.2733	0.2991	0.2631	0.1558	0.0084	0.0002	0.0744	0.0773	0.098	-0.0964	-0.0866	-0.0595	-0.0042	1.242	0.0769	9.9015	1.5041	9.902	2.0245	A+	A-	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	7	303097	7	D-S	2	8733	0.4509	0.1841	0.4476	0.2345	0.1264	0.0073	0.0002	0.2859	-0.0456	0.2881	-0.1221	-0.2088	-0.0513	-0.0093	0.2118	0.0684	4.7111	1.1385	3.8212	1.1641	A-	A-	A-
MATH	7	740971	8	A-N	2	8680	0.2431	0.2416	0.4739	0.2032	0.0751	0.0061	0.0001	0.2874	0.289	0.0073	-0.2298	-0.1121	-0.0665	-0.0151	1.4833	0.0799	2.1511	1.0952	4.4414	1.3595	A-	A+	A-
MATH	7	301882	8	A-R	2	8618	0.4139	0.2877	0.4084	0.2307	0.0599	0.0127	0.0006	0.4468	-0.1585	0.4478	-0.2132	-0.2152	-0.0624	-0.0208	0.3957	0.0692	0.021	1.0002	0.481	1.0206	A-	A-	A+
MATH	7	740975	8	A-R	2	8696	0.5862	0.0663	0.2797	0.5837	0.0659	0.0041	0.0002	0.5262	-0.2125	-0.3303	0.5274	-0.2233	-0.0483	-0.0201	-0.499	0.0686	-4.3191	0.8881	-3.5692	0.8223	A-	A-	A-
MATH	7	300418	8	B-E	2	8674	0.4511	0.448	0.2191	0.1786	0.1474	0.0062	0.0007	0.3262	0.3287	-0.1343	-0.1806	-0.0954	-0.0547	-0.0245	0.2646	0.0686	3.0711	1.0895	2.5111	1.1109	A+	A+	A+
MATH	7	745993	8	B-E	2	8633	0.5005	0.1156	0.1399	0.2381	0.4947	0.011	0.0006	0.5657	-0.2939	-0.2766	-0.2028	0.5655	-0.0558	-0.0237	-0.0301	0.068	-5.0991	0.8683	-4.3792	0.8186	A+	A-	A+
MATH	7	741020	8	C-G	2	8639	0.4036	0.2531	0.3992	0.2291	0.1076	0.0105	0.0003	0.4435	-0.201	0.445	-0.1071	-0.2535	-0.0631	-0.0304	0.4822	0.0696	-0.279	0.9912	0.281	1.012	A+	A-	A-
MATH	7	706373	8	D-S	1	8674	0.6969	0.0616	0.0867	0.6921	0.1527	0.0065	0.0003	0.4563	-0.2068	-0.2375	0.4591	-0.25	-0.0617	-0.0268	-1.0994	0.0727	-3.4791	0.8935	-2.3192	0.8379	A+	A-	A-
MATH	7	741024	8	D-S	2	8671	0.5417	0.1371	0.5378	0.1762	0.1417	0.007	0.0002	0.511	-0.1478	0.512	-0.2955	-0.2496	-0.0527	-0.0259	-0.2526	0.068	-3.4791	0.9101	-2.7791	0.8739	A-	A-	A-
MATH	7	745980	9	A-N	2	8684	0.522	0.0605	0.1227	0.2903	0.5171	0.0091	0.0002	0.5291	-0.2074	-0.2434	-0.283	0.5321	-0.082	-0.0208	-0.1702	0.069	-4.2191	0.8855	-3.7492	0.8265	A-	A-	A-
MATH	7	706367	9	A-R	2	8683	0.5877	0.0768	0.5821	0.1668	0.1648	0.0076	0.0018	0.5255	-0.1815	0.5271	-0.3041	-0.2475	-0.0568	-0.0344	-0.4592	0.0695	-4.0791	0.8897	-3.2292	0.8298	A-	A-	A-
MATH	7	737106	9	A-R	2	8694	0.4557	0.1594	0.2473	0.452	0.1331	0.0073	0.0009	0.4847	-0.2167	-0.2013	0.4854	-0.2079	-0.0504	-0.0145	0.1944	0.0693	-0.289	0.9912	-0.019	0.9986	A-	A-	A-
MATH	7	301885	9	B-E	2	8678	0.4809	0.076	0.476	0.377	0.0609	0.0098	0.0002	0.4898	-0.2182	0.4909	-0.2547	-0.2432	-0.0564	-0.0124	0.1022	0.0691	-1.539	0.9557	-1.4291	0.9359	A-	A-	A-
MATH	7	741007	9	B-E	2	8682	0.4891	0.4844	0.1507	0.2238	0.1315	0.0091	0.0005	0.5087	0.5095	-0.223	-0.2158	-0.236	-0.0506	-0.0162	0.0175	0.069	-3.0091	0.9156	-3.0891	0.863	A+	A+	A-
MATH	7	319292	9	C-G	2	8696	0.3945	0.179	0.1866	0.3914	0.235	0.0078	0.0002	0.2335	0.0178	-0.2033	0.2352	-0.0907	-0.0455	0.0037	0.5239	0.0705	6.9512	1.2365	6.6413	1.339	A+	A+	A+
MATH	7	745998	9	C-G	2	8708	0.4644	0.0995	0.2001	0.2325	0.4613	0.0063	0.0003	0.4436	-0.1615	-0.2046	-0.2044	0.4457	-0.0653	-0.0252	0.2446	0.0694	-0.879	0.9735	-0.999	0.955	A-	A+	A-
MATH	7	715816	9	D-S	2	8695	0.1565	0.2519	0.2758	0.3089	0.1553	0.0079	0.0002	0.1631	0.2234	-0.2049	-0.1289	0.1646	-0.0579	-0.0221	2.1452	0.0911	4.9113	1.2913	8.9023	2.2613	B-	A-	A-
MATH	8	335243	0	A-N	1	76870	0.6104	0.1774	0.6041	0.11	0.0982	0.0098	0.0005	0.5278	-0.2394	0.5312	-0.277	-0.2453	-0.0832	-0.0204	-0.639	0.0228	-9.8991	0.8847	-9.0491	0.8501	A+	A+	A+
MATH	8	416599	0	A-N	2	77221	0.7011	0.0735	0.1093	0.1144	0.6969	0.0049	0.001	0.4727	-0.2176	-0.2423	-0.2554	0.4748	-0.0506	-0.033	-0.9982	0.0234	-9.8991	0.8833	-9.4292	0.8124	A+	A+	A+
MATH	8	575467	0	A-N	1	77244	0.5249	0.098	0.5219	0.1563	0.2182	0.0053	0.0003	0.4105	-0.1552	0.4124	-0.1189	-0.272	-0.0557	-0.0165	-0.3237	0.0226	7.7111	1.0687	6.8411	1.1069	A+	A-	A+
MATH	8	617260	0	A-N	1	77148	0.4077	0.1943	0.405	0.1802	0.2138	0.0066	0.0002	0.4179	-0.1831	0.4198	-0.1444	-0.1777	-0.0636	-0.01	0.286	0.0231	7.6211	1.0774	6.9311	1.1021	A-	A+	A+
MATH	8	314876	0	B-E	2	77170	0.4696	0.1482	0.4666	0.3287	0.05	0.0063	0.0002	0.4108	-0.114	0.4129	-0.2475	-0.2029	-0.0602	-0.0181	-0.0325	0.0227	5.9411	1.0552	3.451	1.0492	A-	A-	A-
MATH	8	415801	0	B-E	2	77018	0.4352	0.1185	0.2375	0.204	0.4315	0.0082	0.0003	0.4983	-0.2214	-0.1562	-0.2575	0.4993	-0.0578	-0.017	0.2783	0.023	-3.369	0.967	-2.459	0.9653	A-	A+	A+
MATH	8	489553	0	B-E	1	77182	0.2911	0.2893	0.3478	0.1415	0.215	0.0061	0.0003	0.4881	0.4891	-0.1011	-0.1794	-0.2579	-0.0618	-0.0167	0.9282	0.0248	-2.349	0.9713	-1.259	0.9765	A-	A+	A-
MATH	8	503513	0	B-E	2	77239	0.63	0.1171	0.6264	0.1781	0.0728	0.0053	0.0004	0.4362	-0.1396	0.4375	-0.2796	-0.2164	-0.0458	-0.0131	-0.6712	0.0228	-4.059	0.9649	-3.9691	0.931	A-	A-	A+
MATH	8	574468	0	B-E	1	76856	0.4238	0.2216	0.4193	0.2131	0.1354	0.0103	0.0003	0.3737	-0.0232	0.3764	-0.2472	-0.1981	-0.067	-0.0186	0.0457	0.0227	9.9011	1.0989	8.6811	1.1263	A+	A+	A+
MATH	8	574587	0	B-E	1	76892	0.3645	0.2315	0.3608	0.2222	0.1754	0.0096	0.0005	0.3329	-0.0874	0.3345	-0.2301	-0.0587	-0.0571	-0.0097	0.3509	0.0232	9.9011	1.1329	9.9012	1.1862	A+	A+	A+
MATH	8	574948	0	B-E	1	77153	0.6218	0.6176	0.1105	0.1623	0.1028	0.0065	0.0002	0.4497	0.4519	-0.2678	-0.2197	-0.1639	-0.0568	-0.0177	-0.6988	0.0229	-3.409	0.9704	-1.649	0.9705	A+	A+	A+
MATH	8	574949	0	B-E	2	77185	0.3301	0.1286	0.328	0.3322	0.205	0.0061	0.0003	0.2986	-0.2118	0.3002	-0.0212	-0.1379	-0.0544	-0.0132	0.6108	0.0238	9.9012	1.163	9.9013	1.2687	A-	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	8	615384	0	B-E	2	77128	0.3972	0.1713	0.1434	0.3944	0.2839	0.0068	0.0003	0.3652	-0.1401	-0.1545	0.3666	-0.1506	-0.0498	-0.0151	0.3942	0.0233	9.9011	1.124	9.9012	1.1632	A-	A+	A+
MATH	8	617261	0	B-E	1	77171	0.3734	0.1106	0.4496	0.371	0.0623	0.0063	0.0002	0.4532	-0.1552	-0.2447	0.4548	-0.1818	-0.0647	-0.0147	0.4146	0.0233	-0.549	0.9943	1.031	1.0152	A+	A+	A+
MATH	8	621934	0	B-E	1	77099	0.4309	0.4277	0.2238	0.2604	0.0807	0.0072	0.0002	0.4519	0.4531	-0.2058	-0.1783	-0.202	-0.0581	-0.0173	0.121	0.0228	0.111	1.001	0.351	1.0048	A+	A+	A+
MATH	8	651117	0	B-E	1	77276	0.3981	0.2669	0.17	0.1619	0.396	0.0048	0.0003	0.5266	-0.3127	-0.1709	-0.1392	0.5276	-0.0566	-0.0187	0.2169	0.023	-7.1891	0.9317	-5.8691	0.9194	A+	A+	A+
MATH	8	658902	0	B-E	1	77199	0.5448	0.5415	0.1356	0.1494	0.1674	0.0057	0.0004	0.5518	0.553	-0.2295	-0.2915	-0.2367	-0.0572	-0.0187	-0.5618	0.0227	-9.8991	0.8907	-9.8992	0.8256	A-	A-	A-
MATH	8	706379	0	B-E	2	77071	0.5778	0.1376	0.1471	0.5733	0.1341	0.0075	0.0003	0.5002	-0.2381	-0.2647	0.502	-0.1959	-0.0628	-0.0178	-0.5061	0.0227	-8.6291	0.9272	-6.3891	0.8991	A+	A-	A-
MATH	8	709939	0	B-E	2	77279	0.6529	0.6496	0.1023	0.1858	0.0571	0.0048	0.0003	0.4271	0.4288	-0.0449	-0.3784	-0.1731	-0.0467	-0.0213	-0.8455	0.0231	-6.0891	0.9462	-1.069	0.9791	A+	A+	A+
MATH	8	711523	0	B-E	2	77192	0.5307	0.141	0.1665	0.5274	0.1588	0.0059	0.0003	0.4659	-0.187	-0.287	0.4676	-0.1555	-0.055	-0.0221	-0.1815	0.0226	-0.979	0.9913	-2.949	0.9578	A+	A+	A+
MATH	8	502450	0	B-F	2	76858	0.5186	0.1422	0.1734	0.5131	0.1607	0.0102	0.0003	0.459	-0.2002	-0.219	0.4605	-0.1938	-0.0588	-0.0135	-0.2251	0.0226	-0.279	0.9975	-1.969	0.9714	A+	A+	A+
MATH	8	565843	0	B-F	2	77316	0.5938	0.1591	0.5911	0.1	0.1452	0.0043	0.0003	0.484	-0.1908	0.4852	-0.2616	-0.2465	-0.0472	-0.0206	-0.5896	0.0227	-6.3191	0.9462	-7.3691	0.8797	A-	A+	A+
MATH	8	569261	0	B-F	2	77346	0.8094	0.0329	0.1379	0.8059	0.0191	0.004	0.0002	0.4496	-0.1552	-0.371	0.4516	-0.1427	-0.0504	-0.0189	-1.432	0.0249	-9.8993	0.7243	-9.8994	0.5919	B-	A-	A-
MATH	8	574959	0	B-F	1	76975	0.3174	0.3146	0.2928	0.2195	0.1641	0.0086	0.0004	0.4009	0.402	-0.1353	-0.1088	-0.2016	-0.0544	-0.0184	0.7432	0.0242	1.611	1.0186	5.3411	1.0932	A-	A+	A+
MATH	8	711408	0	B-F	1	76860	0.5765	0.086	0.139	0.5704	0.1942	0.0101	0.0005	0.4296	-0.1756	-0.202	0.4321	-0.2227	-0.0643	-0.0132	-0.3799	0.0226	3.411	1.0299	2.161	1.0337	A+	A-	A+
MATH	8	713670	0	B-F	2	76953	0.4928	0.4882	0.1683	0.1435	0.1907	0.009	0.0003	0.5307	0.5309	-0.2332	-0.2569	-0.2108	-0.0524	-0.0188	-0.0611	0.0226	-9.8991	0.8994	-8.6791	0.8823	A-	A+	A-
MATH	8	713672	0	B-F	1	77247	0.6227	0.2124	0.0847	0.0781	0.6193	0.0045	0.001	0.3444	-0.1193	-0.219	-0.2021	0.348	-0.0568	-0.0364	-0.6559	0.0228	6.2511	1.0554	4.1011	1.0738	A-	A+	A+
MATH	8	412789	0	C-G	2	77209	0.7119	0.0796	0.0722	0.1346	0.7076	0.0058	0.0003	0.5091	-0.2578	-0.2668	-0.2607	0.5107	-0.0548	-0.0204	-1.2215	0.0241	-9.8992	0.8431	-9.8992	0.7516	A+	A-	A-
MATH	8	416554	0	C-G	2	77221	0.3953	0.2694	0.1312	0.393	0.2006	0.0055	0.0004	0.4099	-0.3406	-0.1807	0.4108	0.0379	-0.0463	-0.0155	0.1642	0.0229	5.6911	1.0554	5.5511	1.0798	A-	A+	A+
MATH	8	494640	0	C-G	2	77126	0.4024	0.3996	0.1992	0.2754	0.1188	0.0067	0.0004	0.3459	0.3474	-0.1167	-0.1627	-0.1435	-0.05	-0.0179	0.2879	0.0231	9.8611	1.101	9.9012	1.1622	A-	A+	A+
MATH	8	569267	0	C-G	1	77180	0.7497	0.0989	0.0874	0.0623	0.7449	0.0062	0.0002	0.434	-0.2145	-0.252	-0.2089	0.4353	-0.0476	-0.0188	-1.139	0.0238	-9.8991	0.8539	-9.8992	0.7595	A+	A+	A+
MATH	8	662581	0	C-G	2	76948	0.5819	0.1325	0.5764	0.1733	0.1084	0.0091	0.0003	0.4651	-0.2245	0.4679	-0.2287	-0.1983	-0.0686	-0.0199	-0.5249	0.0227	-3.999	0.9658	-3.1891	0.9482	A+	A+	A-
MATH	8	706383	0	C-G	2	77265	0.3156	0.3527	0.3139	0.0537	0.2744	0.0051	0.0002	0.5524	-0.3649	0.5526	-0.0954	-0.1274	-0.0495	-0.0181	0.8512	0.0245	-9.0291	0.8958	-4.6391	0.919	A-	A-	A-
MATH	8	713421	0	C-G	2	76946	0.4256	0.2064	0.2409	0.4216	0.1217	0.0089	0.0005	0.4446	-0.2111	-0.1758	0.4461	-0.164	-0.0612	-0.0141	-0.0504	0.0227	1.191	1.0109	-0.479	0.9932	A-	A+	A+
MATH	8	713679	0	C-G	2	77338	0.6209	0.1359	0.13	0.6182	0.1116	0.0039	0.0004	0.4767	-0.2459	-0.209	0.4783	-0.236	-0.0529	-0.012	-0.5752	0.0227	-7.1591	0.9393	-6.8791	0.8881	A-	A+	A+
MATH	8	715819	0	C-G	1	77175	0.5492	0.1496	0.1929	0.1054	0.5457	0.0062	0.0003	0.5938	-0.3124	-0.264	-0.2467	0.5947	-0.0563	-0.0232	-0.3581	0.0226	-9.8992	0.8199	-9.8992	0.815	A+	A-	A-
MATH	8	618010	0	D-S	1	77272	0.5972	0.1351	0.2003	0.5941	0.0653	0.0041	0.0011	0.4766	-0.2287	-0.2302	0.4783	-0.2445	-0.0462	-0.0366	-0.7255	0.0229	-3.779	0.9671	-3.7291	0.9332	A-	A-	A-
MATH	8	623657	0	D-S	2	77369	0.5809	0.0716	0.2706	0.0752	0.5786	0.0035	0.0004	0.5519	-0.2684	-0.3082	-0.2419	0.5526	-0.0426	-0.02	-0.6182	0.0228	-9.8991	0.8949	-8.6391	0.8581	A-	A-	A-
MATH	8	625331	0	D-S	2	76482	0.4809	0.1438	0.2065	0.1608	0.4735	0.0149	0.0005	0.5394	-0.173	-0.2828	-0.2316	0.5412	-0.0782	-0.022	-0.0254	0.0227	-9.8991	0.8984	-9.8991	0.8663	A-	A+	A+
MATH	8	658908	0	D-S	2	76995	0.3091	0.2483	0.3064	0.1378	0.2986	0.0084	0.0003	0.3117	-0.1171	0.3134	-0.2013	-0.041	-0.0597	-0.0149	0.5979	0.0237	9.9011	1.127	9.9012	1.1864	A+	A-	A-
MATH	8	740976	1	B-E	2	8697	0.3701	0.111	0.0991	0.4161	0.368	0.0057	0.0001	0.4654	-0.2053	-0.1858	-0.2017	0.4674	-0.0764	-0.0202	0.445	0.071	-2.3491	0.924	-2.0791	0.9082	A+	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	8	747542	1	B-E	2	8698	0.3496	0.1022	0.3501	0.1943	0.3476	0.0053	0.0005	0.408	-0.188	-0.1222	-0.1905	0.4088	-0.0538	-0.0075	0.522	0.0717	0.941	1.0318	1.8911	1.0907	A+	A-	A+
MATH	8	747545	1	B-E	2	8614	0.4992	0.0927	0.4915	0.2103	0.1901	0.015	0.0003	0.421	-0.1728	0.4185	-0.2442	-0.1413	-0.0302	-0.0271	-0.2738	0.0672	1.141	1.0297	0.891	1.0342	A+	A-	A-
MATH	8	740985	1	B-F	2	8688	0.2409	0.1512	0.2393	0.3219	0.2807	0.0066	0.0002	0.1054	-0.168	0.1072	-0.1303	0.1767	-0.0457	-0.0227	1.0877	0.0785	6.2613	1.2892	7.1715	1.5467	A-	A-	A+
MATH	8	747549	1	B-F	2	8681	0.3574	0.1999	0.241	0.1967	0.3547	0.0073	0.0003	0.4253	-0.2372	-0.0552	-0.2027	0.4263	-0.0523	-0.0234	0.5148	0.0716	1.161	1.0393	1.9311	1.0927	A-	A-	A-
MATH	8	278589	1	C-G	2	8698	0.2944	0.1487	0.1979	0.2928	0.3549	0.0039	0.0018	0.4924	-0.1686	-0.114	0.4926	-0.2391	-0.0466	-0.0338	0.8728	0.0755	-3.0991	0.8837	-1.2491	0.9285	A-	A-	A-
MATH	8	740987	1	C-G	2	8688	0.4227	0.1677	0.2327	0.173	0.4198	0.0064	0.0005	0.4813	-0.2218	-0.2375	-0.1316	0.4825	-0.0567	-0.0276	0.2959	0.0698	-2.6191	0.9199	-2.5891	0.8943	A+	A-	A-
MATH	8	623656	1	D-S	2	8493	0.3081	0.1884	0.3076	0.1757	0.2992	0.0281	0.001	0.22	-0.0386	0.0184	-0.2204	0.2238	-0.0738	0.0061	0.8016	0.0746	6.2313	1.2542	6.4114	1.396	A+	A-	A-
MATH	8	301823	2	A-N	1	8483	0.3805	0.3738	0.1901	0.3749	0.0463	0.0144	0.0005	0.4565	-0.3769	0.0079	0.4563	-0.1676	-0.0512	-0.0151	0.4854	0.0703	1.7711	1.0564	1.4311	1.0656	A+	A-	A-
MATH	8	300399	2	B-E	2	8542	0.4998	0.4958	0.18	0.1723	0.1439	0.0075	0.0005	0.426	0.4284	-0.2059	-0.2611	-0.0872	-0.0653	-0.0097	-0.0021	0.0679	0.081	1.0018	-0.159	0.9926	A+	A+	A-
MATH	8	661386	2	B-E	2	8510	0.3118	0.1417	0.2607	0.2778	0.3081	0.0114	0.0003	0.3675	-0.1386	-0.1011	-0.1578	0.3694	-0.0661	-0.0078	0.8633	0.0737	2.1211	1.0782	3.2712	1.1868	A+	A+	A-
MATH	8	747538	2	B-E	2	8551	0.3762	0.3736	0.1725	0.3188	0.1282	0.0069	0.0001	0.4999	0.5016	-0.1741	-0.2785	-0.1217	-0.0764	-0.0121	0.4545	0.0701	-2.5691	0.9218	-1.4491	0.9354	A-	A-	A+
MATH	8	713418	2	B-F	2	8566	0.7543	0.0718	0.1027	0.7503	0.07	0.0045	0.0007	0.4722	-0.2174	-0.2654	0.4753	-0.2517	-0.0612	-0.0263	-1.4958	0.0755	-3.3591	0.8848	-3.1292	0.7542	A+	A-	A-
MATH	8	747548	2	B-F	2	8559	0.3444	0.2752	0.3424	0.1536	0.2227	0.0059	0.0001	0.3019	-0.1492	0.3034	-0.2476	0.0382	-0.0527	0.0098	0.7108	0.0721	4.5212	1.1623	5.2113	1.2839	A-	A+	A-
MATH	8	713423	2	C-G	2	8564	0.6098	0.6064	0.1721	0.1678	0.0482	0.0052	0.0002	0.4464	0.4484	-0.2751	-0.1899	-0.186	-0.0593	-0.0088	-0.6943	0.0684	-2.0191	0.9485	-2.0691	0.8912	A+	A-	A-
MATH	8	658640	2	D-S	2	8457	0.3926	0.1185	0.3856	0.2605	0.2176	0.0178	0.0001	0.1968	-0.1756	0.2025	-0.0776	0.0062	-0.0772	-0.0094	0.4353	0.0699	7.7313	1.2584	6.9013	1.3411	A+	A-	A-
MATH	8	269587	3	B-E	1	8572	0.628	0.1094	0.1559	0.6222	0.1033	0.0088	0.0003	0.4668	-0.1977	-0.2524	0.4668	-0.227	-0.0414	-0.0063	-0.7829	0.0692	-2.8591	0.9248	-2.3991	0.8621	A+	A-	A-
MATH	8	736758	3	B-E	2	8613	0.6876	0.0891	0.6845	0.1623	0.0596	0.004	0.0003	0.4963	-0.2383	0.4972	-0.3104	-0.193	-0.0438	-0.0131	-1.0428	0.0709	-5.3491	0.8536	-3.4592	0.7774	A+	A-	A-
MATH	8	740978	3	B-E	2	8596	0.1531	0.302	0.2796	0.2599	0.1521	0.0062	0.0001	0.3441	-0.1226	-0.0205	-0.1222	0.3448	-0.0576	-0.0166	1.993	0.0923	-0.649	0.9621	1.2911	1.1356	B-	A-	A-
MATH	8	736759	3	B-F	2	8572	0.5233	0.1214	0.207	0.5186	0.1439	0.0086	0.0006	0.4066	-0.1896	-0.1708	0.4078	-0.194	-0.0498	-0.0003	-0.2288	0.068	0.751	1.02	1.3611	1.0635	A+	A-	A-
MATH	8	740986	3	B-F	2	8596	0.6092	0.1763	0.0887	0.1233	0.6054	0.0059	0.0005	0.472	-0.1662	-0.2393	-0.2938	0.4716	-0.0342	0.0026	-0.7529	0.0691	-2.8591	0.9249	-0.439	0.9734	A+	A-	A-
MATH	8	319264	3	C-G	2	8573	0.3321	0.3291	0.2022	0.3097	0.15	0.0061	0.0029	0.2482	0.2478	-0.1731	-0.0034	-0.1221	-0.0375	0.0219	0.8354	0.0736	3.8211	1.1429	4.7813	1.2793	A+	A-	A-
MATH	8	713682	3	C-G	2	8603	0.4718	0.2032	0.4692	0.2385	0.0836	0.0051	0.0005	0.3223	-0.1784	0.3243	-0.113	-0.1372	-0.0469	-0.0278	-0.0368	0.0683	4.9711	1.1441	3.2812	1.1518	A-	A-	A-
MATH	8	747564	3	D-S	2	8602	0.1753	0.275	0.2178	0.3272	0.1743	0.0051	0.0006	-0.0141	0.0744	-0.1348	0.0639	-0.0128	-0.0335	-0.014	1.8585	0.0893	7.1014	1.4327	9.9025	2.516	A-	A-	A+
MATH	8	617836	4	A-N	1	8522	0.587	0.1773	0.1055	0.5831	0.1275	0.0064	0.0002	0.2609	-0.0623	-0.0864	0.2647	-0.2249	-0.0639	-0.0031	-0.5871	0.0688	6.3812	1.1819	3.9712	1.2174	A+	A-	A-
MATH	8	740956	4	A-N	1	8519	0.4688	0.4656	0.134	0.1687	0.2247	0.0066	0.0003	0.4814	0.483	-0.1113	-0.2114	-0.2833	-0.0657	-0.0127	-0.033	0.0684	-0.149	0.9955	-0.559	0.976	A+	A-	A-
MATH	8	658634	4	B-E	2	8517	0.2225	0.2374	0.2606	0.2209	0.2738	0.0064	0.0008	0.1011	0.0126	-0.0695	0.1028	-0.0296	-0.0406	-0.0362	1.4653	0.0809	8.2614	1.4097	9.9021	2.0758	A+	A-	A-
MATH	8	740980	4	B-E	2	8517	0.5618	0.1454	0.1804	0.5578	0.1092	0.0068	0.0005	0.5379	-0.2309	-0.2799	0.539	-0.2354	-0.056	-0.0318	-0.4802	0.0685	-5.3391	0.8632	-4.5792	0.7922	A+	A+	A-
MATH	8	740983	4	B-F	1	8521	0.4039	0.0747	0.2822	0.4012	0.2351	0.0052	0.0015	0.4851	-0.1399	-0.216	0.4862	-0.2338	-0.0555	-0.0304	0.3429	0.0696	-0.639	0.9805	-0.519	0.977	A+	A+	A+
MATH	8	740984	4	B-F	2	8503	0.4175	0.1316	0.1732	0.2725	0.4138	0.0086	0.0002	0.4359	-0.1878	-0.2258	-0.1368	0.4369	-0.0524	-0.0296	0.3538	0.0697	-1.6691	0.9496	-2.1391	0.9099	A+	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	8	747558	4	C-G	2	8546	0.718	0.088	0.7152	0.1271	0.0659	0.0033	0.0006	0.4235	-0.1669	0.4262	-0.3213	-0.1379	-0.0529	-0.0343	-1.3294	0.0744	-3.1591	0.8979	-3.1592	0.7705	A-	A-	A-
MATH	8	740992	4	D-S	2	8508	0.4269	0.1983	0.4234	0.1725	0.1976	0.0079	0.0003	0.2328	-0.1235	0.2341	-0.1748	0.0077	-0.0353	-0.0185	0.2725	0.0693	5.6812	1.1794	5.2912	1.2413	A-	A-	A-
MATH	8	740952	5	A-N	1	8543	0.6127	0.2208	0.6063	0.0865	0.076	0.0101	0.0003	0.5851	-0.3883	0.5867	-0.2049	-0.227	-0.0724	-0.0301	-0.7128	0.0688	-7.4492	0.8143	-5.0493	0.7477	A-	A-	A-
MATH	8	747534	5	A-N	2	8575	0.4924	0.1143	0.1279	0.262	0.4891	0.0066	0.0001	0.4786	-0.199	-0.2018	-0.2373	0.4802	-0.0582	-0.0222	-0.0812	0.0678	-1.789	0.9522	-1.6891	0.9302	A-	A-	A-
MATH	8	398629	5	B-E	2	8574	0.4277	0.2524	0.4248	0.1892	0.1268	0.0063	0.0006	0.4968	-0.2513	0.4976	-0.2297	-0.1266	-0.0543	-0.0185	0.1639	0.0684	-1.7791	0.95	-1.3991	0.9429	C-	B-	A-
MATH	8	747544	5	B-E	2	8574	0.54	0.2283	0.1052	0.5363	0.1234	0.0061	0.0007	0.4787	-0.2294	-0.2399	0.4818	-0.1947	-0.0701	-0.033	-0.3743	0.0678	-1.699	0.9561	-2.5791	0.8848	A-	A-	A+
MATH	8	416595	5	B-F	2	8569	0.2866	0.2845	0.1553	0.3538	0.199	0.0068	0.0006	0.2729	0.2733	-0.1328	-0.044	-0.1282	-0.0323	-0.0124	1.0658	0.0753	3.3111	1.1304	4.0613	1.2557	A-	A-	A+
MATH	8	314846	5	C-G	2	8584	0.2808	0.1649	0.3702	0.18	0.2792	0.0056	0.0001	0.3376	-0.2439	0.0308	-0.1885	0.3384	-0.0472	-0.0222	1.0929	0.0756	2.3111	1.0904	3.3612	1.2124	A+	A+	A-
MATH	8	747559	5	C-G	2	8593	0.4912	0.1428	0.4889	0.0836	0.28	0.0043	0.0003	0.3912	-0.221	0.3938	-0.1836	-0.1422	-0.0658	-0.0306	-0.0656	0.0678	0.041	1.0009	-0.919	0.9612	A+	A+	A-
MATH	8	747562	5	D-S	1	8578	0.4874	0.4843	0.0587	0.392	0.0586	0.0059	0.0005	0.2518	0.2543	-0.2195	-0.0427	-0.2147	-0.0467	-0.0295	-0.0692	0.0678	7.6312	1.2209	8.2414	1.3861	A-	B-	A-
MATH	8	747531	6	A-N	1	8592	0.6004	0.1234	0.597	0.1197	0.1543	0.0056	0.0001	0.4164	-0.1881	0.4178	-0.2495	-0.1624	-0.0437	-0.0159	-0.6114	0.0684	-1.499	0.9614	-1.4591	0.9221	A-	A-	A-
MATH	8	736756	6	B-E	2	8568	0.3897	0.0989	0.207	0.3864	0.2992	0.0083	0.0001	0.3885	-0.1436	-0.0567	0.3898	-0.2599	-0.0524	-0.0168	0.4195	0.0695	0.361	1.0108	0.191	1.0077	A-	A-	A-
MATH	8	740979	6	B-E	2	8603	0.2942	0.2401	0.2929	0.2437	0.2188	0.0042	0.0002	0.0928	-0.161	0.0942	-0.1194	0.193	-0.0399	-0.0031	1.0112	0.0746	8.4713	1.35	8.4516	1.5562	A+	A-	A-
MATH	8	747540	6	B-E	2	8580	0.5679	0.5639	0.1943	0.1567	0.078	0.0067	0.0003	0.4362	0.4392	-0.2294	-0.1848	-0.2021	-0.0639	-0.0249	-0.4309	0.0679	-1.229	0.9686	-1.2591	0.9384	A-	A-	A-
MATH	8	399395	6	B-F	2	8573	0.4062	0.2418	0.1642	0.403	0.1832	0.0074	0.0005	0.4052	-0.1591	-0.2749	0.4063	-0.0645	-0.0451	-0.024	0.3074	0.0689	-0.379	0.9887	-0.189	0.9915	A+	A+	A-
MATH	8	747547	6	B-F	2	8568	0.1849	0.1833	0.2943	0.1978	0.3162	0.0081	0.0003	0.0983	0.1002	-0.0252	-0.07	0.0119	-0.0505	-0.0223	1.7671	0.0862	1.3611	1.0697	5.7816	1.5922	A-	A+	A+
MATH	8	747557	6	C-G	2	8580	0.1594	0.1583	0.2097	0.2967	0.3282	0.0065	0.0006	-0.0372	-0.0352	-0.102	0.0706	0.0562	-0.0477	-0.018	2.1058	0.0937	5.3814	1.3501	9.0023	2.2843	A-	A+	A-
MATH	8	416555	6	D-S	2	8594	0.6721	0.1205	0.1353	0.0704	0.6684	0.0049	0.0006	0.3366	-0.176	-0.1482	-0.187	0.34	-0.0568	-0.0127	-0.9926	0.0708	0.531	1.0148	1.5511	1.106	A+	A+	A+
MATH	8	736754	7	A-N	1	8568	0.2401	0.1207	0.3275	0.3077	0.2388	0.0046	0.0006	0.0822	-0.1569	0.1251	-0.0868	0.0837	-0.0411	-0.0177	1.3597	0.0802	8.1814	1.4012	9.9019	1.894	A-	A-	A-
MATH	8	740953	7	A-N	2	8551	0.4008	0.3237	0.1151	0.3979	0.1562	0.0069	0.0003	0.43	-0.3857	-0.1511	0.4319	0.0635	-0.0684	-0.0068	0.318	0.0694	1.211	1.0366	0.811	1.0347	A-	A-	A-
MATH	8	736757	7	B-E	2	8544	0.2953	0.2874	0.1401	0.2929	0.2716	0.0078	0.0002	0.2345	-0.1688	-0.1469	0.2367	0.0573	-0.0645	-0.0101	0.8552	0.0736	5.4812	1.2095	6.2914	1.3774	A+	A+	A-
MATH	8	747546	7	B-E	2	8535	0.4603	0.4562	0.142	0.2703	0.1225	0.0086	0.0005	0.4294	0.4308	-0.2612	-0.1154	-0.202	-0.0634	-0.0023	0.1043	0.0684	-0.309	0.9911	-0.069	0.9964	A-	A+	A-
MATH	8	736760	7	B-F	2	8565	0.5176	0.185	0.5147	0.2238	0.0709	0.0052	0.0003	0.4594	-0.1806	0.4605	-0.2418	-0.2154	-0.0495	-0.0184	-0.2843	0.0677	-1.739	0.9546	-1.6591	0.9262	A-	B-	A-
MATH	8	747551	7	B-F	1	8564	0.6665	0.0741	0.0966	0.6627	0.1609	0.0055	0.0002	0.5142	-0.228	-0.2846	0.5154	-0.26	-0.0555	-0.0152	-0.9945	0.0703	-4.8091	0.8707	-4.2192	0.7557	A+	A-	A-
MATH	8	713677	7	C-G	2	8551	0.357	0.3545	0.2402	0.2322	0.1659	0.007	0.0002	0.2247	0.2267	-0.0634	-0.0986	-0.0948	-0.0504	-0.0185	0.686	0.072	6.0312	1.2177	6.2413	1.3405	A-	A+	A-
MATH	8	416292	7	D-S	2	8578	0.5178	0.3159	0.5157	0.1153	0.049	0.0041		0.3252	-0.1486	0.3274	-0.1558	-0.1901	-0.0587		-0.2191	0.0678	4.6611	1.1286	4.1812	1.1956	A-	A-	A-
MATH	8	416549	8	A-N	1	8527	0.3803	0.3757	0.1296	0.3709	0.1115	0.0116	0.0007	0.2775	0.28	-0.2679	0.0915	-0.2638	-0.0565	-0.0269	0.4603	0.0701	5.9112	1.1942	6.2913	1.3119	A-	A-	A-
MATH	8	747535	8	A-N	2	8575	0.5495	0.1494	0.5458	0.1544	0.1436	0.0066	0.0001	0.5475	-0.2948	0.5504	-0.2143	-0.2416	-0.0828	-0.0096	-0.4102	0.0679	-6.5892	0.8361	-5.4892	0.7637	A-	A-	A-
MATH	8	296704	8	B-E	1	8552	0.4433	0.1826	0.2187	0.4391	0.1502	0.0089	0.0005	0.3246	-0.1256	-0.1528	0.3267	-0.1271	-0.0476	-0.0266	0.203	0.0687	3.8711	1.1156	3.1611	1.1394	A+	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	8	747543	8	B-E	2	8569	0.5834	0.1427	0.5791	0.1114	0.1594	0.0064	0.001	0.4841	-0.1716	0.486	-0.2682	-0.2465	-0.056	-0.0249	-0.5107	0.0681	-1.069	0.9719	-0.139	0.9922	A-	A-	A-
MATH	8	747550	8	B-F	2	8568	0.3315	0.1021	0.4353	0.1261	0.329	0.0063	0.0013	0.2264	-0.1784	0.0193	-0.1749	0.2287	-0.0484	-0.0316	0.8158	0.073	5.0712	1.1869	5.6813	1.3327	A-	A+	A+
MATH	8	740989	8	C-G	2	8421	0.5723	0.1433	0.5582	0.161	0.1129	0.0242	0.0003	0.465	-0.1804	0.4675	-0.2306	-0.225	-0.0833	-0.0124	-0.4959	0.0681	-2.0791	0.946	-1.7291	0.9175	A+	A+	A+
MATH	8	416597	8	D-S	2	8584	0.4254	0.13	0.2022	0.423	0.2391	0.0052	0.0005	0.2746	-0.3065	-0.1232	0.2778	0.0484	-0.0663	-0.0261	0.2087	0.0688	6.0012	1.1832	5.5813	1.2552	A-	A-	A-
MATH	8	740993	8	D-S	2	8579	0.5636	0.5601	0.2379	0.131	0.0648	0.0059	0.0003	0.5035	0.5057	-0.2816	-0.2344	-0.1903	-0.0609	-0.0283	-0.4361	0.068	-4.2591	0.8917	-3.7592	0.8315	A-	A-	A-
MATH	8	651124	9	A-N	2	8457	0.4256	0.4201	0.103	0.2639	0.2002	0.012	0.0008	0.4872	0.4872	-0.2173	-0.2509	-0.1443	-0.051	-0.0172	0.2457	0.0689	-2.4691	0.9297	-1.3391	0.9428	A+	A+	A-
MATH	8	303008	9	B-E	1	8517	0.4754	0.4726	0.2317	0.127	0.1628	0.0056	0.0002	0.4979	0.499	-0.1538	-0.2929	-0.2241	-0.0509	-0.0124	-0.0035	0.068	-2.5191	0.9325	-2.8291	0.883	A+	A-	A-
MATH	8	404824	9	B-E	2	8462	0.6212	0.1007	0.0992	0.6136	0.1742	0.0107	0.0015	0.4779	-0.2349	-0.1263	0.4793	-0.3107	-0.056	-0.0342	-0.7614	0.0689	-3.7991	0.9022	-3.0892	0.8319	A-	A-	A-
MATH	8	740977	9	B-E	2	8517	0.1948	0.2895	0.1229	0.3881	0.1937	0.0055	0.0004	0.3734	-0.3666	-0.0774	0.0992	0.3744	-0.0596	-0.0146	1.6541	0.0852	-0.969	0.9517	0.601	1.0494	A-	A-	A-
MATH	8	278063	9	B-F	2	8512	0.3867	0.12	0.3787	0.3843	0.1107	0.0061	0.0004	0.291	-0.2781	0.0637	0.2925	-0.2525	-0.0425	-0.0141	0.4452	0.0701	4.0711	1.1309	3.2512	1.1523	A-	A-	A-
MATH	8	399394	9	B-F	1	8492	0.4066	0.1681	0.1374	0.2827	0.4031	0.0075	0.0013	0.4639	-0.1951	-0.1429	-0.2197	0.4667	-0.0749	-0.0389	0.3392	0.0694	0.871	1.0259	0.941	1.0407	A+	A-	A-
MATH	8	740988	9	C-G	2	8510	0.4415	0.1531	0.4385	0.2221	0.1795	0.0065	0.0001	0.281	-0.1106	0.2834	-0.081	-0.1627	-0.0568	-0.0116	0.2035	0.0687	5.6712	1.1715	6.2313	1.2899	A-	A+	A+
MATH	8	715826	9	D-S	2	8535	0.1595	0.2232	0.1589	0.2393	0.3749	0.0035	0.0002	0.0491	0.1694	0.05	-0.1706	-0.0283	-0.0346	-0.019	1.977	0.0922	5.4113	1.3419	9.9024	2.402	A-	A+	A-
SCIENCE	4	494830	0	A	2	84668	0.7458	0.05	0.1033	0.742	0.0995	0.0049	0.0003	0.3228	-0.2196	-0.1883	0.3262	-0.1114	-0.0536	-0.025	-0.2261	0.0217	3.381	1.0371	8.4512	1.1629	A+	A+	A+
SCIENCE	4	566208	0	A	2	84242	0.7717	0.7638	0.0757	0.0815	0.0688	0.0098	0.0003	0.5117	0.511	-0.2919	-0.2424	-0.2656	-0.0597	-0.0204	-0.3707	0.0224	-9.8991	0.8678	-9.8993	0.7421	A+	A+	A+
SCIENCE	4	574826	0	A	2	84413	0.4487	0.0568	0.051	0.445	0.439	0.0079	0.0003	0.456	-0.2597	-0.2427	0.4575	-0.2163	-0.0693	-0.0198	1.1115	0.0191	-6.449	0.9562	-4.769	0.9561	A-	A-	A-
SCIENCE	4	574828	0	A	2	83748	0.6679	0.0762	0.176	0.0746	0.6572	0.0156	0.0003	0.55	-0.2525	-0.3021	-0.2642	0.5481	-0.066	-0.0268	0.1001	0.0205	-8.8991	0.9206	-9.8992	0.8442	A+	A-	A-
SCIENCE	4	574831	0	A	2	83712	0.6187	0.1042	0.1252	0.1456	0.6086	0.0161	0.0003	0.5581	-0.2197	-0.264	-0.3062	0.5565	-0.0698	-0.0188	0.2857	0.02	-9.8991	0.9113	-9.8992	0.842	A-	A+	A+
SCIENCE	4	574835	0	A	2	84536	0.7245	0.1019	0.7196	0.0838	0.088	0.0064	0.0003	0.5304	-0.267	0.5315	-0.2873	-0.2581	-0.0625	-0.0177	0.0196	0.0208	-9.8992	0.8368	-9.8992	0.7519	A-	A-	A-
SCIENCE	4	574837	0	A	2	84300	0.7922	0.072	0.0623	0.7847	0.0715	0.0091	0.0003	0.4153	-0.1705	-0.2505	0.4185	-0.2345	-0.0685	-0.0243	-0.514	0.0231	-7.4991	0.9074	-3.1491	0.9324	A+	A+	A+
SCIENCE	4	576378	0	A	2	84558	0.6815	0.1116	0.0575	0.6771	0.1474	0.006	0.0004	0.4662	-0.2894	-0.2612	0.4687	-0.1741	-0.0643	-0.0265	0.0578	0.0207	-2.739	0.9745	-4.4491	0.9335	A+	A+	A+
SCIENCE	4	617348	0	A	2	84021	0.4333	0.0942	0.1795	0.2857	0.4278	0.0126	0.0001	0.3024	-0.212	-0.1125	-0.086	0.3044	-0.0575	-0.0156	1.4202	0.0192	9.9011	1.1103	9.9011	1.1475	A+	A+	A-
SCIENCE	4	620948	0	A	2	83976	0.4463	0.149	0.4404	0.1761	0.2212	0.0127	0.0006	0.3595	-0.2187	0.3599	-0.2037	-0.0424	-0.0459	-0.0195	1.4632	0.0193	9.3911	1.0693	9.9011	1.1188	A+	A-	A-
SCIENCE	4	620971	0	A	2	84377	0.6003	0.1143	0.5952	0.2155	0.0665	0.0083	0.0003	0.3406	-0.1902	0.3435	-0.1389	-0.1812	-0.0606	-0.0208	0.7645	0.0192	7.4011	1.0537	6.8111	1.0703	A-	A-	A-
SCIENCE	4	621088	0	A	2	84405	0.3758	0.3232	0.1151	0.3727	0.1808	0.0079	0.0003	0.3284	-0.1151	-0.1546	0.3297	-0.1327	-0.0554	-0.0155	1.7087	0.0196	6.9411	1.0551	9.9011	1.1362	A-	A-	A-
SCIENCE	4	622825	0	A	3	84156	0.4602	0.1707	0.134	0.4551	0.2291	0.0108	0.0004	0.4416	-0.179	-0.2888	0.4424	-0.1138	-0.0606	-0.0256	1.2991	0.0191	-3.689	0.9744	-1.869	0.9822	A-	A-	A-
SCIENCE	4	653788	0	A	2	84146	0.4235	0.1474	0.4187	0.2237	0.199	0.0111	0.0002	0.3097	-0.1181	0.3116	-0.1188	-0.14	-0.0596	-0.015	1.5771	0.0194	9.9011	1.113	9.9012	1.1641	A-	A+	A+
SCIENCE	4	657813	0	A	2	84321	0.5199	0.1726	0.1492	0.1538	0.5151	0.0089	0.0003	0.4151	-0.1339	-0.24	-0.1837	0.4163	-0.0563	-0.0198	1.1786	0.0191	2.751	1.0191	3.581	1.034	A+	A+	A+
SCIENCE	4	657819	0	A	2	84338	0.5168	0.5121	0.1467	0.1948	0.1373	0.0087	0.0003	0.4064	0.4082	-0.2354	-0.1584	-0.1501	-0.0649	-0.0189	1.0171	0.0191	1.251	1.0086	1.941	1.0183	A-	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
SCIENCE	4	657980	0	A	2	84735	0.6965	0.1053	0.6935	0.0932	0.1036	0.0041	0.0003	0.5405	-0.2827	0.5417	-0.2504	-0.2833	-0.0559	-0.0164	0.1939	0.0203	-9.8992	0.8212	-9.8993	0.731	A+	A-	A-
SCIENCE	4	657989	0	A	3	83624	0.538	0.1361	0.1399	0.178	0.5286	0.0172	0.0002	0.4404	-0.2069	-0.202	-0.1856	0.4393	-0.0542	-0.0177	0.8148	0.0192	-4.379	0.9693	-1.649	0.9837	A+	A+	A+
SCIENCE	4	728285	0	A	3	84576	0.538	0.1214	0.1543	0.5347	0.1834	0.006	0.0002	0.372	-0.1972	-0.2735	0.374	-0.0483	-0.0567	-0.0179	1.0276	0.0191	4.591	1.032	3.991	1.0379	A+	A+	A+
SCIENCE	4	728288	0	A	2	84571	0.538	0.5347	0.2854	0.0952	0.0784	0.0059	0.0004	0.2507	0.2542	-0.0662	-0.1902	-0.1331	-0.0633	-0.0216	0.9555	0.0191	9.9011	1.1456	9.9012	1.1695	A-	A-	A+
SCIENCE	4	336960	0	B	2	83622	0.3933	0.271	0.1326	0.3864	0.1926	0.0171	0.0003	0.3518	-0.0737	-0.1619	0.355	-0.1854	-0.0902	-0.023	1.611	0.0195	6.6111	1.0506	9.9011	1.1178	A+	A+	A+
SCIENCE	4	498446	0	B	2	84359	0.6486	0.0696	0.6429	0.1305	0.1482	0.0085	0.0003	0.4209	-0.2347	0.4227	-0.2104	-0.1863	-0.0585	-0.0232	0.333	0.0199	-0.099	0.9991	0.631	1.008	A+	A+	A-
SCIENCE	4	617539	0	B	2	84614	0.5636	0.5603	0.1576	0.114	0.1624	0.0054	0.0004	0.3391	0.3412	-0.1707	-0.1769	-0.1264	-0.0532	-0.0236	0.9082	0.0191	9.2511	1.0658	9.9011	1.0985	A-	A-	A+
SCIENCE	4	618935	0	B	2	83605	0.4292	0.2233	0.142	0.4216	0.1955	0.0173	0.0003	0.3579	-0.1112	-0.2438	0.3599	-0.0923	-0.0719	-0.0196	1.371	0.0192	2.761	1.0196	4.681	1.0465	A-	A+	A+
SCIENCE	4	622360	0	B	1	84414	0.3713	0.1239	0.1081	0.3916	0.3683	0.0079	0.0002	0.2847	-0.1496	-0.1928	-0.0475	0.2869	-0.0651	-0.0187	1.73	0.0197	9.9011	1.0969	9.9012	1.1909	A-	A+	A+
SCIENCE	4	661154	0	B	2	84044	0.367	0.4392	0.0633	0.3624	0.1226	0.012	0.0005	0.3096	-0.0007	-0.2549	0.3116	-0.2437	-0.0634	-0.025	1.5637	0.0194	8.6311	1.0654	9.9011	1.1272	A-	A-	A-
SCIENCE	4	496502	0	C	2	84585	0.8363	0.8312	0.0496	0.0687	0.0445	0.0059	0.0002	0.4896	0.4903	-0.2851	-0.2726	-0.2336	-0.0583	-0.0143	-0.5423	0.0233	-9.8993	0.7049	-9.8994	0.5577	A+	A-	A-
SCIENCE	4	579926	0	C	2	84588	0.4923	0.1264	0.291	0.4893	0.0872	0.0057	0.0003	0.4036	-0.249	-0.1236	0.4053	-0.2086	-0.0592	-0.023	1.2818	0.0191	1.681	1.0118	2.511	1.0241	A-	A+	A+
SCIENCE	4	624012	0	C	2	84422	0.5619	0.2227	0.5574	0.0712	0.1406	0.0077	0.0003	0.3685	-0.1415	0.3707	-0.2231	-0.1793	-0.0598	-0.0191	0.8822	0.0191	4.071	1.0287	2.711	1.0264	A-	A+	A+
SCIENCE	4	624015	0	C	2	84402	0.5416	0.26	0.0997	0.0948	0.5371	0.0081	0.0002	0.4465	-0.2347	-0.1666	-0.2203	0.4484	-0.0654	-0.021	1.2726	0.0191	-2.179	0.9849	-0.329	0.9968	A-	A+	A-
SCIENCE	4	661168	0	C	2	84028	0.3622	0.3069	0.3576	0.1952	0.1276	0.0116	0.0011	0.3589	-0.1833	0.3611	-0.1149	-0.1013	-0.0758	-0.0331	1.561	0.0194	3.121	1.0233	4.091	1.044	A+	A-	A-
SCIENCE	4	661200	0	C	2	84065	0.656	0.648	0.1054	0.1707	0.0636	0.012	0.0003	0.3908	0.3929	-0.2431	-0.1451	-0.2103	-0.0616	-0.022	0.6191	0.0194	-4.819	0.9647	-5.0791	0.9461	A-	A+	A+
SCIENCE	4	410858	0	D	2	84493	0.6474	0.1652	0.6428	0.097	0.0879	0.0064	0.0008	0.478	-0.1935	0.4798	-0.2485	-0.2783	-0.0617	-0.0279	0.1507	0.0204	-1.679	0.985	-3.359	0.9524	A+	A-	A-
SCIENCE	4	479245	0	D	2	83945	0.4148	0.3578	0.4091	0.1302	0.0892	0.0134	0.0002	0.2905	0.0518	0.2933	-0.2542	-0.2643	-0.068	-0.0201	1.4376	0.0192	9.9011	1.0998	9.9011	1.1467	A+	A+	A+
SCIENCE	4	565986	0	D	2	84564	0.4276	0.2214	0.1004	0.247	0.4249	0.006	0.0003	0.3755	-0.1239	-0.2546	-0.1244	0.3769	-0.0572	-0.0168	1.4474	0.0193	2.111	1.0152	3.801	1.0387	A-	A-	A-
SCIENCE	4	623205	0	D	2	84581	0.6269	0.1027	0.2367	0.0315	0.623	0.0057	0.0005	0.4675	-0.1922	-0.2909	-0.2343	0.4684	-0.0473	-0.0267	0.5753	0.0195	-9.8991	0.9124	-9.8991	0.8765	A-	A-	A-
SCIENCE	4	623870	0	D	2	83860	0.4515	0.4449	0.1628	0.0935	0.2841	0.0143	0.0003	0.3146	0.3174	-0.1429	-0.2349	-0.0621	-0.0692	-0.0184	1.3217	0.0191	9.9011	1.0957	9.9011	1.1309	A-	A+	A+
SCIENCE	4	661187	0	D	2	84260	0.364	0.3604	0.0679	0.3971	0.1647	0.0095	0.0004	0.3166	0.319	-0.2316	-0.0477	-0.1726	-0.072	-0.0267	1.5999	0.0195	4.651	1.0353	7.8211	1.0871	A-	A-	A-
SCIENCE	4	741106	1	1	2	7142	0.5631	0.16	0.1319	0.5595	0.1422	0.0057	0.0007	0.3883	-0.1399	-0.2646	0.3893	-0.1386	-0.0476	-0.017	0.7077	0.066	-1.999	0.9532	-2.6991	0.9161	A+	A-	A+
SCIENCE	4	747967	1	1	3	7147	0.2358	0.0682	0.2344	0.5351	0.1566	0.0051	0.0006	0.0103	-0.2669	0.0131	0.1412	-0.0098	-0.0664	-0.0165	2.1439	0.0742	5.9812	1.2336	7.9215	1.5261	A-	A-	A-
SCIENCE	4	747964	1	2	3	7091	0.432	0.1664	0.2134	0.4261	0.1806	0.0135		0.3507	-0.1616	-0.1648	0.3506	-0.1053	-0.0449		1.3299	0.0668	0.251	1.0063	1.391	1.0482	A-	A-	A-
SCIENCE	4	747965	1	3	2	7130	0.3272	0.2698	0.2553	0.1423	0.3246	0.0077	0.0004	0.1695	0.0389	-0.108	-0.1336	0.1707	-0.0373	-0.0066	1.6277	0.0686	4.5111	1.1328	4.4912	1.1945	A+	A-	A-
SCIENCE	4	743569	1	4	2	7041	0.3592	0.181	0.2784	0.1683	0.3518	0.0198	0.0007	0.2604	-0.106	-0.0018	-0.2009	0.2615	-0.0551	-0.0176	1.6387	0.0687	1.311	1.0373	3.2011	1.1368	A+	A-	A-
SCIENCE	4	743643	1	4	3	7119	0.2859	0.2831	0.2005	0.2255	0.2813	0.0089	0.0007	0.1005	0.1024	-0.1366	-0.1153	0.1356	-0.0351	-0.0363	2.0001	0.0723	4.4712	1.1583	5.7613	1.3315	A+	A+	A-
SCIENCE	4	747966	1	4	2	14203	0.7032	0.1495	0.0786	0.6982	0.0665	0.0068	0.0003	0.5177	-0.2858	-0.2477	0.5191	-0.2565	-0.0666	-0.0171	0.0372	0.0539	-6.9492	0.8406	-6.5792	0.7612	A+	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
SCIENCE	4	409100	1	D	2	7009	0.4406	0.1882	0.4296	0.181	0.1763	0.0245	0.0004	0.2957	-0.1805	0.294	-0.0802	-0.1013	-0.0342	-0.0088	1.348	0.0765	0.201	1.0054	0.771	1.0294	A+	A-	A+
SCIENCE	4	739394	2	1	2	7043	0.53	0.077	0.1371	0.5245	0.2509	0.0094	0.001	0.3523	-0.2724	-0.165	0.3556	-0.0939	-0.0613	-0.0498	0.9866	0.0662	1.741	1.0421	1.051	1.0351	A+	A-	A-
SCIENCE	4	747962	2	1	2	7034	0.5218	0.2271	0.1564	0.0892	0.5157	0.0115	0.0001	0.3509	-0.1716	-0.0852	-0.2364	0.352	-0.051	-0.0232	0.9738	0.0662	1.591	1.0386	0.741	1.0246	A+	A+	A+
SCIENCE	4	747963	2	1	2	7048	0.4161	0.306	0.1006	0.1716	0.4121	0.0096	0.0001	0.3232	-0.1448	-0.1757	-0.0909	0.3246	-0.059	-0.0118	1.4913	0.0776	1.171	1.0348	1.8411	1.0795	A+	A-	A+
SCIENCE	4	747968	2	1	2	7071	0.4537	0.4508	0.1279	0.2574	0.1575	0.0063	0.0001	0.3157	0.3178	-0.2112	-0.0969	-0.1103	-0.0619	-0.0105	1.3482	0.0665	2.0111	1.0502	2.5611	1.089	A-	A+	A+
SCIENCE	4	737133	2	2	2	7063	0.6174	0.2058	0.0781	0.0957	0.6128	0.007	0.0006	0.4098	-0.1989	-0.251	-0.1616	0.4113	-0.0549	-0.0197	0.5243	0.0677	-2.8791	0.926	-2.9691	0.884	A+	A-	A-
SCIENCE	4	739445	2	5	2	6968	0.5679	0.556	0.1204	0.1866	0.1161	0.0207	0.0003	0.4747	0.4794	-0.2005	-0.1864	-0.2642	-0.1073	-0.0265	0.7512	0.0667	-3.9691	0.9049	-3.9291	0.8647	A-	A+	A+
SCIENCE	4	495295	2	A	2	7066	0.5522	0.0847	0.5483	0.1096	0.2502	0.0072		0.3123	-0.224	0.3149	-0.1277	-0.1139	-0.0608		0.8305	0.0767	-0.869	0.9752	-0.519	0.9785	A+	A+	A+
SCIENCE	4	737129	3	1	2	6980	0.912	0.9052	0.0182	0.0304	0.0387	0.0067	0.0009	0.3724	0.3747	-0.1665	-0.2052	-0.2406	-0.0559	-0.0457	-1.5306	0.1104	-1.3491	0.8907	-3.5194	0.5859	A+	A-	A-
SCIENCE	4	748337	3	1	2	6988	0.2076	0.2279	0.1494	0.2063	0.4099	0.0058	0.0006	-0.004	-0.0533	-0.2395	-0.0006	0.2331	-0.0783	-0.0304	2.6825	0.0794	5.6113	1.2638	8.0917	1.7035	A+	A+	A+
SCIENCE	4	748339	3	1	2	6967	0.5177	0.113	0.152	0.2127	0.5129	0.0085	0.0009	0.4555	-0.2035	-0.2181	-0.1906	0.459	-0.0795	-0.0462	1.0634	0.0658	-4.1891	0.905	-3.3191	0.8974	A+	A-	A+
SCIENCE	4	741115	3	2	2	6954	0.5206	0.1893	0.1166	0.1682	0.5147	0.0107	0.0006	0.3476	-0.1202	-0.2296	-0.1235	0.3513	-0.076	-0.0343	1.0353	0.0659	1.251	1.0293	1.121	1.036	A-	A-	A-
SCIENCE	4	748342	3	3	2	6916	0.301	0.296	0.2237	0.2505	0.2131	0.0158	0.0009	0.204	0.2068	-0.1255	-0.066	-0.0123	-0.0579	-0.0415	2.0854	0.0824	1.7211	1.0655	2.7312	1.1668	A-	A+	A+
SCIENCE	4	748343	3	3	2	6968	0.4483	0.2504	0.4442	0.152	0.1442	0.0085	0.0007	0.2795	-0.0691	0.2844	-0.1824	-0.1047	-0.0942	-0.017	1.3856	0.0662	2.6011	1.0636	2.2911	1.0778	A+	A+	A+
SCIENCE	4	739450	3	5	3	6980	0.6116	0.1123	0.0971	0.607	0.176	0.0065	0.001	0.3756	-0.2432	-0.2379	0.38	-0.0815	-0.0706	-0.0512	0.5305	0.0676	0.301	1.0077	0.671	1.0259	A+	A-	A+
SCIENCE	4	496500	3	D	2	6891	0.3402	0.2229	0.3333	0.3169	0.1066	0.0196	0.0006	0.3005	-0.0651	0.3028	-0.0878	-0.2073	-0.0722	-0.0317	1.8829	0.08	2.0111	1.0693	3.5412	1.1913	A-	A-	A-
SCIENCE	4	748338	4	1	2	7024	0.4351	0.2752	0.1414	0.144	0.4318	0.0071	0.0006	0.4156	-0.1196	-0.1964	-0.2262	0.4173	-0.059	-0.0226	1.404	0.0663	-2.069	0.9511	-0.269	0.9906	A+	A+	A+
SCIENCE	4	748341	4	2	2	7046	0.6687	0.1012	0.1537	0.6657	0.0749	0.0042	0.0003	0.4673	-0.2024	-0.3052	0.4693	-0.175	-0.0565	-0.0304	0.2809	0.0699	-5.0991	0.8532	-4.9092	0.7827	A+	A+	A-
SCIENCE	4	739404	4	3	3	7023	0.317	0.3145	0.3535	0.192	0.1322	0.0073	0.0004	0.1101	0.1119	0.1765	-0.1827	-0.1791	-0.0389	-0.0185	1.9957	0.0697	5.6312	1.1749	6.8314	1.3505	A+	A+	A-
SCIENCE	4	748344	4	3	2	7034	0.4237	0.1852	0.421	0.2453	0.1423	0.0062		0.2956	-0.1252	0.297	-0.073	-0.1792	-0.0509		1.5153	0.0666	1.581	1.039	2.3211	1.0839	A+	A-	A+
SCIENCE	4	743568	4	4	2	7024	0.4801	0.0934	0.2554	0.1671	0.4764	0.0071	0.0006	0.3854	-0.2139	-0.1112	-0.2085	0.386	-0.0424	-0.0302	1.207	0.066	-0.649	0.9846	-0.419	0.9859	A+	A-	A-
SCIENCE	4	739452	4	5	2	6962	0.711	0.0602	0.0923	0.1318	0.6994	0.0164		0.4908	-0.2747	-0.2675	-0.2211	0.4843	-0.0357		0.0712	0.0722	-3.8491	0.8762	-3.8192	0.8047	A+	A+	A+
SCIENCE	4	748345	4	5	2	6988	0.3756	0.3011	0.1888	0.3709	0.1266	0.0127		0.1833	0.0455	-0.1435	0.1851	-0.1468	-0.0477		1.7098	0.0784	6.9312	1.227	7.1114	1.3683	A+	A+	A+
SCIENCE	4	579554	4	C	2	6820	0.6182	0.077	0.5956	0.2104	0.0805	0.0363	0.0001	0.4718	-0.2616	0.4464	-0.1926	-0.2726	0.0179	-0.0005	0.613	0.0778	-3.4491	0.8984	-2.9191	0.8765	A+	A-	A-
SCIENCE	4	748330	5	1	3	7038	0.5905	0.5872	0.157	0.1548	0.0954	0.0051	0.0006	0.4136	0.415	-0.231	-0.1933	-0.1574	-0.0497	-0.0237	0.6908	0.0678	-1.349	0.9638	-1.5991	0.9388	A-	A-	A-
SCIENCE	4	748332	5	2	2	7023	0.5304	0.2512	0.0783	0.5263	0.1365	0.0072	0.0006	0.3565	-0.1241	-0.2279	0.3585	-0.1711	-0.0566	-0.018	0.9487	0.0772	0.731	1.0216	1.7911	1.0714	A-	A-	A-
SCIENCE	4	737163	5	3	2	7001	0.6838	0.0949	0.6763	0.0824	0.1355	0.0099	0.001	0.4671	-0.2541	0.4633	-0.2538	-0.2018	-0.023	-0.0366	0.2161	0.0711	-2.6691	0.9183	-2.4491	0.8791	A+	A-	A-
SCIENCE	4	739399	5	3	2	7038	0.5716	0.1584	0.5684	0.1794	0.0882	0.0055	0.0001	0.4186	-0.1968	0.4182	-0.2011	-0.1958	-0.0327	-0.0156	0.7899	0.0674	-3.0991	0.9199	-2.8491	0.8977	A-	A-	A-
SCIENCE	4	748335	5	3	2	6971	0.4279	0.1783	0.1962	0.4214	0.1889	0.0141	0.001	0.3318	-0.1995	-0.1642	0.3385	-0.0282	-0.1174	-0.0223	1.5077	0.0673	0.841	1.0219	1.8111	1.0672	A+	A-	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
SCIENCE	4	739449	5	5	3	7002	0.4377	0.2104	0.2068	0.433	0.139	0.0103	0.0004	0.3074	-0.1179	-0.1643	0.3089	-0.0956	-0.0505	-0.0139	1.4281	0.0671	2.5411	1.0669	3.5011	1.1288	A+	A-	A+
SCIENCE	4	748336	5	5	1	7007	0.3709	0.1783	0.1806	0.2639	0.3672	0.01		0.3606	-0.1059	-0.2649	-0.0582	0.3621	-0.0652		1.7615	0.0685	0.791	1.0217	2.3911	1.1013	A-	A+	A+
SCIENCE	4	566203	5	B	2	7013	0.6923	0.6859	0.1091	0.1149	0.081	0.0088	0.0004	0.4619	0.4601	-0.1968	-0.2485	-0.2542	-0.0398	0.0043	0.1402	0.0822	-2.6291	0.9078	-2.9992	0.8303	A+	A+	A+
SCIENCE	4	748328	6	1	2	6997	0.3649	0.361	0.3228	0.2278	0.0778	0.0106	0.0001	0.3048	0.307	-0.0665	-0.1198	-0.2204	-0.0671	-0.0142	1.7622	0.0687	0.571	1.0157	3.1011	1.1396	A-	A-	A-
SCIENCE	4	748329	6	1	2	7003	0.5072	0.1911	0.1422	0.1545	0.5022	0.0075	0.0024	0.4911	-0.2068	-0.2689	-0.177	0.4919	-0.0767	-0.0028	1.1509	0.0664	-4.7991	0.8878	-4.1391	0.8639	A+	A-	A-
SCIENCE	4	748331	6	1	2	7027	0.6364	0.0608	0.0912	0.2092	0.6323	0.0062	0.0003	0.4703	-0.2863	-0.284	-0.1774	0.4717	-0.0591	-0.0281	0.4668	0.0683	-3.4091	0.9099	-3.0391	0.8759	A+	A+	A+
SCIENCE	4	739430	6	2	2	7027	0.2028	0.1599	0.3742	0.2579	0.2015	0.0064	0.0001	0.0306	-0.2011	0.2577	-0.1349	0.0331	-0.0634	-0.0154	2.7556	0.0816	6.0613	1.3052	9.512	1.966	A-	A+	A+
SCIENCE	4	739411	6	3	2	7025	0.4003	0.2281	0.2167	0.1509	0.3976	0.0068		0.3927	-0.2116	-0.096	-0.1661	0.3934	-0.0584		1.5697	0.0676	-2.7991	0.928	-1.7391	0.9333	A-	A-	A+
SCIENCE	4	748333	6	3	2	7024	0.626	0.125	0.6217	0.1067	0.1397	0.0065	0.0004	0.4479	-0.2788	0.4495	-0.2241	-0.1482	-0.0574	-0.0289	0.459	0.0789	-2.4491	0.9243	-1.8891	0.9084	A-	A-	A-
SCIENCE	4	743580	6	5	3	7020	0.6235	0.1559	0.6188	0.1345	0.0833	0.0072	0.0003	0.4456	-0.205	0.4482	-0.2378	-0.2022	-0.0717	-0.0155	0.4564	0.0683	-2.9291	0.9218	-2.7491	0.8862	A+	A-	A-
SCIENCE	4	579572	6	B	2	7001	0.7899	0.0611	0.0885	0.7818	0.0584	0.0098	0.0004	0.4981	-0.2774	-0.2434	0.499	-0.2695	-0.067	-0.0355	-0.4577	0.0909	-4.0892	0.8143	-4.5893	0.6511	A+	A-	A+
SCIENCE	4	740632	7	1	2	7055	0.3882	0.1932	0.1223	0.3854	0.2919	0.0068	0.0004	0.3082	-0.1638	-0.2601	0.3104	0.0102	-0.0709	-0.0015	1.6662	0.0676	1.801	1.0477	2.1811	1.0846	A+	A-	A-
SCIENCE	4	740635	7	1	2	7062	0.5624	0.559	0.1386	0.1524	0.1438	0.0061	0.0001	0.397	0.3975	-0.2078	-0.1999	-0.1442	-0.0387	-0.0106	0.7903	0.0666	0.541	1.0132	1.071	1.0372	A-	A+	A-
SCIENCE	4	740638	7	2	2	6948	0.4731	0.2625	0.1226	0.1302	0.4626	0.0221	0.0001	0.2996	-0.0233	-0.2061	-0.1981	0.2961	-0.0217	0.0046	1.2523	0.0766	2.0311	1.0581	1.4211	1.0545	A-	A-	A-
SCIENCE	4	741121	7	2	2	7029	0.6174	0.1282	0.1321	0.6108	0.1181	0.0108		0.5067	-0.2878	-0.2677	0.505	-0.1701	-0.0433		0.5107	0.068	-4.4691	0.8834	-3.9692	0.8477	A+	A-	A-
SCIENCE	4	739398	7	3	3	7042	0.566	0.1124	0.5609	0.1361	0.1815	0.0086	0.0004	0.4522	-0.2423	0.4535	-0.2484	-0.1486	-0.0611	-0.022	0.7856	0.0667	-3.0991	0.9243	-2.9991	0.8985	A+	A-	A+
SCIENCE	4	740640	7	3	2	7042	0.3794	0.376	0.2024	0.2626	0.15	0.0084	0.0006	0.3949	0.3957	-0.1311	-0.1742	-0.158	-0.0554	-0.0363	1.7361	0.068	-1.439	0.9616	0.311	1.0118	A-	A-	A+
SCIENCE	4	739441	7	5	2	7047	0.482	0.1255	0.2374	0.478	0.1507	0.0077	0.0006	0.4057	-0.2001	-0.1739	0.4065	-0.163	-0.0471	-0.0129	1.1769	0.0661	-1.349	0.9679	-0.579	0.9812	A+	A-	A-
SCIENCE	4	581582	7	A	2	7040	0.7132	0.0594	0.105	0.7066	0.1198	0.0089	0.0004	0.4582	-0.2377	-0.196	0.4584	-0.2689	-0.0543	-0.0007	0.0201	0.083	-3.5891	0.8702	-2.5692	0.8479	A-	A-	A-
SCIENCE	4	740634	8	1	2	7057	0.4027	0.2579	0.126	0.2088	0.3996	0.0076	0.0001	0.231	0.0724	-0.1615	-0.2149	0.2332	-0.0545	-0.0171	1.556	0.067	6.0312	1.1603	5.7912	1.2254	A+	A+	A-
SCIENCE	4	740636	8	1	2	7069	0.4167	0.1268	0.4142	0.2785	0.1744	0.0058	0.0003	0.1714	-0.1921	0.1748	-0.0099	-0.0326	-0.0646	-0.0278	1.5352	0.0669	5.7912	1.1525	5.5712	1.214	A-	A+	A-
SCIENCE	4	740637	8	1	2	7036	0.5142	0.5087	0.1731	0.1781	0.1294	0.0107		0.2506	0.253	-0.0875	-0.1022	-0.1449	-0.0552		1.153	0.0658	6.7012	1.1647	6.4012	1.2184	A-	A-	A-
SCIENCE	4	739420	8	2	2	7041	0.5197	0.5145	0.1834	0.1576	0.1346	0.01		0.4416	0.4406	-0.165	-0.2196	-0.2118	-0.0407		1.0741	0.0658	-2.6591	0.9392	-2.2791	0.9287	A+	A-	A-
SCIENCE	4	737138	8	3	2	7042	0.4803	0.2122	0.0875	0.4755	0.215	0.0097	0.0001	0.2536	-0.1725	-0.1489	0.2546	-0.026	-0.0384	-0.0107	1.1799	0.0659	4.2711	1.1032	4.7512	1.1596	A-	A-	A-
SCIENCE	4	740639	8	3	2	7064	0.3664	0.2662	0.3639	0.1984	0.1648	0.0066	0.0001	0.1927	-0.0314	0.1955	-0.1084	-0.0847	-0.0648	-0.0235	1.7378	0.079	2.8711	1.0942	3.0011	1.1484	A+	A+	A+
SCIENCE	4	743576	8	5	3	7077	0.4876	0.1815	0.1693	0.159	0.4852	0.0045	0.0004	0.4258	-0.193	-0.198	-0.1681	0.4258	-0.0447	0.0153	1.1611	0.0658	-1.409	0.9672	-0.639	0.9792	A-	A-	A+
SCIENCE	4	494814	8	A	2	7033	0.4459	0.187	0.4409	0.1859	0.1751	0.011	0.0001	0.4122	-0.1699	0.4133	-0.1526	-0.1929	-0.0603	-0.0018	1.3576	0.0767	-1.399	0.9607	-0.599	0.9762	A-	A+	A-
SCIENCE	4	737161	9	1	2	7020	0.5251	0.12	0.2048	0.1468	0.5214	0.0066	0.0003	0.4554	-0.2402	-0.1976	-0.1864	0.4557	-0.0404	-0.0341	0.9773	0.0663	-2.1991	0.9473	-1.559	0.9501	A+	A+	A+
SCIENCE	4	747012	9	1	2	6997	0.6258	0.1301	0.1303	0.6195	0.1099	0.0099	0.0003	0.4779	-0.2216	-0.206	0.4787	-0.2624	-0.0601	-0.0296	0.4161	0.0685	-5.0491	0.8656	-4.8192	0.8127	A+	A-	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
SCIENCE	4	747014	9	1	2	7023	0.4846	0.2085	0.1269	0.1767	0.4814	0.0064	0.0001	0.4292	-0.1513	-0.242	-0.1792	0.4306	-0.0579	-0.0171	1.1612	0.0662	-3.0491	0.9276	-2.3191	0.9267	A+	A-	A-
SCIENCE	4	739426	9	2	2	7007	0.5034	0.172	0.4989	0.1044	0.2159	0.0085	0.0003	0.354	-0.1584	0.3552	-0.2296	-0.104	-0.0463	-0.0341	1.0821	0.0662	1.751	1.0428	1.5911	1.0514	A-	A+	A-
SCIENCE	4	747016	9	2	2	6996	0.5576	0.5518	0.2408	0.1147	0.0823	0.01	0.0003	0.3435	0.3463	-0.1291	-0.1631	-0.2127	-0.0637	-0.0133	0.8202	0.0769	1.341	1.0388	1.7811	1.0713	A-	A+	A-
SCIENCE	4	747018	9	3	2	7038	0.5466	0.0659	0.5442	0.303	0.0825	0.004	0.0004	0.4209	-0.2674	0.4207	-0.24	-0.1122	-0.0314	-0.0016	0.869	0.0665	-2.7291	0.9339	-2.4291	0.9209	A+	A-	A-
SCIENCE	4	743579	9	5	3	7001	0.3715	0.1681	0.2208	0.3679	0.2336	0.0089	0.0007	0.3176	-0.2223	-0.1065	0.3189	-0.05	-0.0485	-0.0302	1.6958	0.0681	3.5311	1.0982	4.6712	1.1961	A-	A-	A-
SCIENCE	4	574833	9	A	2	6983	0.426	0.1152	0.4209	0.3016	0.1502	0.0122		0.388	-0.2134	0.3889	-0.0764	-0.2299	-0.0609		1.4559	0.0775	-1.569	0.9537	-0.909	0.9624	A+	A-	A+
SCIENCE	4	743526	10	1	2	6991	0.675	0.1265	0.1072	0.6691	0.0885	0.0085	0.0003	0.4883	-0.2669	-0.2174	0.488	-0.2407	-0.0562	-0.01	0.2365	0.0703	-4.5591	0.866	-4.5392	0.7943	A+	A-	A-
SCIENCE	4	747013	10	1	2	6928	0.3253	0.2521	0.3196	0.1883	0.2223	0.0174	0.0003	0.2565	-0.1199	0.2584	-0.0719	-0.0762	-0.063	-0.021	2.0217	0.07	1.8611	1.0564	3.7012	1.1859	A-	A+	A+
SCIENCE	4	739419	10	2	2	6984	0.3607	0.2467	0.3572	0.2124	0.174	0.0096	0.0001	0.2038	-0.1047	0.2036	-0.0983	-0.0259	-0.0233	-0.0084	1.8138	0.0683	2.3311	1.0643	3.6712	1.1608	A+	A-	A-
SCIENCE	4	747015	10	2	2	7006	0.4105	0.1805	0.2538	0.4078	0.1513	0.0065	0.0001	0.2115	-0.2422	-0.0308	0.2149	0.0205	-0.0778	-0.0135	1.547	0.0667	6.3812	1.1653	5.6112	1.2167	A-	A-	A-
SCIENCE	4	747017	10	2	2	6941	0.3515	0.1527	0.346	0.3217	0.1638	0.0157	0.0001	0.1266	-0.1985	0.1312	0.1399	-0.1288	-0.0699	0.0007	1.8382	0.0796	3.6811	1.1251	3.9812	1.214	A+	A+	A-
SCIENCE	4	739401	10	3	2	6986	0.6091	0.1062	0.1621	0.119	0.6033	0.0085	0.001	0.4089	-0.1835	-0.1691	-0.2394	0.4074	-0.0284	-0.0109	0.6217	0.0673	-2.3791	0.9392	-1.8291	0.9305	A-	A-	A-
SCIENCE	4	747019	10	3	3	7003	0.4842	0.156	0.1211	0.2351	0.4808	0.0068	0.0003	0.3596	-0.1004	-0.2097	-0.1631	0.3632	-0.0846	-0.0301	1.2115	0.0659	-0.759	0.9822	-0.699	0.9769	A+	A-	A-
SCIENCE	4	574836	10	A	2	6979	0.7544	0.0787	0.0941	0.7465	0.0702	0.0102	0.0003	0.5153	-0.2815	-0.247	0.5144	-0.2726	-0.0595	-0.0146	-0.1851	0.0867	-4.2292	0.828	-3.8893	0.7368	A+	A-	A-
SCIENCE	4	741104	11	1	2	7025	0.6739	0.1181	0.6655	0.0962	0.1078	0.0118	0.0006	0.4751	-0.2424	0.4765	-0.2558	-0.2043	-0.0688	-0.0163	0.2561	0.0695	-4.1291	0.8828	-4.3792	0.8173	A+	A+	A-
SCIENCE	4	746577	11	1	2	7069	0.3436	0.2369	0.3415	0.2687	0.1468	0.0056	0.0006	-0.0135	0.046	-0.0101	0.0311	-0.0678	-0.0562	-0.0169	1.9029	0.0692	9.2913	1.2913	8.8714	1.4406	A+	A-	A+
SCIENCE	4	746580	11	1	2	14044	0.4635	0.2248	0.4585	0.1605	0.1453	0.0108	0.0001	0.307	-0.125	0.309	-0.2346	-0.0269	-0.0589	-0.0111	1.3062	0.0467	3.9611	1.068	4.4911	1.1046	A-	A+	A+
SCIENCE	4	746581	11	1	2	7065	0.4313	0.1974	0.1021	0.2654	0.4284	0.0065	0.0003	0.3657	-0.198	-0.2475	-0.0505	0.3682	-0.0718	-0.0249	1.4673	0.0665	-0.619	0.9848	-0.569	0.9804	A+	A-	A+
SCIENCE	4	737134	11	2	2	7032	0.5961	0.5893	0.0894	0.178	0.1319	0.0112	0.0001	0.4182	0.4208	-0.1892	-0.1762	-0.23	-0.0716	-0.0221	0.6631	0.0667	-1.999	0.9502	-2.0091	0.9314	A+	A-	A-
SCIENCE	4	739402	11	3	3	7061	0.3875	0.3846	0.142	0.1558	0.3103	0.0067	0.0006	0.2499	0.2523	-0.2628	-0.212	0.1108	-0.0607	-0.0175	1.6956	0.0676	3.3711	1.0911	4.2112	1.1699	A-	A-	A-
SCIENCE	4	746583	11	3	2	7059	0.1801	0.1787	0.2795	0.3779	0.1563	0.0069	0.0007	0.0019	0.0038	0.0537	-0.0556	0.0148	-0.0342	-0.0437	2.858	0.0975	5.2913	1.3354	6.9918	1.8401	A-	A-	A-
SCIENCE	4	565988	11	A	2	6952	0.4451	0.2318	0.1112	0.1994	0.435	0.0226		0.406	-0.1014	-0.2605	-0.1752	0.402	-0.0312		1.3885	0.0769	-2.2391	0.9369	-1.119	0.9559	A+	A+	A-
SCIENCE	4	746579	12	1	3	6995	0.3221	0.2041	0.2288	0.2364	0.318	0.0126	0.0003	0.1754	-0.0725	-0.0387	-0.0718	0.178	-0.0606	-0.0068	2.0216	0.0706	3.4511	1.1118	5.2813	1.2728	A-	A-	A+
SCIENCE	4	739423	12	2	2	7036	0.3806	0.1924	0.1252	0.3779	0.2975	0.0066	0.0004	0.2602	-0.0072	-0.2601	0.2625	-0.072	-0.0615	-0.0227	1.625	0.0674	3.0411	1.0813	4.7612	1.1864	A-	A-	A+
SCIENCE	4	746582	12	2	3	7029	0.4639	0.1232	0.2124	0.4602	0.1962	0.0079	0.0001	0.3871	-0.2611	-0.1358	0.3897	-0.1159	-0.076	-0.0106	1.2535	0.0764	-0.589	0.9835	-0.609	0.9767	A-	A+	A-
SCIENCE	4	739400	12	3	2	7038	0.3389	0.1408	0.3737	0.1421	0.3366	0.0064	0.0004	0.2249	-0.2069	0.0818	-0.2016	0.2265	-0.0481	-0.0191	1.9308	0.0697	4.4011	1.1372	3.9012	1.1848	A-	A-	A+
SCIENCE	4	746584	12	3	2	7042	0.4655	0.4626	0.1248	0.2065	0.2	0.0056	0.0006	0.3886	0.3897	-0.2024	-0.2549	-0.0502	-0.0535	-0.0071	1.2779	0.0659	-1.659	0.9611	-1.9391	0.9392	A-	A-	A+
SCIENCE	4	739440	12	5	2	7015	0.413	0.4088	0.1705	0.1363	0.2743	0.0099	0.0001	0.352	0.3548	-0.1652	-0.2138	-0.0688	-0.0802	-0.0246	1.5016	0.0667	-0.639	0.9838	1.241	1.0432	A+	A+	A-
SCIENCE	4	574825	12	A	2	7001	0.5969	0.1246	0.0929	0.5898	0.1808	0.0119	0.0001	0.4183	-0.156	-0.2735	0.4204	-0.1778	-0.0678	-0.008	0.6317	0.0766	-1.579	0.9564	-1.059	0.9576	A-	A-	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
SCIENCE	8	401720	0	A	2	71624	0.3605	0.129	0.2133	0.294	0.3587	0.0048	0.0003	0.3184	-0.1754	-0.1672	-0.0493	0.3195	-0.0461	-0.0193	1.0235	0.0196	7.5811	1.0611	8.2511	1.0935	A-	A+	A+
SCIENCE	8	410883	0	A	2	71624	0.6343	0.6311	0.0824	0.1177	0.1638	0.0047	0.0004	0.4871	0.4885	-0.2671	-0.2998	-0.1666	-0.0526	-0.0222	-0.357	0.0203	-4.279	0.9633	-5.0491	0.9267	A+	A-	A-
SCIENCE	8	412150	0	A	2	71664	0.3741	0.1385	0.2785	0.3724	0.2062	0.0043	0.0002	0.3054	-0.1308	-0.0162	0.3066	-0.2286	-0.0449	-0.0241	0.8166	0.0194	9.9011	1.108	9.9011	1.1413	B-	A-	A-
SCIENCE	8	494525	0	A	2	71224	0.4639	0.2369	0.1337	0.1598	0.459	0.0103	0.0003	0.3984	-0.1517	-0.1961	-0.1684	0.4001	-0.06	-0.0205	0.5396	0.0193	5.581	1.0415	3.961	1.0397	A-	A+	A+
SCIENCE	8	617345	0	A	2	71504	0.428	0.4251	0.1317	0.1235	0.313	0.0064	0.0003	0.4338	0.4347	-0.2775	-0.2817	-0.0514	-0.0522	-0.0204	0.8098	0.0194	-1.179	0.9911	0.091	1.0009	A+	A+	A+
SCIENCE	8	622822	0	A	2	71438	0.6016	0.1291	0.597	0.1504	0.1158	0.0074	0.0003	0.5322	-0.2539	0.5329	-0.2748	-0.2277	-0.0576	-0.0154	0.2235	0.0194	-9.8991	0.8826	-9.8992	0.8384	A+	A+	A+
SCIENCE	8	622838	0	A	2	71708	0.6449	0.1381	0.1229	0.6424	0.0927	0.0037	0.0002	0.4073	-0.228	-0.1744	0.4091	-0.1961	-0.0506	-0.0181	0.1637	0.0194	-2.569	0.9808	-2.029	0.9777	A+	A+	A+
SCIENCE	8	623139	0	A	2	71252	0.5971	0.1037	0.591	0.1389	0.1562	0.0099	0.0003	0.5496	-0.3107	0.5494	-0.2736	-0.2057	-0.0583	-0.0183	0.0146	0.0196	-9.8991	0.8749	-9.8992	0.8251	A-	A+	A+
SCIENCE	8	657833	0	A	2	71661	0.5614	0.1377	0.1614	0.1375	0.5589	0.0043	0.0003	0.4702	-0.2189	-0.1619	-0.2773	0.4713	-0.0485	-0.0223	0.2767	0.0193	-7.8191	0.9433	-7.0691	0.9275	A-	A-	A-
SCIENCE	8	657836	0	A	2	71681	0.6118	0.0655	0.6092	0.0764	0.2446	0.0039	0.0003	0.5185	-0.2695	0.5193	-0.2833	-0.2516	-0.0472	-0.0209	0.2665	0.0193	-9.8991	0.8872	-9.8992	0.8422	A-	A-	A-
SCIENCE	8	657837	0	A	2	71557	0.5482	0.09	0.5449	0.1272	0.232	0.0056	0.0004	0.4651	-0.2408	0.4669	-0.2402	-0.1865	-0.0591	-0.0214	0.3807	0.0193	-5.009	0.9637	-4.569	0.9542	A+	A+	A-
SCIENCE	8	657839	0	A	2	71581	0.7019	0.698	0.104	0.1278	0.0645	0.0052	0.0004	0.5321	0.5327	-0.2692	-0.2856	-0.2565	-0.0493	-0.0238	-0.4829	0.0207	-9.8991	0.8706	-9.8992	0.7895	A+	A+	A+
SCIENCE	8	657843	0	A	2	71319	0.72	0.0758	0.1017	0.0999	0.7134	0.0089	0.0003	0.5465	-0.2534	-0.2672	-0.3108	0.5463	-0.0614	-0.0129	-0.365	0.0204	-9.8992	0.7842	-9.8993	0.6907	A+	A+	A+
SCIENCE	8	657847	0	A	2	71614	0.3884	0.3864	0.104	0.3238	0.1806	0.0049	0.0003	0.3526	0.354	-0.2792	-0.1552	-0.0273	-0.0529	-0.0193	1.0422	0.0196	8.3311	1.0676	8.4211	1.0964	A-	A+	A-
SCIENCE	8	657855	0	A	2	71571	0.6725	0.1293	0.1053	0.6686	0.091	0.0055	0.0003	0.3545	-0.1422	-0.1672	0.3576	-0.2249	-0.0581	-0.0203	-0.1908	0.02	2.841	1.0234	4.9611	1.0679	A+	A+	A+
SCIENCE	8	658045	0	A	2	71642	0.6268	0.1609	0.1126	0.098	0.6238	0.0045	0.0003	0.4901	-0.1744	-0.2742	-0.2816	0.4908	-0.0442	-0.0198	0.052	0.0196	-9.8991	0.9076	-8.9491	0.8992	A+	A+	A+
SCIENCE	8	661146	0	A	2	71433	0.5821	0.1599	0.5776	0.1304	0.1244	0.0073	0.0004	0.4819	-0.2273	0.484	-0.2737	-0.1739	-0.0676	-0.0226	-0.1159	0.0198	2.141	1.0171	2.111	1.0273	A+	A+	A+
SCIENCE	8	661147	0	A	2	71448	0.5699	0.0806	0.2318	0.5656	0.1145	0.0072	0.0003	0.4572	-0.2499	-0.215	0.4584	-0.1995	-0.0555	-0.0159	0.2213	0.0194	-2.209	0.9836	-4.109	0.9565	A-	A+	A+
SCIENCE	8	661148	0	A	2	71336	0.5617	0.1612	0.1186	0.1546	0.5566	0.0087	0.0003	0.5065	-0.211	-0.2326	-0.2596	0.5063	-0.0499	-0.015	0.1613	0.0194	-8.2491	0.9394	-9.3591	0.9002	A+	A+	A+
SCIENCE	8	701295	0	A	2	71241	0.3706	0.1905	0.2278	0.2047	0.3667	0.0101	0.0003	0.3182	-0.1377	-0.1059	-0.125	0.319	-0.0448	-0.0178	1.3949	0.0204	9.9012	1.1757	9.9013	1.301	A-	A+	A+
SCIENCE	8	498031	0	B	2	71532	0.5888	0.0512	0.5851	0.1955	0.1618	0.0061	0.0003	0.4594	-0.2634	0.4618	-0.1434	-0.2907	-0.067	-0.0203	0.1509	0.0194	-5.609	0.9584	-4.7991	0.9477	A+	A+	A+
SCIENCE	8	617343	0	B	2	71428	0.55	0.5457	0.2705	0.089	0.0871	0.0073	0.0004	0.4554	0.4565	-0.2317	-0.2743	-0.1467	-0.0518	-0.0235	0.4041	0.0193	-3.559	0.9741	-4.119	0.9589	A+	A-	A-
SCIENCE	8	623868	0	B	2	71418	0.7116	0.0734	0.0577	0.1551	0.706	0.0076	0.0003	0.5483	-0.2513	-0.2341	-0.3434	0.5492	-0.064	-0.0152	-0.4243	0.0205	-9.8992	0.8123	-9.8993	0.7394	A+	B-	A-
SCIENCE	8	653703	0	B	2	71587	0.6823	0.0959	0.6785	0.1223	0.0977	0.005	0.0005	0.5364	-0.279	0.5376	-0.3053	-0.217	-0.0549	-0.0259	-0.3299	0.0203	-9.8991	0.8508	-9.8992	0.7733	A+	A+	A+
SCIENCE	8	303367	0	C	2	71439	0.5628	0.1417	0.1381	0.5585	0.1541	0.0074	0.0002	0.4946	-0.273	-0.2168	0.4951	-0.1975	-0.0497	-0.0193	0.3068	0.0193	-9.8991	0.914	-9.8991	0.8866	A-	A+	A+
SCIENCE	8	303678	0	C	2	71587	0.5417	0.5387	0.1768	0.1801	0.0988	0.0053	0.0003	0.4685	0.4693	-0.2386	-0.2327	-0.1667	-0.0468	-0.0189	0.282	0.0193	-5.299	0.9614	-6.4891	0.9334	A-	A+	A-
SCIENCE	8	411601	0	C	2	71460	0.3619	0.2782	0.2032	0.3593	0.152	0.0069	0.0004	0.3048	-0.1264	-0.0884	0.3067	-0.1382	-0.0595	-0.0197	1.0006	0.0196	9.9011	1.0996	9.9011	1.1459	A-	A+	A+
SCIENCE	8	565993	0	C	2	71616	0.6733	0.078	0.6699	0.1599	0.0871	0.005	0.0002	0.4503	-0.2042	0.4517	-0.2423	-0.2313	-0.0475	-0.0218	0.0112	0.0196	-9.8991	0.9163	-9.8991	0.8687	A+	A+	A+
SCIENCE	8	574822	0	C	3	71513	0.5059	0.1371	0.1243	0.5025	0.2294	0.0056	0.001	0.3266	-0.1145	-0.1782	0.3292	-0.1459	-0.0544	-0.0318	0.6261	0.0193	9.9011	1.1208	9.9012	1.1541	A-	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
SCIENCE	8	623843	0	C	2	71323	0.4302	0.2724	0.1123	0.4263	0.1798	0.0088	0.0004	0.3742	-0.0682	-0.2623	0.3752	-0.1755	-0.0487	-0.0221	0.8736	0.0194	9.1011	1.071	9.9011	1.1071	B-	A+	A-
SCIENCE	8	623847	0	C	3	71412	0.3876	0.3178	0.3845	0.102	0.1877	0.0077	0.0003	0.4635	-0.1886	0.464	-0.2332	-0.1601	-0.0517	-0.016	0.9027	0.0195	-8.1791	0.9385	-5.1891	0.9466	A-	A-	A-
SCIENCE	8	661151	0	C	2	71547	0.4444	0.4417	0.1966	0.1775	0.1781	0.0057	0.0004	0.3396	0.3418	-0.1467	-0.1413	-0.1369	-0.0619	-0.0202	0.7992	0.0194	9.9011	1.1021	9.9011	1.133	A+	A+	A+
SCIENCE	8	301242	0	D	2	71552	0.4616	0.129	0.4588	0.1972	0.209	0.0059	0.0002	0.3812	-0.1748	0.3829	-0.1931	-0.125	-0.0565	-0.0179	0.9184	0.0195	9.9011	1.086	9.9011	1.109	A-	A+	A-
SCIENCE	8	339836	0	D	2	71529	0.446	0.4432	0.1043	0.3605	0.0857	0.0061	0.0003	0.3899	0.3917	-0.2661	-0.0814	-0.2468	-0.0608	-0.0212	0.3937	0.0193	9.2511	1.0694	7.8311	1.0814	A-	A-	A-
SCIENCE	8	623141	0	D	2	71623	0.5906	0.5876	0.1344	0.1555	0.1174	0.0047	0.0003	0.316	0.3183	-0.1038	-0.2606	-0.0717	-0.0491	-0.0213	0.2886	0.0193	9.9011	1.1071	9.9012	1.1649	A+	A+	A+
SCIENCE	8	623150	0	D	2	71529	0.4818	0.1315	0.1184	0.2651	0.4787	0.0062	0.0002	0.422	-0.2479	-0.2164	-0.1208	0.4233	-0.0541	-0.0165	0.635	0.0193	0.351	1.0026	-0.089	0.999	A+	A-	A-
SCIENCE	8	623844	0	D	2	71623	0.4886	0.4862	0.2353	0.0925	0.181	0.0047	0.0003	0.3201	0.3215	-0.2164	-0.1435	-0.0624	-0.0413	-0.0256	0.7368	0.0193	9.9011	1.1351	9.9012	1.1603	A-	A+	A+
SCIENCE	8	653706	0	D	2	71690	0.7548	0.0743	0.0979	0.7516	0.0721	0.0038	0.0003	0.4396	-0.2866	-0.2178	0.441	-0.1841	-0.0427	-0.0221	-0.8526	0.022	-7.3991	0.921	-7.1191	0.8623	A-	A-	A+
SCIENCE	8	739454	1	1	2	6068	0.3444	0.2295	0.1727	0.2508	0.3431	0.0038	0.0002	0.2845	-0.0563	-0.1588	-0.1134	0.2852	-0.0387	-0.0132	1.1541	0.0701	3.0311	1.097	3.9512	1.1815	A-	A-	A-
SCIENCE	8	739455	1	1	2	6065	0.5974	0.0716	0.1939	0.1354	0.5947	0.0043	0.0002	0.4502	-0.2619	-0.1891	-0.2209	0.4525	-0.0634	-0.0157	0.1285	0.0667	-3.3091	0.9198	-3.1291	0.8927	A+	A+	A+
SCIENCE	8	743545	1	2	2	6066	0.2743	0.16	0.2308	0.2731	0.3317	0.0043		0.121	-0.2293	-0.104	0.1229	0.1636	-0.0597		1.4378	0.0729	5.7012	1.2118	7.4614	1.439	A-	A-	A-
SCIENCE	8	749421	1	2	2	6048	0.4942	0.109	0.1656	0.4906	0.2275	0.0071	0.0002	0.2698	-0.2124	-0.2213	0.2719	0.04	-0.0479	-0.0132	0.4425	0.0667	4.9611	1.1311	4.1111	1.1428	A+	A+	A+
SCIENCE	8	737165	1	3	2	6052	0.56	0.084	0.2843	0.5563	0.0688	0.0064	0.0002	0.468	-0.2641	-0.2014	0.4701	-0.252	-0.0671	-0.0219	0.2151	0.0798	-2.3391	0.931	-2.6891	0.8894	A+	A-	A-
SCIENCE	8	739458	1	3	2	12017	0.7046	0.1335	0.1051	0.7015	0.0556	0.0038	0.0006	0.3663	-0.1778	-0.202	0.3696	-0.1859	-0.054	-0.0345	-0.5853	0.0506	-0.819	0.9819	-1.089	0.9563	A-	A-	A+
SCIENCE	8	749424	1	4	2	6058	0.2811	0.3585	0.1361	0.2203	0.2795	0.0056		0.0713	0.1669	-0.1901	-0.108	0.0727	-0.0364		1.4056	0.0726	7.2413	1.2696	7.6214	1.4397	A+	A-	A-
SCIENCE	8	739460	1	5	2	12000	0.5915	0.5881	0.1447	0.1678	0.0936	0.0052	0.0006	0.3992	0.4006	-0.208	-0.1555	-0.2133	-0.041	-0.0349	0.2884	0.0474	-1.849	0.9667	-1.779	0.9554	A+	A+	A-
SCIENCE	8	741090	1	5	2	6058	0.5216	0.1302	0.1976	0.1479	0.5187	0.0053	0.0003	0.4522	-0.2306	-0.161	-0.227	0.454	-0.0592	-0.0152	0.4146	0.0667	-1.459	0.9633	-1.219	0.9594	A+	A+	A-
SCIENCE	8	401702	1	A	2	6067	0.5202	0.1198	0.5181	0.1392	0.2188	0.0036	0.0005	0.3632	-0.2415	0.3637	-0.248	-0.0376	-0.0243	-0.0207	0.4028	0.0796	1.631	1.0497	2.1111	1.0873	A+	A-	A+
SCIENCE	8	739453	2	1	2	5934	0.7162	0.0969	0.7109	0.1131	0.0718	0.0069	0.0005	0.4999	-0.2757	0.5032	-0.2417	-0.2457	-0.0684	-0.0435	-0.5464	0.0722	-4.6391	0.8582	-4.4692	0.7579	A+	A+	A-
SCIENCE	8	743531	2	1	2	5937	0.5011	0.1562	0.4977	0.2048	0.1345	0.006	0.0008	0.3526	-0.1723	0.3546	-0.1338	-0.1642	-0.0433	-0.0465	0.5108	0.0673	1.531	1.0407	2.5211	1.0929	A+	A-	A+
SCIENCE	8	739456	2	2	2	5951	0.4999	0.1894	0.1552	0.1532	0.4977	0.004	0.0005	0.5258	-0.3176	-0.1503	-0.2227	0.5272	-0.0565	-0.0399	0.5552	0.0673	-5.3591	0.8645	-5.0692	0.8283	A-	A-	A-
SCIENCE	8	749422	2	2	2	5935	0.3574	0.1412	0.3548	0.1685	0.3284	0.0067	0.0005	0.249	-0.1865	0.2507	-0.2342	0.0791	-0.0436	-0.0421	1.2354	0.07	6.3712	1.2065	5.9713	1.2904	A-	A+	A+
SCIENCE	8	743555	2	3	2	5945	0.4229	0.2566	0.2099	0.4205	0.1074	0.0045	0.001	0.3706	-0.1512	-0.1103	0.3726	-0.2185	-0.0522	-0.057	0.8125	0.0678	0.221	1.0057	0.201	1.007	A-	A-	A-
SCIENCE	8	743566	2	3	2	5949	0.61	0.6071	0.1464	0.1263	0.1154	0.0043	0.0005	0.5125	0.5132	-0.2616	-0.2502	-0.2235	-0.0408	-0.0435	-0.0604	0.0686	-3.5091	0.9063	-3.8892	0.8375	A-	A-	A-
SCIENCE	8	737168	2	5	3	5934	0.2309	0.3528	0.2862	0.2292	0.1245	0.007	0.0003	-0.0793	0.1752	0.0169	-0.076	-0.1647	-0.0512	-0.0432	1.9612	0.0952	9.1815	1.5457	9.8121	2.1172	A+	A+	A+
SCIENCE	8	413680	2	A	2	5945	0.5647	0.1044	0.1069	0.5616	0.2216	0.005	0.0005	0.4826	-0.2714	-0.2567	0.4836	-0.1775	-0.0457	-0.0312	0.1739	0.0804	-1.9891	0.9395	-2.3291	0.8996	A-	A-	A-
SCIENCE	8	743539	3	1	3	5947	0.5786	0.1676	0.1257	0.5716	0.1229	0.0121		0.5382	-0.2773	-0.2298	0.5395	-0.2415	-0.0724		0.172	0.0799	-5.6692	0.8387	-5.0592	0.7984	A+	A+	A+
SCIENCE	8	748367	3	1	2	5992	0.1822	0.1801	0.2718	0.3621	0.1814	0.0045	0.0002	-0.0512	-0.1806	-0.0093	0.1978	-0.0499	-0.0337	-0.0049	2.3635	0.0841	6.9414	1.3767	9.9022	2.1792	A-	A-	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
SCIENCE	8	748370	3	1	2	5911	0.3725	0.2661	0.3658	0.192	0.158	0.0179	0.0002	0.1437	0.0598	0.1517	-0.1411	-0.084	-0.0995	-0.0049	1.199	0.0686	7.0312	1.212	6.3413	1.278	A+	A-	A+
SCIENCE	8	743551	3	2	2	5927	0.3749	0.3231	0.1497	0.1427	0.3691	0.015	0.0005	0.3601	-0.0311	-0.1831	-0.2412	0.3637	-0.0904	-0.0142	1.2145	0.0687	0.991	1.0282	2.2111	1.0922	A+	A+	A+
SCIENCE	8	741078	3	3	2	5980	0.5543	0.147	0.097	0.5507	0.1987	0.0065	0.0002	0.5205	-0.2148	-0.2804	0.5215	-0.2395	-0.0627	0.0163	0.2243	0.067	-6.3492	0.8464	-6.1892	0.7949	A-	A-	A-
SCIENCE	8	743559	3	3	3	5966	0.5109	0.1663	0.5063	0.148	0.1704	0.0085	0.0005	0.3812	-0.1336	0.3833	-0.1384	-0.2324	-0.0601	0.0081	0.443	0.0665	-0.619	0.9843	-0.799	0.9734	A-	A-	A-
SCIENCE	8	748372	3	3	2	5821	0.6428	0.0978	0.1683	0.0792	0.6216	0.0329	0.0002	0.4938	-0.2065	-0.2576	-0.2297	0.5038	-0.1364	-0.0161	0.0266	0.0678	-5.0691	0.871	-4.9592	0.8169	A-	A+	A+
SCIENCE	8	748374	3	4	3	5988	0.2998	0.1297	0.2289	0.2982	0.3379	0.005	0.0003	0.0651	-0.1821	-0.1617	0.0671	0.2154	-0.044	-0.0219	1.5864	0.0719	8.5013	1.3059	9.8016	1.593	A-	A+	A+
SCIENCE	8	741084	3	5	2	5915	0.4563	0.4483	0.2032	0.1762	0.1548	0.0174		0.3782	0.3808	-0.1062	-0.2381	-0.1299	-0.0684		0.8176	0.0669	0.871	1.0222	1.111	1.0378	A+	A+	A+
SCIENCE	8	494536	3	A	3	5821	0.3259	0.3151	0.2631	0.1811	0.2076	0.0331		0.0924	0.0886	-0.029	-0.1204	0.0383	0.0136		1.4673	0.0857	5.7412	1.2421	7.9016	1.5505	A-	A+	A+
SCIENCE	8	737158	4	1	2	5918	0.3631	0.36	0.2178	0.325	0.0886	0.008	0.0007	0.2283	0.2322	-0.1733	0.0667	-0.2227	-0.0827	-0.0207	1.2049	0.0831	5.9012	1.2259	6.1313	1.3441	A-	A-	A+
SCIENCE	8	748368	4	1	2	5949	0.3234	0.1886	0.3223	0.2099	0.2757	0.0032	0.0003	0.1687	-0.1866	0.1702	-0.1651	0.1424	-0.0501	-0.0084	1.4002	0.0707	6.1812	1.208	6.3313	1.3258	A-	A-	A-
SCIENCE	8	748369	4	1	3	5949	0.2634	0.2625	0.4323	0.209	0.0926	0.0035		0.2102	0.2108	0.0162	-0.0568	-0.2605	-0.0374		1.8571	0.076	2.2911	1.0901	5.6314	1.3931	A-	A-	A-
SCIENCE	8	743550	4	2	2	5923	0.5166	0.1985	0.1474	0.5126	0.1337	0.0077	0.0002	0.4481	-0.2574	-0.1684	0.4509	-0.1661	-0.0724	-0.0097	0.3456	0.0668	-3.0591	0.924	-3.3591	0.8854	A-	A+	A-
SCIENCE	8	748373	4	3	2	5944	0.5577	0.0844	0.1985	0.1575	0.5553	0.0044		0.5084	-0.2551	-0.2109	-0.2607	0.5086	-0.0417		0.3556	0.0668	-4.1391	0.8984	-2.7891	0.9044	A+	A+	A-
SCIENCE	8	741087	4	5	2	5912	0.3236	0.1779	0.105	0.3204	0.3869	0.0094	0.0003	0.0913	-0.0013	-0.2114	0.095	0.0561	-0.0644	-0.0084	1.3759	0.0705	9.9013	1.3487	9.9016	1.5509	A-	A-	A+
SCIENCE	8	741089	4	5	2	5876	0.5487	0.1002	0.0945	0.2496	0.54	0.0157		0.3897	-0.2289	-0.2613	-0.0881	0.3989	-0.125		0.296	0.0669	-1.149	0.9708	-1.309	0.953	A+	A+	A-
SCIENCE	8	743586	4	5	2	5913	0.3891	0.1543	0.3854	0.3223	0.1285	0.0092	0.0003	0.1634	-0.1623	0.1674	0.0917	-0.176	-0.068	-0.019	1.1193	0.0686	7.5212	1.2314	7.5213	1.3297	A+	A+	A-
SCIENCE	8	748375	4	5	2	5939	0.4551	0.1652	0.2268	0.4528	0.1501	0.005	0.0002	0.3429	-0.2587	-0.0896	0.3448	-0.0943	-0.0583	-0.0222	0.7393	0.067	1.9011	1.0504	2.1611	1.076	A+	A+	A-
SCIENCE	8	498038	4	B	2	5931	0.4146	0.1379	0.4119	0.2521	0.1916	0.0059	0.0007	0.3315	-0.1514	0.3343	-0.1045	-0.155	-0.0716	-0.0194	0.9382	0.0811	1.6011	1.0533	1.7011	1.0764	A+	A+	A+
SCIENCE	8	748539	5	1	2	5943	0.2071	0.2751	0.2737	0.2401	0.2061	0.0042	0.0008	0.1555	0.115	-0.0966	-0.1577	0.157	-0.0526	-0.0377	2.2235	0.0813	3.8712	1.1852	7.2617	1.6727	A+	A+	A+
SCIENCE	8	748540	5	1	3	5881	0.5382	0.1023	0.1636	0.1888	0.5299	0.0149	0.0005	0.5242	-0.1875	-0.2249	-0.2854	0.5267	-0.0881	-0.0234	0.3685	0.0667	-5.0891	0.8761	-5.0592	0.8338	A+	A-	A+
SCIENCE	8	737136	5	2	2	5939	0.3661	0.4624	0.364	0.1006	0.0673	0.0054	0.0003	0.2751	-0.0004	0.2773	-0.2565	-0.2041	-0.0639	-0.0141	1.239	0.0689	0.971	1.0273	3.0311	1.1318	A-	A-	A-
SCIENCE	8	737141	5	3	2	5932	0.6173	0.103	0.6131	0.1515	0.1256	0.0067	0.0002	0.5387	-0.2944	0.5405	-0.2094	-0.2805	-0.0694	-0.0056	-0.1513	0.069	-6.1992	0.8327	-5.6292	0.7677	A-	B-	A-
SCIENCE	8	743558	5	3	2	5929	0.1611	0.4289	0.1405	0.1599	0.2634	0.0064	0.001	0.1091	0.1016	-0.1892	0.111	-0.0445	-0.0694	-0.0031	2.5002	0.1054	1.2411	1.0803	7.092	2.0217	B-	A-	A+
SCIENCE	8	748542	5	3	2	5926	0.3307	0.1892	0.2423	0.3281	0.2325	0.0072	0.0007	0.1879	-0.1885	-0.058	0.1912	0.0363	-0.0635	-0.0424	1.4844	0.0709	5.6412	1.1855	5.9813	1.3196	A-	A-	A-
SCIENCE	8	737144	5	4	3	5925	0.6476	0.121	0.1194	0.6424	0.1092	0.0075	0.0005	0.5077	-0.206	-0.2387	0.5077	-0.3003	-0.0542	-0.0198	-0.2612	0.0698	-5.6892	0.84	-5.7393	0.7483	A+	A+	A+
SCIENCE	8	743591	5	5	2	5938	0.6303	0.077	0.1872	0.1033	0.6267	0.0055	0.0003	0.5162	-0.2657	-0.237	-0.2716	0.5161	-0.041	-0.037	-0.2105	0.0694	-3.7291	0.8947	-3.2791	0.8542	A+	A-	A-
SCIENCE	8	748545	5	5	2	5913	0.5948	0.5888	0.1745	0.1133	0.1133	0.0092	0.0008	0.4909	0.4932	-0.1987	-0.2707	-0.2333	-0.0641	-0.0483	0.1131	0.0675	-1.319	0.9651	-2.1091	0.9202	A-	A+	A+
SCIENCE	8	412144	5	A	2	5901	0.4281	0.1495	0.2038	0.4229	0.2118	0.0114	0.0007	0.312	-0.1776	-0.0924	0.3126	-0.1202	-0.0389	-0.0249	0.8691	0.0806	1.251	1.0396	1.3411	1.0585	A+	A-	A+
SCIENCE	8	737157	6	1	2	5957	0.4111	0.3198	0.1812	0.4085	0.0842	0.006	0.0003	0.1656	0.1694	-0.2486	0.1675	-0.2241	-0.0447	0.0059	0.9902	0.0673	7.8612	1.2177	7.9513	1.3198	A+	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
SCIENCE	8	743536	6	1	2	5890	0.7652	0.7518	0.0647	0.1178	0.0482	0.017	0.0005	0.4091	0.4223	-0.2216	-0.1929	-0.2288	-0.1246	-0.0265	-0.8814	0.0783	-4.5892	0.823	-4.2593	0.7187	A-	A-	A-
SCIENCE	8	748538	6	1	2	5939	0.5849	0.0946	0.1506	0.5795	0.166	0.009	0.0003	0.3883	-0.2678	-0.1732	0.3931	-0.1227	-0.0799	-0.0284	0.1954	0.0675	-1.289	0.9657	-1.319	0.9503	A+	A+	A+
SCIENCE	8	737160	6	2	2	5934	0.4157	0.0896	0.4115	0.2482	0.2405	0.01	0.0002	0.3511	-0.2133	0.3522	-0.1641	-0.0849	-0.05	-0.017	0.9385	0.0808	2.8511	1.093	3.9112	1.1849	A+	A+	A-
SCIENCE	8	737140	6	3	2	5964	0.494	0.2951	0.1248	0.4914	0.0836	0.005	0.0002	0.2589	-0.0187	-0.1729	0.2612	-0.2203	-0.0571	0.0054	0.5881	0.0666	5.6711	1.1492	5.3312	1.1919	A-	A+	A-
SCIENCE	8	743565	6	3	2	5955	0.3308	0.209	0.2704	0.3286	0.1853	0.0065	0.0002	0.0717	-0.0384	0.0363	0.0742	-0.0802	-0.0489	-0.0232	1.3901	0.0696	9.9013	1.3228	9.9015	1.5228	A-	A+	A+
SCIENCE	8	748541	6	3	2	5966	0.4614	0.1982	0.2177	0.4592	0.1201	0.0047	0.0002	0.2456	-0.1278	-0.1624	0.2483	-0.0041	-0.0605	-0.0232	0.7899	0.0668	6.1212	1.1623	6.1612	1.2268	A-	A+	A+
SCIENCE	8	748544	6	5	2	5967	0.7548	0.0899	0.7513	0.0932	0.0609	0.0038	0.0008	0.4766	-0.2595	0.4801	-0.2731	-0.2052	-0.0604	-0.0374	-0.7939	0.0769	-3.3191	0.8751	-3.8792	0.7536	B+	A+	A+
SCIENCE	8	748546	6	5	3	5934	0.5013	0.1483	0.1691	0.1761	0.4962	0.0093	0.0008	0.4989	-0.2056	-0.2443	-0.207	0.499	-0.0537	-0.0285	0.5944	0.0666	-4.6291	0.888	-4.2391	0.8625	A+	A+	A+
SCIENCE	8	411599	6	A	2	5950	0.5768	0.1118	0.1143	0.194	0.5725	0.0073	0.0002	0.3835	-0.1416	-0.2505	-0.1569	0.3844	-0.0416	-0.0232	0.1431	0.081	-0.089	0.9968	0.161	1.0068	A+	A+	A+
SCIENCE	8	743534	7	1	2	11886	0.4753	0.4719	0.1611	0.203	0.1567	0.0072	0.0002	0.3415	0.3442	-0.1857	-0.1021	-0.1562	-0.0655	-0.0179	0.7107	0.0515	2.4811	1.0503	2.6711	1.0732	A-	A+	A+
SCIENCE	8	743593	7	1	2	5797	0.4965	0.1685	0.1599	0.163	0.4845	0.0237	0.0003	0.4175	-0.2097	-0.1109	-0.2165	0.4168	-0.0602	-0.0004	0.4766	0.0671	-1.159	0.9701	-1.6391	0.9417	A+	A-	A-
SCIENCE	8	743594	7	1	2	5826	0.7079	0.0815	0.6943	0.0609	0.1441	0.0192		0.3604	-0.068	0.3697	-0.2356	-0.2327	-0.0993		-0.4723	0.0719	-0.509	0.9835	1.0811	1.0618	A+	A-	A-
SCIENCE	8	737135	7	2	2	5892	0.4518	0.4481	0.2291	0.2049	0.1098	0.0077	0.0003	0.4441	0.4452	-0.1525	-0.1916	-0.2376	-0.0631	-0.0092	0.7745	0.0674	-1.159	0.9694	-0.789	0.9714	A+	A+	A+
SCIENCE	8	743597	7	2	3	5907	0.4715	0.1785	0.4689	0.2131	0.134	0.0056		0.4036	-0.1407	0.4034	-0.2659	-0.1071	-0.0277		0.6274	0.0671	0.141	1.0034	0.011	0.9998	A-	A+	A-
SCIENCE	8	741074	7	3	2	5914	0.428	0.1205	0.2195	0.2295	0.4261	0.0044		0.3652	-0.2376	-0.1616	-0.0804	0.3663	-0.0468		0.9855	0.0681	2.6511	1.0746	3.1411	1.1252	A-	A+	A+
SCIENCE	8	741083	7	3	2	5907	0.3684	0.3663	0.2715	0.1145	0.2421	0.0052	0.0003	0.1996	0.2008	-0.0878	-0.1986	0.0198	-0.0388	-0.011	1.224	0.0694	7.6112	1.2409	7.8214	1.3758	A-	A-	A-
SCIENCE	8	743598	7	3	2	5907	0.4485	0.446	0.1421	0.1231	0.2833	0.0052	0.0003	0.4077	0.4089	-0.2561	-0.1991	-0.0984	-0.0529	-0.0136	0.967	0.068	-0.229	0.9935	-0.189	0.9921	A+	A-	A-
SCIENCE	8	743590	7	5	3	5905	0.403	0.1418	0.2096	0.4007	0.2421	0.0056	0.0003	0.3194	-0.2345	-0.1292	0.3211	-0.0434	-0.0558	-0.0154	1.0081	0.0821	1.6411	1.057	2.0811	1.1025	A-	A+	A+
SCIENCE	8	494427	7	A	2	5913	0.6819	0.0732	0.168	0.6788	0.0754	0.0042	0.0003	0.4194	-0.2066	-0.2271	0.4213	-0.207	-0.0463	-0.0172	-0.4022	0.0841	-0.719	0.9744	-1.1091	0.9291	A-	A-	A-
SCIENCE	8	743595	8	1	2	6004	0.6174	0.0789	0.6144	0.17	0.1318	0.005		0.5169	-0.2309	0.5167	-0.2982	-0.2209	-0.0361		0.0495	0.0676	-4.7491	0.8809	-5.0292	0.81	A+	A+	A-
SCIENCE	8	743552	8	2	2	5984	0.3453	0.315	0.1626	0.3424	0.1717	0.0076	0.0007	0.1162	0.1349	-0.1835	0.1194	-0.1219	-0.0608	-0.0141	1.2799	0.0695	9.3213	1.3041	9.0214	1.4325	A-	A-	A-
SCIENCE	8	743596	8	2	2	5992	0.4513	0.1694	0.1206	0.4481	0.2549	0.0063	0.0007	0.2893	-0.1661	-0.2209	0.292	-0.0132	-0.0638	-0.0066	0.8097	0.067	4.1911	1.1134	3.9711	1.1423	A+	A-	A-
SCIENCE	8	743600	8	2	2	5993	0.3312	0.329	0.1135	0.3817	0.169	0.0065	0.0003	0.2688	0.2699	-0.2045	-0.0292	-0.1178	-0.0389	-0.0264	1.4374	0.0708	4.4911	1.1486	5.3213	1.2683	A+	A-	A-
SCIENCE	8	741076	8	3	2	6004	0.535	0.0837	0.5323	0.2358	0.1432	0.0046	0.0003	0.4069	-0.2459	0.4065	-0.1268	-0.2265	-0.0206	-0.0095	0.3523	0.0667	-1.419	0.9644	-1.5991	0.9445	A-	A-	A-
SCIENCE	8	743599	8	3	2	5992	0.2029	0.2015	0.318	0.2633	0.2101	0.0063	0.0007	0.1322	0.1339	-0.1333	-0.0061	0.0386	-0.0509	-0.0235	2.2132	0.0814	3.7612	1.1799	6.4916	1.5762	A-	A-	A-
SCIENCE	8	743582	8	5	2	5973	0.3959	0.3919	0.297	0.1679	0.1331	0.0101		0.3147	0.3168	0.0367	-0.1964	-0.2697	-0.064		1.1091	0.0683	1.131	1.0319	0.751	1.0288	B-	A-	A-
SCIENCE	8	743592	8	5	3	5968	0.3341	0.1061	0.141	0.3305	0.4115	0.0108	0.0002	0.2222	-0.1972	-0.254	0.2267	0.1051	-0.0908	0.0115	1.4622	0.071	4.3211	1.144	5.0813	1.2596	A-	A-	A+
SCIENCE	8	496005	8	D	2	5966	0.4184	0.2322	0.198	0.1448	0.4137	0.0111	0.0002	0.3222	-0.1202	-0.0751	-0.2073	0.3239	-0.0547	-0.0124	0.9474	0.0809	2.7811	1.0934	2.8511	1.1286	A+	A+	A-
SCIENCE	8	743535	9	1	3	5976	0.4567	0.1697	0.251	0.4549	0.1205	0.0033	0.0005	0.3584	-0.2159	-0.0751	0.36	-0.1911	-0.049	-0.0269	0.7225	0.0668	1.901	1.049	1.6611	1.0586	B-	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
SCIENCE	8	748347	9	1	2	5973	0.3141	0.154	0.3624	0.1665	0.3127	0.0043		0.2869	-0.1696	-0.0427	-0.133	0.2874	-0.029		1.531	0.0717	1.051	1.0344	2.0111	1.1041	A+	A-	A+
SCIENCE	8	748349	9	1	3	5972	0.4864	0.1525	0.4842	0.2132	0.1455	0.0042	0.0003	0.3208	-0.1929	0.323	-0.1602	-0.0642	-0.0546	-0.0164	0.6155	0.0667	1.711	1.0437	1.211	1.0422	A+	A+	A+
SCIENCE	8	743553	9	2	2	5950	0.4373	0.4337	0.1974	0.1795	0.1812	0.0075	0.0007	0.3858	0.3877	-0.167	-0.1975	-0.1141	-0.0681	-0.0013	0.8371	0.0807	-1.139	0.9637	-0.759	0.9662	A+	A-	A+
SCIENCE	8	741080	9	3	2	5964	0.3873	0.2032	0.1609	0.3851	0.245	0.0057	0.0002	0.2318	-0.1338	-0.1307	0.234	-0.0175	-0.0599	0.0003	1.0745	0.0681	5.3612	1.1548	5.2612	1.2187	A-	A+	A+
SCIENCE	8	748353	9	3	2	5976	0.2841	0.176	0.283	0.2617	0.2754	0.0038		0.134	-0.0865	0.135	-0.0187	-0.0388	-0.0369		1.6446	0.073	5.5012	1.2007	6.4914	1.3936	A+	A+	A+
SCIENCE	8	748354	9	3	3	5666	0.3334	0.3149	0.245	0.1355	0.249	0.0552	0.0003	0.2345	0.2417	-0.0973	-0.0901	-0.0395	-0.0964	-0.0278	1.5316	0.0717	3.9611	1.1346	4.9713	1.2718	A-	A+	A+
SCIENCE	8	737148	9	5	2	5976	0.6558	0.068	0.6533	0.103	0.1719	0.0038		0.4507	-0.2019	0.4505	-0.2684	-0.2133	-0.0244		-0.2827	0.0698	-3.1091	0.912	-1.3191	0.9341	A+	A+	A-
SCIENCE	8	743587	9	5	2	11881	0.6379	0.0563	0.0891	0.6326	0.2137	0.0082	0.0001	0.5001	-0.2543	-0.2943	0.5027	-0.2274	-0.0733	-0.0078	-0.2315	0.0492	-3.1391	0.9365	-3.5591	0.8811	A-	A-	A+
SCIENCE	8	409130	9	C	2	5981	0.5971	0.5953	0.2897	0.0575	0.0545	0.0028	0.0002	0.3632	0.3646	-0.285	-0.1479	-0.0568	-0.0385	-0.0234	0.0399	0.0808	1.371	1.0431	0.151	1.0066	A-	A+	A+
SCIENCE	8	743537	10	1	3	5934	0.3028	0.3394	0.3005	0.1953	0.157	0.0075	0.0003	0.1343	0.089	0.1375	-0.1372	-0.1227	-0.0667	-0.0238	1.5435	0.0854	5.4812	1.2248	7.3315	1.5127	A-	A+	A+
SCIENCE	8	748346	10	1	2	5939	0.4981	0.1152	0.2576	0.1256	0.4946	0.007		0.4572	-0.2564	-0.1418	-0.2399	0.4592	-0.0743		0.5579	0.0664	-3.1091	0.9253	-2.6391	0.9123	A+	A+	A+
SCIENCE	8	748348	10	1	2	5830	0.3031	0.2051	0.1841	0.2954	0.2901	0.0247	0.0005	-0.0219	-0.0968	-0.1083	-0.0105	0.2257	-0.1071	0.0045	1.5599	0.071	9.9014	1.3905	9.9017	1.6968	A-	A-	A-
SCIENCE	8	743542	10	2	2	5951	0.4322	0.1607	0.43	0.0717	0.3326	0.0045	0.0005	0.1263	-0.2919	0.1288	-0.0964	0.1527	-0.0526	-0.0064	0.8828	0.0668	9.9013	1.2801	9.7414	1.3795	A+	A+	A+
SCIENCE	8	748351	10	2	2	5950	0.404	0.4019	0.156	0.2127	0.2242	0.0048	0.0003	0.2913	0.2937	-0.1759	-0.1078	-0.0746	-0.0682	-0.0114	1.0989	0.0676	1.621	1.0433	1.6811	1.0646	A+	A-	A-
SCIENCE	8	748352	10	2	2	5943	0.4886	0.1831	0.1438	0.4855	0.1812	0.0042	0.0022	0.3118	-0.0885	-0.2079	0.3136	-0.1183	-0.0489	-0.0186	0.5847	0.0664	1.511	1.0375	1.441	1.0494	A+	A-	A-
SCIENCE	8	743554	10	3	2	5948	0.6733	0.1092	0.0751	0.6696	0.1406	0.0055		0.4315	-0.2844	-0.2407	0.4341	-0.1365	-0.0622		-0.3972	0.0715	-2.3191	0.9273	-2.2091	0.8827	A-	A-	A-
SCIENCE	8	743561	10	3	2	5942	0.2757	0.196	0.3045	0.2192	0.2739	0.0062	0.0003	0.1733	-0.1483	0.1467	-0.1968	0.1758	-0.0676	-0.0167	1.7614	0.0733	3.8711	1.1403	4.6313	1.2817	A+	A+	A-
SCIENCE	8	409133	10	D	2	5955	0.4724	0.0508	0.0696	0.4049	0.4703	0.0038	0.0005	0.3381	-0.2321	-0.284	-0.0867	0.34	-0.0544	-0.0252	0.6669	0.0796	0.991	1.0298	0.451	1.0181	A-	A-	A+
SCIENCE	8	745597	11	1	2	5929	0.379	0.1728	0.3758	0.1194	0.3236	0.0082	0.0002	0.2037	-0.1085	0.208	-0.2292	0.0478	-0.0855	-0.0037	1.1406	0.0687	5.4112	1.1625	5.3912	1.2328	A+	A-	A+
SCIENCE	8	743549	11	2	2	5934	0.5841	0.0885	0.053	0.2713	0.5797	0.0075		0.4718	-0.1856	-0.2495	-0.2678	0.4745	-0.0752		0.075	0.0673	-3.2591	0.9182	-3.2491	0.8772	A+	A+	A+
SCIENCE	8	745696	11	2	2	5938	0.4192	0.4163	0.203	0.1218	0.252	0.0067	0.0002	0.1449	0.1504	-0.039	-0.14	-0.011	-0.0938	-0.0163	0.9502	0.0677	7.0312	1.202	6.8713	1.2738	A-	A-	A-
SCIENCE	8	743557	11	3	2	5945	0.4653	0.4626	0.2188	0.1482	0.1647	0.0057		0.3569	0.3592	-0.117	-0.2414	-0.1075	-0.0675		0.7864	0.067	-0.519	0.9863	0.111	1.0034	A-	A+	A+
SCIENCE	8	743562	11	3	2	5933	0.3765	0.4847	0.3736	0.0821	0.0518	0.0072	0.0005	0.0963	0.1734	0.1015	-0.2753	-0.2363	-0.0843	-0.0283	1.1965	0.0691	8.4113	1.2653	8.3214	1.3864	A+	A+	A-
SCIENCE	8	745600	11	3	2	5924	0.435	0.1798	0.19	0.19	0.431	0.009	0.0002	0.3767	-0.13	-0.1868	-0.1478	0.3785	-0.0661	0.0051	0.7937	0.067	1.701	1.0448	1.5111	1.0531	A+	A-	A+
SCIENCE	8	737143	11	4	2	5949	0.6831	0.0731	0.1365	0.6797	0.1057	0.0049	0.0002	0.4345	-0.2663	-0.1788	0.4365	-0.2237	-0.0607	0.0026	-0.2822	0.0693	-2.6991	0.9252	-1.1691	0.9435	A+	A+	A+
SCIENCE	8	741092	11	5	2	5944	0.557	0.0871	0.2944	0.5538	0.0589	0.0059		0.4562	-0.213	-0.2333	0.4589	-0.2373	-0.0768		0.2653	0.0795	-2.3491	0.9313	-1.5491	0.9357	A+	A+	A-
SCIENCE	8	745604	11	5	2	5944	0.5575	0.1166	0.5543	0.1239	0.1994	0.0055	0.0003	0.4447	-0.2406	0.4478	-0.2761	-0.1198	-0.087	-0.0053	0.2785	0.0667	-3.1291	0.923	-1.269	0.9545	A+	A+	A+
SCIENCE	8	743532	12	1	2	6004	0.696	0.1241	0.0972	0.0815	0.6935	0.0032	0.0005	0.3793	-0.1293	-0.2194	-0.2387	0.3807	-0.0379	-0.0189	-0.4099	0.0716	-0.979	0.9686	0.251	1.0124	A+	A+	A+
SCIENCE	8	745596	12	1	2	5968	0.4186	0.22	0.1658	0.4145	0.19	0.0093	0.0003	0.3412	-0.1783	-0.171	0.342	-0.067	-0.0475	-0.0102	0.9376	0.0675	1.421	1.0375	2.2111	1.0838	A-	A-	A+

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	P(INV)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)	Corr(INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
SCIENCE	8	743548	12	2	2	5987	0.6436	0.6394	0.1513	0.1193	0.0835	0.0053	0.0012	0.5	0.5015	-0.1967	-0.2453	-0.3085	-0.0599	-0.0336	-0.1659	0.0695	-4.2991	0.8792	-3.3992	0.8497	A+	A+	A-
SCIENCE	8	745599	12	2	2	5996	0.5677	0.1933	0.1625	0.5649	0.0743	0.0045	0.0005	0.4164	-0.1621	-0.2301	0.4187	-0.2065	-0.0609	-0.0189	0.2725	0.0673	-1.279	0.9667	-1.5391	0.9435	A-	A+	A+
SCIENCE	8	741082	12	3	2	5994	0.2307	0.2295	0.1636	0.375	0.2265	0.005	0.0003	0.0413	0.0433	-0.1442	0.0633	0.0201	-0.0515	-0.0163	1.9895	0.0771	4.9512	1.2082	6.8515	1.5428	A-	A-	A+
SCIENCE	8	743560	12	3	2	5983	0.1935	0.2315	0.1922	0.1827	0.3865	0.0071		-0.0769	-0.0513	-0.0733	-0.211	0.2841	-0.0749		2.2603	0.0983	5.7013	1.3467	9.5623	2.2592	A-	A-	A-
SCIENCE	8	745601	12	3	2	6005	0.3625	0.3613	0.3123	0.1241	0.1988	0.003	0.0005	0.4301	0.4301	-0.1993	-0.2417	-0.0816	-0.0341	-0.0053	1.3046	0.0695	-3.0091	0.9148	-1.1991	0.9468	A-	A-	A-
SCIENCE	8	745602	12	3	3	5996	0.3918	0.1845	0.196	0.2247	0.3898	0.0048	0.0002	0.3287	-0.118	-0.1801	-0.0965	0.33	-0.0506	0.0102	1.2	0.0688	0.221	1.0059	1.1911	1.0504	A+	A+	A+
SCIENCE	8	743533	12	5	3	5971	0.651	0.1319	0.1263	0.645	0.0876	0.0088	0.0003	0.4927	-0.1863	-0.3029	0.4923	-0.2367	-0.0515	-0.0084	-0.2107	0.0698	-4.2291	0.8793	-3.6592	0.8346	A+	A+	A+
SCIENCE	8	410872	12	C	2	5968	0.4812	0.2441	0.4766	0.1377	0.1319	0.0091	0.0005	0.4535	-0.1747	0.4519	-0.2418	-0.1918	-0.0205	-0.0211	0.6312	0.0802	-2.8391	0.9146	-2.5691	0.8944	A-	A+	A-

Multiple-Choice Computer-Based Item Statistics

Column Heading	Definition
Content	Content Area
Grade	Grade
PubID	Item ID
Form	Form Number
Stand	Standard
Depth	Depth of Knowledge
N	N
PValue	*P*-Value
P(A)	Proportion A
P(B)	Proportion B
P(C)	Proportion C
P(D)	Proportion D
P(OMIT)	Proportion Omits
PtBis	Point Biserial
Corr(A)	Correlation A
Corr(B)	Correlation B
Corr(C)	Correlation C
Corr(D)	Correlation D
Corr(OMIT)	Correlation Omits

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	3	660237	0	A-C	3	26407	0.4505	0.1395	0.1907	0.218	0.4494	0.0024	0.4503	-0.1804	-0.1916	-0.2066	0.4501	-0.017
ELA	3	710614	0	A-C	2	26399	0.4148	0.2043	0.2401	0.4136	0.1393	0.0027	0.3175	-0.1054	-0.1182	0.3183	-0.1787	-0.0364
ELA	3	660244	0	A-K	2	26421	0.3668	0.1904	0.3661	0.1451	0.2965	0.0019	0.3899	-0.1512	0.39	-0.3156	-0.0362	-0.0189
ELA	3	660246	0	A-K	3	26399	0.3944	0.1804	0.3091	0.1144	0.3933	0.0027	0.3431	-0.2215	0.0361	-0.3082	0.3432	-0.02
ELA	3	660248	0	A-K	3	26421	0.5149	0.5139	0.1255	0.1332	0.2255	0.0019	0.3756	0.3756	-0.1933	-0.2711	-0.0739	-0.0159
ELA	3	710616	0	A-K	1	26415	0.7076	0.0827	0.7061	0.0751	0.134	0.0021	0.5202	-0.2408	0.5203	-0.2204	-0.3265	-0.03
ELA	3	710617	0	A-K	2	26409	0.6108	0.6094	0.1778	0.1004	0.1101	0.0023	0.4662	0.4665	-0.307	-0.1844	-0.1704	-0.0307
ELA	3	660254	0	A-V	3	26404	0.6493	0.1513	0.1301	0.6477	0.0684	0.0025	0.5796	-0.321	-0.3047	0.5796	-0.229	-0.0306
ELA	3	710620	0	A-V	1	26363	0.4742	0.162	0.1579	0.2037	0.4723	0.0041	0.4068	-0.238	-0.2971	-0.0125	0.4072	-0.0349
ELA	3	710726	0	A-V	2	26379	0.4973	0.2602	0.4955	0.1078	0.1331	0.0035	0.3461	-0.2341	0.347	-0.1899	-0.0286	-0.0375
ELA	3	625452	0	B-C	2	26422	0.446	0.4452	0.1595	0.1153	0.2782	0.0019	0.4321	0.4324	-0.2642	-0.2816	-0.0603	-0.0286
ELA	3	625454	0	B-C	2	26428	0.5672	0.1052	0.0883	0.5662	0.2386	0.0016	0.248	-0.2961	-0.2367	0.249	0.0842	-0.0312
ELA	3	663183	0	B-C	2	26334	0.5251	0.1684	0.1671	0.5224	0.1369	0.0052	0.4422	-0.1552	-0.1896	0.4423	-0.2607	-0.035
ELA	3	663184	0	B-C	2	26396	0.4379	0.1414	0.1696	0.2495	0.4366	0.0028	0.3134	-0.195	-0.0781	-0.1317	0.3139	-0.0267
ELA	3	663187	0	B-C	3	26431	0.4645	0.4638	0.1591	0.1941	0.1814	0.0015	0.3911	0.3914	-0.2989	-0.1548	-0.0613	-0.0263
ELA	3	625451	0	B-K	2	26432	0.6682	0.1388	0.0978	0.0947	0.6672	0.0015	0.5679	-0.2473	-0.2962	-0.3183	0.5678	-0.0223
ELA	3	663188	0	B-K	2	26426	0.524	0.0689	0.5231	0.1299	0.2764	0.0017	0.5771	-0.2566	0.577	-0.2381	-0.3179	-0.0222
ELA	3	663191	0	B-K	2	26308	0.5514	0.2057	0.083	0.1571	0.548	0.0062	0.4699	-0.2468	-0.2312	-0.1849	0.47	-0.04
ELA	3	663192	0	B-K	3	26416	0.6452	0.6438	0.1236	0.1213	0.1091	0.0021	0.4991	0.4994	-0.225	-0.2897	-0.2214	-0.0326
ELA	3	633104	0	B-V	2	26430	0.4604	0.4597	0.1531	0.058	0.3277	0.0015	0.4608	0.4609	-0.3141	-0.2676	-0.1132	-0.0239
ELA	3	662651	0	D	3	26440	0.3168	0.4779	0.1127	0.0919	0.3164	0.0012	0.3547	-0.1222	-0.1954	-0.1435	0.3548	-0.0217
ELA	3	662659	0	D	3	26415	0.6906	0.6892	0.1825	0.0538	0.0724	0.0021	0.3011	0.3017	-0.0954	-0.2224	-0.1988	-0.0233
ELA	3	662720	0	D	2	26425	0.449	0.2132	0.1714	0.4482	0.1655	0.0017	0.3682	-0.1061	-0.1647	0.3683	-0.2071	-0.017
ELA	3	662723	0	D	2	26441	0.4894	0.1656	0.2	0.4888	0.1444	0.0011	0.4169	-0.2726	-0.1867	0.4168	-0.0905	-0.0145
ELA	3	714296	0	D	1	26441	0.4912	0.4906	0.1892	0.1333	0.1858	0.0011	0.4127	0.4129	-0.2557	-0.1222	-0.1646	-0.0199
ELA	3	714297	0	D	1	26440	0.6825	0.0736	0.6817	0.079	0.1645	0.0012	0.4854	-0.2976	0.4855	-0.2637	-0.2067	-0.0206
ELA	3	714299	0	D	1	26441	0.3877	0.2227	0.1186	0.3873	0.2703	0.0011	0.2835	-0.1392	-0.0661	0.284	-0.1307	-0.0297
ELA	3	714809	0	D	1	26450	0.6289	0.0492	0.1805	0.6284	0.1411	0.0008	0.4636	-0.1871	-0.3022	0.4638	-0.1924	-0.0155
ELA	3	714811	0	D	3	26424	0.4746	0.2014	0.132	0.1911	0.4738	0.0018	0.4665	-0.212	-0.1978	-0.2038	0.4664	-0.019

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	3	737074	1	A-C	2	6522	0.4457	0.1591	0.445	0.197	0.1973	0.0015	0.4558	-0.1795	0.4556	-0.1669	-0.236	-0.0117
ELA	3	737069	1	A-K	2	6521	0.4479	0.1265	0.4472	0.1531	0.2716	0.0017	0.3662	-0.1968	0.3666	-0.1666	-0.1258	-0.0224
ELA	3	737070	1	A-K	2	6524	0.2216	0.1718	0.2626	0.2214	0.3431	0.0012	0.1682	-0.1618	-0.0165	0.1678	-0.0037	0.0108
ELA	3	737071	1	A-K	2	6511	0.5124	0.1372	0.1131	0.2358	0.5107	0.0032	0.4234	-0.1449	-0.1897	-0.2374	0.422	-0.0037
ELA	3	737073	1	A-K	3	6523	0.4118	0.4112	0.2189	0.1825	0.186	0.0014	0.4414	0.4417	-0.1246	-0.2593	-0.1664	-0.024
ELA	3	737065	1	A-V	2	6516	0.5006	0.0991	0.2125	0.1866	0.4994	0.0024	0.3857	-0.2183	-0.2636	-0.0482	0.386	-0.0246
ELA	3	737066	1	A-V	2	6515	0.3727	0.1539	0.1588	0.3717	0.3131	0.0026	0.4369	-0.2074	-0.1667	0.4369	-0.1603	-0.021
ELA	3	737067	1	A-V	2	6521	0.4532	0.4524	0.1975	0.1444	0.2041	0.0017	0.3804	0.38	-0.1089	-0.2936	-0.1048	-0.0094
ELA	3	743406	1	D	2	8980	0.5233	0.5225	0.405	0.0478	0.0231	0.0016	0.2709	0.2713	-0.1709	-0.1484	-0.1274	-0.0206
ELA	3	743415	1	D	2	6514	0.6099	0.1239	0.1164	0.6082	0.1488	0.0028	0.4222	-0.18	-0.1904	0.4227	-0.2379	-0.0259
ELA	3	743481	1	D	2	6520	0.5618	0.5608	0.1447	0.1473	0.1454	0.0018	0.4923	0.493	-0.2304	-0.2138	-0.2452	-0.0332
ELA	3	743447	2	A-C	3	2497	0.4802	0.1988	0.212	0.4796	0.1084	0.0012	0.2726	-0.1225	-0.0085	0.2729	-0.2686	-0.0136
ELA	3	743440	2	A-K	2	2499	0.5194	0.252	0.5192	0.1272	0.1012	0.0004	0.3872	-0.0754	0.3873	-0.2164	-0.2934	-0.0095
ELA	3	743441	2	A-K	2	2496	0.7716	0.7704	0.052	0.0408	0.1352	0.0016	0.4024	0.4025	-0.2518	-0.2097	-0.2076	-0.0226
ELA	3	743443	2	A-K	3	2499	0.507	0.226	0.166	0.5068	0.1008	0.0004	0.4636	-0.2198	-0.2838	0.4638	-0.1124	-0.0266
ELA	3	743446	2	A-K	2	2496	0.53	0.0836	0.5292	0.1624	0.2232	0.0016	0.3191	-0.2009	0.3191	-0.1247	-0.1365	-0.0214
ELA	3	743436	2	A-V	2	2499	0.9028	0.0412	0.0292	0.0268	0.9024	0.0004	0.4176	-0.2398	-0.2351	-0.2253	0.418	-0.0217
ELA	3	743437	2	A-V	2	2499	0.7151	0.7148	0.136	0.0876	0.0612	0.0004	0.3209	0.3214	-0.1675	-0.2346	-0.0874	-0.0217
ELA	3	743438	2	A-V	2	2496	0.5946	0.1628	0.1772	0.0648	0.5936	0.0016	0.3552	-0.257	-0.058	-0.2316	0.3549	-0.0067
ELA	3	743407	2	D	2	4968	0.6572	0.6569	0.0392	0.0634	0.24	0.0004	0.3079	0.3082	-0.2153	-0.2721	-0.0887	-0.0165
ELA	3	743416	2	D	2	2496	0.8357	0.0632	0.0492	0.0516	0.8344	0.0016	0.3727	-0.2058	-0.1826	-0.2182	0.3724	-0.0153
ELA	3	743482	2	D	2	2495	0.8673	0.078	0.0208	0.0336	0.8656	0.002	0.3811	-0.26	-0.1863	-0.1814	0.3781	0.0008
ELA	3	743367	3	A-C	2	2538	0.5351	0.2185	0.1189	0.5346	0.1272	0.0008	0.5286	-0.2285	-0.2812	0.5292	-0.232	-0.0436
ELA	3	743368	3	A-K	2	2537	0.6523	0.1748	0.0823	0.0902	0.6516	0.0012	0.4314	-0.1691	-0.2579	-0.2439	0.4319	-0.0246
ELA	3	743369	3	A-K	2	2538	0.708	0.1421	0.7075	0.0642	0.0854	0.0008	0.5342	-0.2914	0.5337	-0.2668	-0.2707	0.0011
ELA	3	743370	3	A-K	2	2539	0.4195	0.2575	0.1693	0.4193	0.1535	0.0004	0.247	-0.0528	-0.0088	0.247	-0.2646	-0.0053
ELA	3	743371	3	A-K	2	2539	0.6176	0.1563	0.1638	0.0622	0.6173	0.0004	0.4458	-0.2152	-0.188	-0.2839	0.4462	-0.0296
ELA	3	743373	3	A-V	2	2540	0.524	0.1213	0.524	0.3	0.0547		0.3725	-0.2361	0.3725	-0.1731	-0.1303	
ELA	3	743374	3	A-V	2	2536	0.8817	0.8803	0.0378	0.0551	0.0252	0.0016	0.4308	0.4308	-0.2477	-0.263	-0.2015	-0.0252

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	3	743375	3	A-V	2	2538	0.6872	0.6866	0.0717	0.1236	0.1173	0.0008	0.4076	0.4085	-0.215	-0.2488	-0.1588	-0.0367
ELA	3	743408	3	D	2	5025	0.8927	0.8917	0.031	0.0195	0.0566	0.0012	0.4036	0.4038	-0.2101	-0.1864	-0.2703	-0.0247
ELA	3	743417	3	D	2	2536	0.3533	0.0815	0.3528	0.05	0.5142	0.0016	0.306	-0.1471	0.3065	-0.2251	-0.1123	-0.0252
ELA	3	743483	3	D	2	2538	0.6087	0.1602	0.1622	0.6083	0.0685	0.0008	0.3683	-0.1271	-0.2099	0.3692	-0.2177	-0.0453
ELA	3	744000	4	A-C	2	2489	0.5452	0.5443	0.1284	0.2595	0.0662	0.0016	0.3993	0.4	-0.1708	-0.1617	-0.281	-0.0346
ELA	3	744001	4	A-K	2	2493	0.7537	0.7537	0.0602	0.1059	0.0802		0.5244	0.5244	-0.1605	-0.3635	-0.2795	
ELA	3	744004	4	A-K	2	2488	0.7078	0.0943	0.1484	0.7064	0.0489	0.002	0.4424	-0.2044	-0.2301	0.444	-0.2716	-0.0469
ELA	3	744005	4	A-K	2	2493	0.6743	0.0706	0.1873	0.6743	0.0678		0.4021	-0.209	-0.2137	0.4021	-0.205	
ELA	3	744006	4	A-K	2	2489	0.636	0.0866	0.2042	0.0726	0.635	0.0016	0.4292	-0.188	-0.2033	-0.2741	0.4294	-0.0192
ELA	3	744008	4	A-V	2	2491	0.6383	0.0726	0.2531	0.0357	0.6378	0.0008	0.3713	-0.2372	-0.1736	-0.2219	0.3715	-0.0136
ELA	3	744009	4	A-V	2	2493	0.6109	0.0489	0.6109	0.2688	0.0714		0.3751	-0.2475	0.3751	-0.1221	-0.2927	
ELA	3	744010	4	A-V	2	2491	0.6006	0.1649	0.6001	0.0622	0.1721	0.0008	0.3744	-0.2874	0.3751	-0.2725	-0.0275	-0.0337
ELA	3	743409	4	D	2	2491	0.7676	0.0401	0.7669	0.0245	0.1677	0.0008	0.3317	-0.2162	0.3314	-0.186	-0.1842	-0.0052
ELA	3	743475	4	D	1	2487	0.3715	0.1572	0.3706	0.3169	0.1528	0.0024	0.1356	-0.1516	0.1357	0.0775	-0.1279	-0.0081
ELA	3	743484	4	D	2	2492	0.9089	0.0481	0.9085	0.0237	0.0193	0.0004	0.3699	-0.2363	0.3704	-0.2223	-0.1599	-0.0214
ELA	3	745852	5	A-C	2	2491	0.5054	0.1625	0.504	0.2166	0.1141	0.0028	0.3339	-0.1766	0.3346	-0.1099	-0.1744	-0.0265
ELA	3	745846	5	A-K	2	2493	0.3835	0.3827	0.3815	0.1365	0.0973	0.002	0.3316	0.3311	-0.0215	-0.242	-0.2274	-0.0007
ELA	3	745847	5	A-K	3	2496	0.5072	0.1677	0.1493	0.5068	0.1753	0.0008	0.3156	-0.1049	-0.1534	0.3164	-0.166	-0.0416
ELA	3	745848	5	A-K	3	2496	0.4984	0.2682	0.498	0.1153	0.1177	0.0008	0.2934	-0.0958	0.2938	-0.2206	-0.1037	-0.0212
ELA	3	745851	5	A-K	2	2491	0.5861	0.1245	0.1169	0.1713	0.5845	0.0028	0.4564	-0.2153	-0.277	-0.1675	0.4559	-0.0283
ELA	3	745841	5	A-V	2	2495	0.7315	0.0841	0.1053	0.7306	0.0789	0.0012	0.4199	-0.2682	-0.1785	0.4196	-0.2101	-0.01
ELA	3	745842	5	A-V	2	2491	0.6483	0.1005	0.0849	0.1653	0.6465	0.0028	0.5063	-0.2632	-0.3019	-0.2081	0.5065	-0.0301
ELA	3	745843	5	A-V	2	2496	0.7312	0.7306	0.1129	0.1001	0.0556	0.0008	0.3825	0.3827	-0.189	-0.1907	-0.2283	-0.0144
ELA	3	743410	5	D	2	2494	0.6576	0.1353	0.1845	0.6565	0.022	0.0016	0.281	-0.2113	-0.093	0.2828	-0.1634	-0.0493
ELA	3	743476	5	D	1	2495	0.4645	0.1857	0.1878	0.464	0.1613	0.0012	0.301	-0.1569	-0.0778	0.3014	-0.1582	-0.0211
ELA	3	743485	5	D	2	2497	0.6384	0.6381	0.2406	0.058	0.0629	0.0004	0.4971	0.4975	-0.407	-0.1436	-0.1273	-0.0306
ELA	3	747201	6	B-C	2	2482	0.4601	0.192	0.2125	0.1348	0.4596	0.0012	0.3262	-0.1707	-0.0527	-0.2139	0.3268	-0.0296
ELA	3	747202	6	B-C	1	2480	0.5105	0.126	0.5095	0.1111	0.2515	0.002	0.3323	-0.2564	0.3311	-0.0944	-0.1185	0.0144
ELA	3	747203	6	B-C	2	2478	0.3923	0.1903	0.2471	0.1686	0.3911	0.0028	0.4081	-0.24	-0.1022	-0.1605	0.4081	-0.0139

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	3	747205	6	B-K	1	2481	0.424	0.1988	0.2909	0.4233	0.0853	0.0016	0.3682	-0.2345	-0.066	0.3688	-0.2049	-0.0363
ELA	3	747206	6	B-K	1	2484	0.7218	0.7215	0.136	0.0692	0.0728	0.0004	0.3451	0.3449	-0.1381	-0.2449	-0.1736	0.0006
ELA	3	747208	6	B-K	1	2482	0.6273	0.6266	0.1907	0.0978	0.0837	0.0012	0.3454	0.3439	-0.1126	-0.2311	-0.1958	0.022
ELA	3	747211	6	B-V	2	2485	0.3396	0.5779	0.3396	0.0584	0.0241		0.1533	0.0103	0.1533	-0.2258	-0.1613	
ELA	3	747212	6	B-V	2	2481	0.844	0.0471	0.0527	0.8427	0.0559	0.0016	0.4077	-0.1872	-0.2413	0.4073	-0.2347	-0.0193
ELA	3	743411	6	D	2	2481	0.5026	0.5018	0.1742	0.1598	0.1626	0.0016	0.3522	0.3532	-0.1136	-0.1944	-0.1641	-0.0423
ELA	3	743477	6	D	2	2477	0.3956	0.2495	0.1855	0.1674	0.3944	0.0032	0.4023	-0.2226	-0.0885	-0.1722	0.4025	-0.0299
ELA	3	743486	6	D	2	2478	0.4758	0.2515	0.1091	0.1622	0.4744	0.0028	0.3169	-0.1278	-0.2429	-0.0711	0.317	-0.0176
ELA	3	747246	7	B-C	2	2461	0.5494	0.1275	0.1003	0.5491	0.2226	0.0004	0.37	-0.2037	-0.2057	0.3703	-0.1301	-0.0212
ELA	3	747254	7	B-C	2	2460	0.4309	0.1024	0.355	0.1113	0.4305	0.0008	0.3054	-0.2257	-0.0468	-0.1904	0.3059	-0.0282
ELA	3	747255	7	B-C	2	2457	0.4583	0.4574	0.1673	0.0617	0.3115	0.002	0.2777	0.2777	-0.1351	-0.2488	-0.0591	-0.0137
ELA	3	747257	7	B-C	2	2460	0.4463	0.1751	0.446	0.195	0.1832	0.0008	0.2451	-0.1118	0.2457	-0.1367	-0.0637	-0.03
ELA	3	747250	7	B-K	2	2459	0.6198	0.1292	0.619	0.1129	0.1377	0.0012	0.4368	-0.2339	0.4365	-0.227	-0.1769	-0.0213
ELA	3	747253	7	B-K	2	2461	0.5014	0.5012	0.251	0.1523	0.095	0.0004	0.4509	0.4513	-0.2113	-0.2023	-0.2063	-0.0406
ELA	3	747247	7	B-V	2	2459	0.4961	0.1129	0.1251	0.2652	0.4955	0.0012	0.3614	-0.1834	-0.205	-0.122	0.3623	-0.0409
ELA	3	747248	7	B-V	2	2462	0.3631	0.3022	0.234	0.3631	0.1007		0.1199	-0.0134	-0.1378	0.1199	0.0227	
ELA	3	743412	7	D	2	2458	0.4166	0.2027	0.4159	0.1462	0.2335	0.0016	0.2946	-0.2563	0.2954	-0.1732	0.0477	-0.0387
ELA	3	743478	7	D	2	2458	0.8832	0.0463	0.0329	0.8818	0.0374	0.0016	0.3716	-0.2469	-0.2083	0.3704	-0.1585	-0.012
ELA	3	747166	8	B-C	2	2469	0.3597	0.2842	0.3595	0.2409	0.115	0.0004	0.2325	-0.076	0.2326	0.0006	-0.2426	-0.009
ELA	3	747168	8	B-C	1	2464	0.4282	0.2579	0.1534	0.1591	0.4271	0.0024	0.3449	-0.1	-0.1554	-0.1925	0.3445	-0.0052
ELA	3	747169	8	B-C	2	2468	0.6912	0.6907	0.1494	0.1085	0.0506	0.0008	0.3772	0.377	-0.2231	-0.1808	-0.175	-0.0058
ELA	3	747170	8	B-K	1	2467	0.6648	0.096	0.664	0.1518	0.087	0.0012	0.4644	-0.2361	0.4642	-0.205	-0.269	-0.0086
ELA	3	747173	8	B-K	2	2468	0.3278	0.485	0.1291	0.3275	0.0575	0.0008	0.1981	-0.0062	-0.0954	0.1984	-0.2464	-0.0229
ELA	3	747174	8	B-K	2	2466	0.5985	0.1502	0.1008	0.5976	0.1498	0.0016	0.4619	-0.2375	-0.2315	0.4612	-0.2001	-0.0046
ELA	3	747176	8	B-V	1	2469	0.9024	0.0457	0.0247	0.0271	0.902	0.0004	0.3923	-0.253	-0.1846	-0.2148	0.391	0.008
ELA	3	747177	8	B-V	2	2463	0.473	0.4717	0.236	0.1356	0.1538	0.0028	0.2682	0.2682	-0.0184	-0.164	-0.1919	-0.0137
ELA	3	743413	8	D	2	2465	0.5059	0.2547	0.1409	0.0976	0.5049	0.002	0.4212	-0.194	-0.1773	-0.2111	0.4221	-0.0493
ELA	3	743479	8	D	2	2465	0.699	0.0741	0.6976	0.1316	0.0947	0.002	0.3833	-0.1828	0.3824	-0.1915	-0.2149	-0.0017
ELA	3	745223	9	B-C	2	2491	0.4328	0.2047	0.1489	0.4328	0.2136		0.4114	-0.2136	-0.2396	0.4114	-0.079	

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	3	745224	9	B-C	3	2487	0.2388	0.0759	0.2385	0.495	0.1891	0.0016	-0.0739	-0.1904	-0.0725	0.1845	-0.0221	-0.0559
ELA	3	745225	9	B-C	3	2490	0.4526	0.1244	0.2437	0.4524	0.179	0.0004	0.335	-0.1426	-0.0942	0.3351	-0.2064	-0.0069
ELA	3	745228	9	B-C	2	2489	0.5986	0.5982	0.2501	0.0783	0.0727	0.0008	0.2734	0.2734	-0.1159	-0.1652	-0.1515	-0.0045
ELA	3	745234	9	B-C	2	2489	0.6022	0.6018	0.2886	0.063	0.0458	0.0008	0.2701	0.27	-0.0721	-0.2554	-0.1785	-0.0062
ELA	3	745227	9	B-K	2	2485	0.7843	0.0498	0.0602	0.1052	0.7824	0.0024	0.4888	-0.2121	-0.2727	-0.2908	0.4896	-0.0361
ELA	3	745233	9	B-K	1	2489	0.6207	0.0622	0.6202	0.171	0.1457	0.0008	0.4557	-0.2485	0.4549	-0.2403	-0.2002	0.0131
ELA	3	745230	9	B-V	2	2488	0.6363	0.1397	0.0454	0.1782	0.6355	0.0012	0.4935	-0.1446	-0.1289	-0.4174	0.4942	-0.0334
ELA	3	743414	9	D	2	2486	0.4067	0.1891	0.1931	0.21	0.4059	0.002	0.2436	-0.0975	-0.0863	-0.115	0.2435	-0.0109
ELA	3	743480	9	D	2	2482	0.7804	0.7776	0.0638	0.1048	0.0502	0.0036	0.4461	0.4432	-0.254	-0.2112	-0.2613	-0.0082
ELA	4	660255	0	A-C	3	29353	0.4535	0.1103	0.232	0.4527	0.2032	0.0018	0.3062	-0.2598	-0.0754	0.3065	-0.0955	-0.0221
ELA	4	661062	0	A-C	3	29319	0.6295	0.1356	0.6276	0.1539	0.0799	0.003	0.4911	-0.2311	0.4913	-0.2397	-0.2583	-0.0343
ELA	4	660257	0	A-K	3	29370	0.6339	0.1281	0.6332	0.1377	0.0998	0.0012	0.5092	-0.2452	0.5088	-0.2184	-0.2928	-0.0067
ELA	4	660260	0	A-K	3	29352	0.5353	0.1517	0.5343	0.1494	0.1628	0.0018	0.4215	-0.1513	0.4215	-0.2569	-0.1722	-0.0197
ELA	4	660261	0	A-K	2	29362	0.4477	0.447	0.1045	0.3743	0.0727	0.0015	0.3567	0.357	-0.2388	-0.0701	-0.2685	-0.0206
ELA	4	661066	0	A-K	2	29317	0.6007	0.0908	0.169	0.5989	0.1383	0.003	0.5356	-0.2884	-0.227	0.5365	-0.2669	-0.053
ELA	4	661070	0	A-K	2	29323	0.6441	0.0841	0.0671	0.6422	0.2037	0.0028	0.4406	-0.2274	-0.244	0.4417	-0.2115	-0.045
ELA	4	661074	0	A-K	2	29363	0.4002	0.1504	0.265	0.3996	0.1834	0.0015	0.2762	-0.2357	-0.1129	0.2768	-0.0005	-0.0343
ELA	4	661078	0	A-K	3	29333	0.5388	0.0936	0.266	0.5375	0.1004	0.0025	0.4449	-0.3	-0.1378	0.4451	-0.2402	-0.0302
ELA	4	660264	0	A-V	3	29365	0.4963	0.4956	0.3306	0.0958	0.0765	0.0014	0.3506	0.3509	-0.0137	-0.2905	-0.3112	-0.0212
ELA	4	661079	0	A-V	2	29295	0.4747	0.1522	0.1829	0.1883	0.4729	0.0038	0.3718	-0.0546	-0.2382	-0.1847	0.3721	-0.0311
ELA	4	662026	0	A-V	2	29370	0.6694	0.1109	0.6686	0.1667	0.0525	0.0012	0.4215	-0.2047	0.4213	-0.2263	-0.2211	-0.0113
ELA	4	663144	0	B-C	2	29279	0.411	0.1262	0.4092	0.3054	0.1549	0.0043	0.2827	-0.2477	0.2842	0.0215	-0.1765	-0.0539
ELA	4	663146	0	B-C	2	29315	0.6949	0.085	0.0812	0.138	0.6927	0.0031	0.5878	-0.2545	-0.2644	-0.365	0.588	-0.0393
ELA	4	711550	0	B-C	2	29327	0.4858	0.2266	0.1501	0.1362	0.4845	0.0027	0.4439	-0.1163	-0.2013	-0.2897	0.4446	-0.0433
ELA	4	711610	0	B-C	3	29341	0.4094	0.3116	0.1281	0.4085	0.1496	0.0022	0.2892	0.0147	-0.2096	0.2896	-0.2181	-0.0286
ELA	4	663148	0	B-K	3	29328	0.669	0.1023	0.1419	0.0859	0.6672	0.0027	0.5814	-0.2753	-0.2969	-0.3035	0.5815	-0.0378
ELA	4	663149	0	B-K	2	29249	0.4406	0.255	0.177	0.4382	0.1244	0.0053	0.4224	-0.1116	-0.2212	0.4236	-0.2213	-0.0558
ELA	4	711545	0	B-K	2	29333	0.4956	0.1954	0.1233	0.4943	0.1845	0.0025	0.4773	-0.1171	-0.2942	0.4776	-0.2422	-0.0336
ELA	4	711548	0	B-K	3	29327	0.3239	0.323	0.1608	0.3228	0.1907	0.0027	0.2751	0.2757	-0.1645	-0.0484	-0.1117	-0.0381

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	4	664245	0	B-V	2	29330	0.8109	0.0666	0.8088	0.0729	0.0491	0.0026	0.5015	-0.274	0.5025	-0.2948	-0.2333	-0.044
ELA	4	711543	0	B-V	2	29318	0.627	0.0609	0.189	0.122	0.6251	0.003	0.5145	-0.2313	-0.2772	-0.2535	0.5155	-0.0496
ELA	4	711544	0	B-V	2	29310	0.5958	0.1826	0.5939	0.1376	0.0827	0.0033	0.4688	-0.1709	0.4695	-0.2685	-0.2526	-0.0432
ELA	4	581064	0	D	2	29364	0.4764	0.1941	0.4757	0.1916	0.1372	0.0014	0.4017	-0.205	0.4015	-0.1637	-0.1589	-0.0084
ELA	4	662730	0	D	2	29360	0.5332	0.1887	0.1501	0.1272	0.5324	0.0016	0.5048	-0.2596	-0.2208	-0.2115	0.505	-0.0273
ELA	4	662733	0	D	2	29358	0.5417	0.1637	0.1486	0.1453	0.5408	0.0016	0.4264	-0.1745	-0.1984	-0.2175	0.4263	-0.0156
ELA	4	662797	0	D	2	29364	0.3546	0.1215	0.4444	0.3541	0.0786	0.0014	0.4219	-0.0402	-0.2881	0.4218	-0.1668	-0.0146
ELA	4	714303	0	D	2	29393	0.8834	0.883	0.0388	0.0443	0.0335	0.0004	0.4123	0.4124	-0.2235	-0.2336	-0.228	-0.0158
ELA	4	714306	0	D	2	29378	0.2385	0.4656	0.0704	0.2248	0.2383	0.001	0.4163	-0.192	-0.0999	-0.1329	0.4163	-0.0171
ELA	4	714803	0	D	2	29379	0.6871	0.6865	0.0665	0.1709	0.0752	0.0009	0.5265	0.5263	-0.2485	-0.3144	-0.2409	-0.0121
ELA	4	714814	0	D	2	29375	0.5883	0.5877	0.2062	0.1237	0.0813	0.0011	0.3565	0.357	-0.0879	-0.2262	-0.2373	-0.027
ELA	4	714815	0	D	2	29378	0.6534	0.0964	0.6528	0.1022	0.1476	0.001	0.4892	-0.1943	0.4891	-0.2537	-0.2767	-0.0167
ELA	4	743474	1	A-C	2	7451	0.3043	0.3039	0.1829	0.252	0.2601	0.0011	0.2548	0.2546	-0.2026	-0.0965	0.0073	-0.0026
ELA	4	743466	1	A-K	2	7456	0.5098	0.1981	0.5096	0.0753	0.2165	0.0004	0.3552	-0.2469	0.3555	-0.1568	-0.091	-0.0211
ELA	4	743467	1	A-K	2	7445	0.3859	0.2271	0.192	0.3852	0.1939	0.0019	0.3205	-0.0883	-0.1769	0.3211	-0.1222	-0.0295
ELA	4	743469	1	A-K	3	7455	0.3867	0.1544	0.2592	0.1994	0.3865	0.0005	0.3209	-0.1285	-0.036	-0.2346	0.3211	-0.0174
ELA	4	743471	1	A-K	2	7446	0.3593	0.1965	0.2244	0.2187	0.3586	0.0017	0.4336	-0.26	-0.1937	-0.0566	0.4331	-0.0043
ELA	4	743472	1	A-K	1	7437	0.3371	0.1914	0.2356	0.3361	0.2339	0.0029	0.2383	-0.093	-0.0914	0.2383	-0.0865	-0.0104
ELA	4	743463	1	A-V	2	7441	0.496	0.4948	0.1652	0.1381	0.1995	0.0024	0.3931	0.3935	-0.1202	-0.2065	-0.1991	-0.0272
ELA	4	743464	1	A-V	2	7445	0.5608	0.183	0.5597	0.1337	0.1217	0.0019	0.4072	-0.1484	0.407	-0.2245	-0.2075	-0.0101
ELA	4	744143	1	D	2	10199	0.9383	0.015	0.9378	0.0319	0.0147	0.0006	0.2503	-0.1257	0.25	-0.1714	-0.1225	-0.0089
ELA	4	744152	1	D	2	7439	0.5618	0.1075	0.1449	0.5603	0.1846	0.0027	0.3338	-0.2125	-0.2486	0.3345	-0.0292	-0.0253
ELA	4	744227	1	D	1	7457	0.8041	0.1367	0.8039	0.0424	0.0168	0.0003	0.2982	-0.2126	0.2982	-0.154	-0.1112	-0.0048
ELA	4	747379	2	A-C	1	2733	0.2839	0.2836	0.0976	0.4039	0.2138	0.0011	0.2172	0.217	-0.1023	0.2027	-0.4064	-0.0088
ELA	4	747372	2	A-K	2	2733	0.4204	0.1904	0.2175	0.42	0.1711	0.0011	0.1976	-0.1249	-0.1554	0.1982	0.0433	-0.0305
ELA	4	747374	2	A-K	3	2735	0.6629	0.0958	0.2039	0.0373	0.6626	0.0004	0.2488	-0.2368	0.0058	-0.2643	0.2491	-0.0183
ELA	4	747375	2	A-K	3	2735	0.5101	0.1897	0.2036	0.5099	0.0965	0.0004	0.4396	-0.2098	-0.2025	0.439	-0.1899	0.0214
ELA	4	747377	2	A-K	2	2734	0.6211	0.0519	0.6206	0.239	0.0877	0.0007	0.2762	-0.125	0.2769	-0.0813	-0.2515	-0.0303
ELA	4	747368	2	A-V	2	2731	0.2289	0.3498	0.1806	0.2394	0.2284	0.0018	0.0246	0.064	-0.1139	0.0098	0.0254	-0.0372

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	4	747369	2	A-V	1	2733	0.4566	0.4561	0.1444	0.1261	0.2723	0.0011	0.1997	0.2011	-0.0664	-0.1576	-0.0505	-0.0606
ELA	4	747370	2	A-V	1	2735	0.385	0.1137	0.3849	0.1122	0.3889	0.0004	0.1291	-0.1998	0.1291	-0.1632	0.107	-0.0037
ELA	4	744144	2	D	2	5479	0.8828	0.0598	0.0356	0.8822	0.0217	0.0007	0.2804	-0.1731	-0.1646	0.2815	-0.127	-0.0272
ELA	4	744153	2	D	2	2733	0.8807	0.0292	0.0439	0.8798	0.0461	0.0011	0.3846	-0.1827	-0.2464	0.386	-0.2057	-0.0365
ELA	4	744228	2	D	2	2734	0.4876	0.1758	0.0892	0.4872	0.2471	0.0007	0.2401	-0.1183	-0.257	0.2402	-0.0037	-0.0082
ELA	4	744011	3	A-C	2	2726	0.3694	0.4791	0.0825	0.3694	0.069		0.1034	0.1358	-0.235	0.1034	-0.2096	
ELA	4	744014	3	A-K	2	2721	0.5961	0.2509	0.0851	0.595	0.0671	0.0018	0.4828	-0.2671	-0.2665	0.483	-0.1843	-0.0184
ELA	4	744015	3	A-K	2	2722	0.5614	0.5605	0.2282	0.1695	0.0404	0.0015	0.3907	0.3911	-0.2672	-0.1058	-0.21	-0.0253
ELA	4	744016	3	A-K	2	2721	0.6417	0.1669	0.0913	0.0994	0.6405	0.0018	0.5337	-0.2667	-0.2255	-0.3034	0.5326	-0.0093
ELA	4	744012	3	A-V	2	2726	0.9021	0.036	0.9021	0.0499	0.0121		0.4201	-0.2453	0.4201	-0.2864	-0.154	
ELA	4	744020	3	A-V	2	2721	0.3763	0.255	0.3228	0.0448	0.3756	0.0018	0.3459	-0.1544	-0.1156	-0.2229	0.3453	0.0043
ELA	4	744021	3	A-V	2	2724	0.2045	0.1504	0.0932	0.2043	0.5514	0.0007	0.1131	-0.2063	-0.2276	0.1134	0.1911	-0.0308
ELA	4	744022	3	A-V	2	2722	0.705	0.1787	0.704	0.0455	0.0704	0.0015	0.3523	-0.1386	0.3531	-0.223	-0.2363	-0.0304
ELA	4	744145	3	D	2	2726	0.6071	0.6071	0.0374	0.2326	0.1229		0.3221	0.3221	-0.203	-0.1986	-0.1062	
ELA	4	744154	3	D	2	2723	0.7789	0.0917	0.0748	0.0543	0.7781	0.0011	0.4409	-0.2697	-0.2203	-0.2061	0.4417	-0.0313
ELA	4	744229	3	D	1	2726	0.5558	0.1944	0.12	0.1299	0.5558		0.4086	-0.1626	-0.2257	-0.1944	0.4086	
ELA	4	744208	4	A-C	2	2771	0.4865	0.4861	0.181	0.0902	0.242	0.0007	0.1148	0.1156	-0.1316	-0.2255	0.1364	-0.0347
ELA	4	744200	4	A-K	2	2770	0.6256	0.0559	0.1482	0.625	0.1699	0.0011	0.4341	-0.2171	-0.1632	0.4344	-0.2711	-0.019
ELA	4	744203	4	A-K	3	2769	0.5955	0.1699	0.5947	0.1735	0.0606	0.0014	0.3384	-0.1552	0.339	-0.1353	-0.2337	-0.0307
ELA	4	744204	4	A-K	3	2772	0.2846	0.2845	0.1648	0.0664	0.484	0.0004	-0.0598	-0.06	-0.1718	-0.2835	0.3225	0.0101
ELA	4	744206	4	A-K	1	2770	0.6733	0.0772	0.1825	0.6726	0.0667	0.0011	0.3192	-0.1886	-0.2205	0.3199	-0.0551	-0.026
ELA	4	744197	4	A-V	1	2771	0.4017	0.2467	0.1273	0.2239	0.4014	0.0007	0.3105	-0.1153	-0.1146	-0.1542	0.3105	-0.0001
ELA	4	744198	4	A-V	2	2766	0.8496	0.0566	0.8475	0.0465	0.0469	0.0025	0.4701	-0.2229	0.4649	-0.2937	-0.2572	0.012
ELA	4	744205	4	A-V	2	2773	0.8294	0.0469	0.0397	0.084	0.8294		0.4068	-0.2561	-0.2422	-0.186	0.4068	
ELA	4	744146	4	D	2	2773	0.9127	0.0133	0.0159	0.0581	0.9127		0.3613	-0.1517	-0.1872	-0.2616	0.3613	
ELA	4	744221	4	D	2	2768	0.6792	0.0999	0.678	0.1219	0.0984	0.0018	0.4338	-0.2074	0.4346	-0.2143	-0.2328	-0.0339
ELA	4	744230	4	D	1	2769	0.6114	0.0487	0.1161	0.6105	0.2232	0.0014	0.3118	-0.2356	-0.2888	0.3118	-0.02	-0.0124
ELA	4	745880	5	B-C	2	2741	0.5016	0.1556	0.5011	0.2362	0.106	0.0011	0.4265	-0.2461	0.4273	-0.1306	-0.2186	-0.05
ELA	4	745881	5	B-C	2	2744	0.6669	0.1972	0.063	0.6669	0.0729		0.3456	-0.155	-0.2745	0.3456	-0.1328	

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	4	745883	5	B-C	2	2736	0.6323	0.6305	0.1589	0.0867	0.121	0.0029	0.3807	0.3816	-0.2117	-0.2175	-0.1346	-0.0312
ELA	4	745884	5	B-K	2	2737	0.4461	0.1633	0.2741	0.1152	0.445	0.0026	0.3289	-0.2201	-0.0677	-0.1577	0.3296	-0.0382
ELA	4	745886	5	B-K	2	2742	0.3727	0.1163	0.2004	0.3101	0.3724	0.0007	0.1765	-0.2019	-0.0822	0.0278	0.177	-0.0311
ELA	4	745888	5	B-K	2	2740	0.6179	0.617	0.2223	0.1217	0.0375	0.0015	0.4342	0.4359	-0.2718	-0.1692	-0.216	-0.0656
ELA	4	745890	5	B-V	2	2743	0.5749	0.1709	0.0933	0.5747	0.1607	0.0004	0.2389	-0.0968	-0.1334	0.239	-0.1165	-0.0077
ELA	4	745891	5	B-V	2	2741	0.7355	0.0474	0.7347	0.0849	0.1319	0.0011	0.3824	-0.2397	0.384	-0.1857	-0.193	-0.0452
ELA	4	744147	5	D	2	2742	0.4106	0.2646	0.4103	0.1556	0.1687	0.0007	0.3944	-0.2134	0.3948	-0.0762	-0.1911	-0.0326
ELA	4	744222	5	D	2	2738	0.5836	0.5824	0.2813	0.0835	0.0507	0.0022	0.3026	0.3034	-0.149	-0.1889	-0.1319	-0.0322
ELA	4	744231	5	D	1	2743	0.6074	0.6071	0.0674	0.0856	0.2394	0.0004	0.2412	0.2415	-0.191	-0.2341	-0.0098	-0.0179
ELA	4	747178	6	B-C	2	2718	0.3584	0.1718	0.2413	0.2284	0.3582	0.0004	0.1204	-0.0919	-0.0017	-0.0533	0.1204	0.0023
ELA	4	747179	6	B-C	2	2717	0.5002	0.2552	0.4998	0.0872	0.157	0.0007	0.3705	-0.0532	0.3705	-0.2075	-0.2832	-0.0189
ELA	4	747180	6	B-C	2	2717	0.8502	0.0401	0.8496	0.0441	0.0655	0.0007	0.4307	-0.2053	0.4308	-0.2665	-0.2366	-0.0174
ELA	4	747181	6	B-C	2	2715	0.3422	0.1813	0.0816	0.3417	0.3939	0.0015	0.1568	-0.2163	-0.2241	0.1576	0.1464	-0.0412
ELA	4	747183	6	B-K	2	2715	0.4851	0.288	0.1287	0.4844	0.0975	0.0015	0.3669	-0.0842	-0.2169	0.3668	-0.2436	-0.008
ELA	4	747185	6	B-K	2	2717	0.332	0.3317	0.1681	0.3538	0.1456	0.0007	0.1262	0.1269	-0.0761	0.0399	-0.1396	-0.0409
ELA	4	747187	6	B-V	2	2718	0.8948	0.8944	0.05	0.0368	0.0184	0.0004	0.3616	0.3617	-0.2095	-0.2175	-0.1808	-0.0123
ELA	4	747188	6	B-V	2	2717	0.1031	0.6771	0.1442	0.103	0.075	0.0007	-0.0147	0.2902	-0.2533	-0.0144	-0.1572	-0.0336
ELA	4	744148	6	D	2	2717	0.7814	0.7808	0.0875	0.1225	0.0085	0.0007	0.383	0.3845	-0.2956	-0.1932	-0.1192	-0.0468
ELA	4	744223	6	D	2	2717	0.4446	0.2766	0.0769	0.2015	0.4443	0.0007	0.2762	-0.0689	-0.2598	-0.0932	0.2757	0.0164
ELA	4	744232	6	D	2	2715	0.7569	0.1387	0.0456	0.7558	0.0585	0.0015	0.4894	-0.32	-0.2231	0.4894	-0.2222	-0.0256
ELA	4	745349	7	B-C	2	2751	0.4831	0.2558	0.1136	0.4822	0.1466	0.0018	0.2723	-0.086	-0.2273	0.2728	-0.0722	-0.0271
ELA	4	745350	7	B-C	2	2753	0.5332	0.2039	0.5327	0.0657	0.1967	0.0011	0.3004	-0.1241	0.3007	-0.1682	-0.1455	-0.0152
ELA	4	745351	7	B-C	2	2752	0.7406	0.7395	0.0718	0.0849	0.1023	0.0015	0.393	0.3927	-0.22	-0.1192	-0.2701	-0.0132
ELA	4	745352	7	B-C	2	2754	0.7418	0.0885	0.0972	0.7413	0.0722	0.0007	0.4717	-0.2477	-0.2223	0.4727	-0.2692	-0.0413
ELA	4	745354	7	B-K	2	2753	0.4853	0.1934	0.0682	0.2525	0.4848	0.0011	0.2992	-0.1591	-0.2159	-0.0737	0.2992	-0.0082
ELA	4	745357	7	B-K	2	2754	0.3359	0.3378	0.2068	0.119	0.3356	0.0007	0.2378	-0.0161	-0.0642	-0.2404	0.2383	-0.0399
ELA	4	745359	7	B-V	2	2754	0.8762	0.0316	0.0392	0.053	0.8755	0.0007	0.4439	-0.2487	-0.2364	-0.253	0.4443	-0.0242
ELA	4	745360	7	B-V	2	2755	0.7742	0.0468	0.7739	0.1466	0.0323	0.0004	0.3833	-0.2912	0.384	-0.1761	-0.2045	-0.0342
ELA	4	716624	7	D	2	2755	0.8113	0.0374	0.0845	0.0668	0.811	0.0004	0.4995	-0.2495	-0.3076	-0.2506	0.4979	0.0261

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	4	744149	7	D	2	2754	0.6111	0.2384	0.0889	0.6107	0.0613	0.0007	0.2476	-0.1368	-0.059	0.2477	-0.1896	-0.0086
ELA	4	744224	7	D	2	2755	0.8457	0.1172	0.8454	0.0312	0.0058	0.0004	0.356	-0.2891	0.3566	-0.1467	-0.1313	-0.0242
ELA	4	743376	8	B-C	2	2743	0.6402	0.1438	0.0375	0.1781	0.6395	0.0011	0.4924	-0.2971	-0.2322	-0.2292	0.4918	-0.0028
ELA	4	743377	8	B-C	2	2745	0.6426	0.0819	0.1289	0.6424	0.1464	0.0004	0.5025	-0.2473	-0.2906	0.5028	-0.213	-0.0251
ELA	4	743382	8	B-C	2	2744	0.7879	0.0353	0.1202	0.7873	0.0564	0.0007	0.3945	-0.2365	-0.2146	0.396	-0.205	-0.047
ELA	4	743378	8	B-K	2	2743	0.6453	0.1497	0.1224	0.0823	0.6446	0.0011	0.4442	-0.2103	-0.1646	-0.3029	0.444	-0.0098
ELA	4	743380	8	B-K	2	2746	0.5208	0.5208	0.0728	0.3427	0.0637		0.408	0.408	-0.3065	-0.2028	-0.1144	
ELA	4	743381	8	B-K	2	2745	0.3137	0.461	0.3135	0.0572	0.1679	0.0004	0.039	0.2397	0.0391	-0.1933	-0.2478	-0.007
ELA	4	743383	8	B-V	2	2744	0.812	0.0291	0.8114	0.1213	0.0375	0.0007	0.3586	-0.1938	0.3572	-0.2157	-0.1953	0.0144
ELA	4	743385	8	B-V	2	2745	0.8503	0.85	0.0481	0.0448	0.0568	0.0004	0.388	0.3891	-0.2416	-0.2362	-0.1629	-0.0372
ELA	4	744150	8	D	2	2743	0.7083	0.0954	0.7076	0.1741	0.0218	0.0011	0.3348	-0.2778	0.3353	-0.1302	-0.1426	-0.0202
ELA	4	744225	8	D	2	2743	0.8042	0.8034	0.0863	0.0608	0.0484	0.0011	0.4614	0.4617	-0.2569	-0.27	-0.2146	-0.0226
ELA	4	744858	9	B-C	3	2747	0.4336	0.4336	0.19	0.1493	0.2272		0.1339	0.1339	-0.1357	-0.1684	0.1119	
ELA	4	744860	9	B-C	3	2745	0.2546	0.3036	0.2705	0.2545	0.1707	0.0007	0.1767	-0.0443	-0.0874	0.1763	-0.0481	0.0206
ELA	4	744862	9	B-C	2	2741	0.4907	0.206	0.2009	0.1012	0.4896	0.0022	0.3964	-0.167	-0.1527	-0.225	0.3969	-0.0386
ELA	4	744863	9	B-C	3	2741	0.4856	0.4845	0.1678	0.2304	0.115	0.0022	0.217	0.2174	-0.1852	0.0295	-0.1601	-0.0161
ELA	4	744868	9	B-C	2	2744	0.3251	0.2519	0.2781	0.3247	0.1442	0.0011	0.2009	-0.0945	-0.0132	0.201	-0.1331	-0.0137
ELA	4	744867	9	B-K	2	2740	0.5438	0.1795	0.1722	0.1034	0.5424	0.0025	0.3191	-0.2265	-0.0353	-0.188	0.3204	-0.0426
ELA	4	744864	9	B-V	2	2747	0.6676	0.2523	0.6676	0.0353	0.0448		0.3579	-0.1885	0.3579	-0.2392	-0.2061	
ELA	4	747062	9	B-V	2	2743	0.6161	0.1944	0.6152	0.0819	0.107	0.0015	0.4417	-0.2078	0.4427	-0.2707	-0.1849	-0.0465
ELA	4	744151	9	D	2	2745	0.5166	0.5162	0.0954	0.2657	0.122	0.0007	0.3801	0.3802	-0.1815	-0.1575	-0.2039	-0.0155
ELA	4	744226	9	D	2	2746	0.2491	0.356	0.1893	0.2053	0.249	0.0004	0.1942	0.0417	-0.1163	-0.1445	0.1942	-0.0018
ELA	5	711327	0	A-C	3	31924	0.6136	0.1654	0.1239	0.612	0.0961	0.0026	0.4548	-0.2048	-0.2062	0.4558	-0.2576	-0.0418
ELA	5	711328	0	A-C	2	31910	0.4661	0.199	0.169	0.1643	0.4647	0.0031	0.4279	-0.1185	-0.213	-0.2276	0.4286	-0.0419
ELA	5	711553	0	A-K	2	31905	0.4922	0.1989	0.4906	0.1486	0.1587	0.0032	0.4429	-0.1598	0.4425	-0.2531	-0.1816	-0.0192
ELA	5	711738	0	A-K	3	31964	0.5045	0.1975	0.1307	0.1666	0.5038	0.0014	0.5941	-0.2418	-0.3076	-0.2581	0.5939	-0.0221
ELA	5	712262	0	A-K	2	31959	0.695	0.138	0.068	0.0985	0.694	0.0015	0.5422	-0.2967	-0.2578	-0.2746	0.542	-0.0182
ELA	5	712264	0	A-K	3	31975	0.6805	0.0891	0.6798	0.1401	0.0899	0.001	0.4995	-0.2615	0.4995	-0.235	-0.2669	-0.0181
ELA	5	712265	0	A-K	3	31972	0.5456	0.1954	0.1942	0.545	0.0644	0.0011	0.5188	-0.2977	-0.2269	0.5189	-0.2029	-0.0238

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	5	712267	0	A-K	2	31955	0.4693	0.4685	0.2539	0.147	0.1289	0.0017	0.3254	0.3257	-0.0808	-0.1987	-0.1674	-0.022
ELA	5	711318	0	A-V	1	31933	0.5867	0.5853	0.1355	0.2179	0.059	0.0023	0.4774	0.4782	-0.3197	-0.19	-0.1938	-0.0427
ELA	5	711320	0	A-V	2	31916	0.66	0.1424	0.1088	0.6581	0.0878	0.0029	0.3982	-0.1138	-0.2442	0.3991	-0.2524	-0.0385
ELA	5	711741	0	A-V	2	31965	0.3467	0.3574	0.3462	0.2294	0.0656	0.0013	0.2994	-0.0444	0.2995	-0.204	-0.1405	-0.0188
ELA	5	712260	0	A-V	2	31958	0.7125	0.1371	0.0481	0.7114	0.1018	0.0016	0.5045	-0.2619	-0.2454	0.5048	-0.281	-0.0293
ELA	5	659197	0	B-C	2	31957	0.5278	0.2177	0.527	0.1636	0.0901	0.0016	0.4305	-0.1887	0.431	-0.168	-0.2581	-0.0326
ELA	5	659202	0	B-C	2	31909	0.5238	0.5222	0.1837	0.1203	0.1708	0.0031	0.4077	0.409	-0.3101	-0.157	-0.0806	-0.051
ELA	5	659285	0	B-C	2	31936	0.6191	0.6177	0.0678	0.2398	0.0725	0.0022	0.4413	0.4421	-0.232	-0.2082	-0.2538	-0.0382
ELA	5	712118	0	B-C	2	31957	0.4088	0.169	0.1148	0.4082	0.3064	0.0016	0.3119	-0.1926	-0.2557	0.3125	0.0031	-0.0334
ELA	5	712120	0	B-C	2	31962	0.4065	0.2419	0.406	0.2034	0.1473	0.0014	0.4296	-0.1103	0.4296	-0.2162	-0.2146	-0.0174
ELA	5	659203	0	B-K	3	31936	0.6604	0.042	0.0842	0.2126	0.6589	0.0022	0.3619	-0.2493	-0.333	-0.0685	0.3624	-0.0276
ELA	5	659287	0	B-K	3	31953	0.7375	0.7362	0.1161	0.0637	0.0822	0.0017	0.5505	0.5504	-0.323	-0.276	-0.2569	-0.0266
ELA	5	712113	0	B-K	2	31956	0.4036	0.1957	0.1096	0.2901	0.403	0.0016	0.3271	-0.2535	-0.2564	0.0465	0.3275	-0.0262
ELA	5	712114	0	B-K	2	31927	0.5965	0.595	0.1726	0.1093	0.1205	0.0025	0.5223	0.523	-0.2333	-0.3028	-0.2206	-0.0454
ELA	5	659209	0	B-V	2	31956	0.6389	0.0733	0.6379	0.0552	0.2321	0.0016	0.2866	-0.1731	0.2873	-0.2308	-0.0929	-0.0267
ELA	5	661010	0	B-V	2	31949	0.6939	0.1285	0.1185	0.6926	0.0585	0.0018	0.4126	-0.1657	-0.2095	0.4128	-0.2824	-0.024
ELA	5	505539	0	D	2	31962	0.374	0.2617	0.3735	0.1876	0.1758	0.0014	0.1689	0.0154	0.1692	-0.1657	-0.0612	-0.0168
ELA	5	505543	0	D	2	31925	0.2809	0.2802	0.3288	0.1699	0.2185	0.0026	0.3008	0.3009	-0.0869	-0.1057	-0.1295	-0.0214
ELA	5	581211	0	D	2	31975	0.3605	0.3858	0.1228	0.1302	0.3601	0.001	0.4033	-0.0832	-0.1853	-0.2725	0.4033	-0.0176
ELA	5	581220	0	D	2	31982	0.4579	0.143	0.2837	0.115	0.4575	0.0008	0.4942	-0.2811	-0.1873	-0.1975	0.494	-0.0089
ELA	5	660716	0	D	2	31952	0.4038	0.0741	0.1123	0.4088	0.4031	0.0017	0.3882	-0.2109	-0.1762	-0.16	0.3883	-0.0223
ELA	5	661444	0	D	1	31958	0.3384	0.3068	0.1849	0.1689	0.3379	0.0016	0.2694	-0.0865	-0.0887	-0.1398	0.2697	-0.0204
ELA	5	714318	0	D	2	31970	0.4142	0.1836	0.2871	0.4137	0.1143	0.0012	0.4542	-0.2604	-0.1501	0.4543	-0.1702	-0.0256
ELA	5	714319	0	D	2	31997	0.5616	0.3581	0.5614	0.0552	0.0249	0.0003	0.4548	-0.3292	0.4548	-0.173	-0.1809	-0.0063
ELA	5	716169	0	D	2	31984	0.5335	0.5331	0.1936	0.0992	0.1733	0.0007	0.4228	0.423	-0.1209	-0.2405	-0.2401	-0.0169
ELA	5	744023	1	A-C	2	7775	0.2659	0.4351	0.1698	0.2657	0.1288	0.0005	0.1085	0.1986	-0.2032	0.1085	-0.2089	-0.0051
ELA	5	744025	1	A-K	2	7764	0.4295	0.4287	0.2814	0.1499	0.1381	0.0019	0.3481	0.3488	-0.0571	-0.2939	-0.1175	-0.0339
ELA	5	744028	1	A-K	2	7765	0.4835	0.4826	0.1309	0.2098	0.175	0.0018	0.2944	0.2953	-0.0661	-0.2198	-0.0904	-0.0334
ELA	5	744029	1	A-K	2	7768	0.4419	0.107	0.3223	0.128	0.4413	0.0014	0.2949	-0.2076	-0.0145	-0.2241	0.2952	-0.0196

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	5	744030	1	A-K	2	7770	0.4277	0.1635	0.4272	0.295	0.1131	0.0012	0.3368	-0.1003	0.3371	-0.1028	-0.2594	-0.0167
ELA	5	744031	1	A-K	2	7774	0.5732	0.209	0.1329	0.0846	0.5728	0.0006	0.3801	-0.1088	-0.2473	-0.2139	0.3805	-0.0204
ELA	5	744032	1	A-V	2	7775	0.6725	0.1432	0.1288	0.6722	0.0553	0.0005	0.3418	-0.1291	-0.2612	0.3422	-0.12	-0.0197
ELA	5	744033	1	A-V	3	7758	0.5266	0.1721	0.5251	0.1291	0.171	0.0027	0.3577	-0.1394	0.3581	-0.2577	-0.1026	-0.0229
ELA	5	744675	1	D	2	10783	0.5319	0.1424	0.5314	0.2441	0.0811	0.001	0.2788	-0.1308	0.2786	-0.0985	-0.1869	-0.001
ELA	5	744684	1	D	2	7770	0.4686	0.0878	0.2602	0.4681	0.1828	0.0012	0.276	-0.0915	-0.078	0.2762	-0.1996	-0.0174
ELA	5	744910	1	D	2	7772	0.5708	0.1048	0.2661	0.058	0.5703	0.0009	0.402	-0.2543	-0.1781	-0.1796	0.4023	-0.0212
ELA	5	743507	2	A-C	2	3037	0.5581	0.0602	0.5572	0.2531	0.1279	0.0016	0.3193	-0.1791	0.3178	-0.072	-0.2538	0.019
ELA	5	743508	2	A-C	2	3040	0.5582	0.1917	0.145	0.5579	0.1049	0.0007	0.3898	-0.1408	-0.2076	0.3892	-0.2125	0.0136
ELA	5	743501	2	A-K	1	3036	0.2875	0.287	0.4109	0.1335	0.1667	0.002	0.1241	0.1236	0.2252	-0.2268	-0.2419	0.0134
ELA	5	743502	2	A-K	2	3042	0.1778	0.0611	0.6887	0.1778	0.0723		0.1707	-0.2579	0.0745	0.1707	-0.1466	
ELA	5	743504	2	A-K	2	3039	0.6367	0.6361	0.0542	0.1059	0.2028	0.001	0.4018	0.4029	-0.2725	-0.2772	-0.1129	-0.0469
ELA	5	743497	2	A-V	2	3039	0.4699	0.1565	0.0473	0.3258	0.4694	0.001	0.2327	-0.1958	-0.2245	0.0065	0.233	-0.0168
ELA	5	743499	2	A-V	2	3042	0.7623	0.1581	0.027	0.0526	0.7623		0.4923	-0.3304	-0.237	-0.2269	0.4923	
ELA	5	743505	2	A-V	2	3040	0.9408	0.0187	0.9402	0.025	0.0155	0.0007	0.354	-0.2084	0.3535	-0.2273	-0.1599	-0.015
ELA	5	744676	2	D	2	6078	0.8644	0.0197	0.0337	0.0821	0.864	0.0005	0.4563	-0.1852	-0.2488	-0.3112	0.4565	-0.0173
ELA	5	744685	2	D	2	3035	0.5325	0.5312	0.3826	0.0526	0.0312	0.0023	0.0936	0.0952	0.0539	-0.1948	-0.1631	-0.038
ELA	5	744911	2	D	2	3040	0.6888	0.0503	0.6884	0.0756	0.1851	0.0007	0.4322	-0.1648	0.4323	-0.229	-0.2662	-0.0109
ELA	5	744183	3	A-C	3	3035	0.0755	0.0593	0.417	0.448	0.0754	0.0003	-0.1502	-0.2044	0.1305	0.0475	-0.1502	-0.002
ELA	5	744176	3	A-K	2	3031	0.6783	0.6772	0.1957	0.0356	0.0899	0.0016	0.2607	0.2632	-0.0659	-0.2336	-0.1792	-0.058
ELA	5	744177	3	A-K	2	3030	0.7304	0.1262	0.0435	0.7289	0.0995	0.002	0.3594	-0.1373	-0.202	0.3607	-0.2398	-0.0394
ELA	5	744179	3	A-K	2	3033	0.6172	0.6166	0.1199	0.2404	0.0221	0.001	0.3129	0.3129	-0.2185	-0.1259	-0.1834	-0.0137
ELA	5	744181	3	A-K	2	3033	0.3155	0.5721	0.0501	0.0616	0.3152	0.001	0.0682	0.1705	-0.2976	-0.2094	0.0689	-0.0363
ELA	5	744173	3	A-V	1	3032	0.6181	0.0455	0.6173	0.0563	0.2796	0.0013	0.2516	-0.2007	0.2528	-0.2501	-0.049	-0.0393
ELA	5	744174	3	A-V	2	3032	0.7728	0.0738	0.108	0.7717	0.0451	0.0013	0.2965	-0.2097	-0.1482	0.2979	-0.1106	-0.0344
ELA	5	744175	3	A-V	2	3033	0.5621	0.2533	0.5616	0.0791	0.1051	0.001	0.3056	-0.105	0.3053	-0.1877	-0.1804	0.0044
ELA	5	744677	3	D	2	3033	0.8368	0.0148	0.0428	0.836	0.1054	0.001	0.3592	-0.1672	-0.2022	0.3603	-0.2321	-0.0329
ELA	5	744686	3	D	2	3033	0.3234	0.0557	0.2042	0.416	0.3231	0.001	0.072	-0.1143	0.064	-0.0669	0.0723	-0.0148
ELA	5	744912	3	D	1	3032	0.5561	0.1443	0.1084	0.5553	0.1907	0.0013	0.3221	-0.1585	-0.1867	0.323	-0.1153	-0.0413

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	5	744663	4	A-C	2	3018	0.7816	0.1137	0.7816	0.0464	0.0583		0.4675	-0.2108	0.4675	-0.281	-0.2864	
ELA	5	744665	4	A-K	2	3014	0.6108	0.2068	0.1461	0.61	0.0358	0.0013	0.4073	-0.1454	-0.3071	0.4084	-0.1625	-0.0449
ELA	5	744667	4	A-K	2	3015	0.5645	0.0517	0.5639	0.2091	0.1743	0.001	0.2364	-0.2111	0.2373	-0.1222	-0.0531	-0.0363
ELA	5	744669	4	A-K	2	3013	0.6084	0.1561	0.1769	0.6074	0.058	0.0017	0.1864	0.0422	-0.1655	0.1877	-0.1818	-0.0331
ELA	5	744670	4	A-K	2	3018	0.7041	0.7041	0.0855	0.1425	0.0679		0.4148	0.4148	-0.2104	-0.194	-0.2491	
ELA	5	744672	4	A-V	2	3015	0.7071	0.7064	0.1799	0.0623	0.0504	0.001	0.4362	0.4369	-0.3011	-0.2323	-0.1195	-0.033
ELA	5	744673	4	A-V	2	3017	0.703	0.056	0.0467	0.1942	0.7028	0.0003	0.3837	-0.1739	-0.1853	-0.2425	0.3843	-0.0325
ELA	5	744674	4	A-V	2	3016	0.2328	0.0302	0.6272	0.1093	0.2326	0.0007	0.1975	-0.1827	-0.1132	0.0083	0.1975	-0.0038
ELA	5	744678	4	D	2	3013	0.55	0.0981	0.1998	0.549	0.1514	0.0017	0.4742	-0.1509	-0.3219	0.4746	-0.1714	-0.028
ELA	5	744903	4	D	1	3015	0.7705	0.1054	0.7697	0.0696	0.0543	0.001	0.363	-0.2059	0.3634	-0.194	-0.1751	-0.023
ELA	5	744913	4	D	2	3016	0.5816	0.05	0.2919	0.0762	0.5812	0.0007	0.4762	-0.2276	-0.2454	-0.2781	0.4753	0.018
ELA	5	744098	5	A-C	2	3026	0.6788	0.1133	0.1248	0.6783	0.0829	0.0007	0.4802	-0.2199	-0.2581	0.4806	-0.2489	-0.0341
ELA	5	744099	5	A-C	2	3025	0.7293	0.0476	0.1377	0.7285	0.0852	0.001	0.4999	-0.2461	-0.2964	0.4989	-0.2403	-0.008
ELA	5	744035	5	A-K	2	3024	0.6974	0.0631	0.0869	0.1522	0.6965	0.0013	0.5163	-0.2498	-0.3041	-0.2499	0.517	-0.0425
ELA	5	744037	5	A-K	2	3025	0.4764	0.0799	0.4759	0.3048	0.1384	0.001	0.2997	-0.2473	0.3002	-0.0645	-0.151	-0.0312
ELA	5	744100	5	A-K	2	3023	0.7698	0.1806	0.7685	0.0228	0.0264	0.0017	0.286	-0.1523	0.2859	-0.1955	-0.2016	-0.0124
ELA	5	744040	5	A-V	2	3028	0.9485	0.9485	0.0185	0.0129	0.0201		0.2966	0.2966	-0.1834	-0.1512	-0.1693	
ELA	5	744041	5	A-V	2	3026	0.8093	0.0555	0.0855	0.0495	0.8088	0.0007	0.4442	-0.2721	-0.2171	-0.2367	0.444	-0.0084
ELA	5	744102	5	A-V	2	3027	0.7952	0.7949	0.0231	0.0426	0.139	0.0003	0.2331	0.2336	-0.2071	-0.2693	-0.0245	-0.0174
ELA	5	744679	5	D	2	3026	0.5185	0.1321	0.177	0.5182	0.1721	0.0007	0.3	-0.1172	-0.1347	0.3009	-0.1532	-0.0557
ELA	5	744904	5	D	2	3025	0.6417	0.641	0.2199	0.0905	0.0476	0.001	0.3326	0.3328	-0.1598	-0.1886	-0.1819	-0.0202
ELA	5	744914	5	D	1	3027	0.8051	0.0915	0.0664	0.8048	0.037	0.0003	0.3822	-0.3199	-0.131	0.3831	-0.1396	-0.0365
ELA	5	744185	6	B-C	1	3027	0.4139	0.1824	0.4134	0.1963	0.2065	0.0013	0.3303	-0.0533	0.3307	-0.1517	-0.2006	-0.0222
ELA	5	744195	6	B-C	2	3026	0.4418	0.4411	0.1438	0.1254	0.288	0.0016	0.278	0.2779	-0.2038	-0.0829	-0.0851	-0.0116
ELA	5	744196	6	B-C	2	3029	0.3876	0.1297	0.286	0.3873	0.1963	0.0007	0.2876	-0.1298	-0.1245	0.2876	-0.1002	-0.017
ELA	5	744189	6	B-K	2	3027	0.8163	0.0887	0.8152	0.0386	0.0561	0.0013	0.5043	-0.3166	0.505	-0.1962	-0.2908	-0.0346
ELA	5	744192	6	B-K	2	3027	0.5705	0.5698	0.0868	0.2059	0.1363	0.0013	0.3176	0.3161	-0.3014	-0.0667	-0.1326	0.0218
ELA	5	744193	6	B-K	2	3027	0.5742	0.1791	0.1135	0.1326	0.5734	0.0013	0.473	-0.2073	-0.2056	-0.2593	0.474	-0.0489
ELA	5	744186	6	B-V	2	3026	0.7631	0.0455	0.0422	0.7618	0.1488	0.0016	0.3052	-0.1638	-0.2068	0.3063	-0.1498	-0.0355

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	5	744187	6	B-V	2	3031	0.8703	0.0386	0.0795	0.0115	0.8703		0.3728	-0.2405	-0.231	-0.1535	0.3728	
ELA	5	716625	6	D	2	3031	0.3514	0.1518	0.3514	0.2494	0.2474		0.1454	-0.0971	0.1454	-0.104	0.0242	
ELA	5	744680	6	D	2	3026	0.5648	0.1541	0.5638	0.1425	0.1379	0.0016	0.3272	-0.1752	0.3263	-0.1429	-0.1407	-0.0022
ELA	5	744905	6	D	2	3027	0.5362	0.0703	0.295	0.098	0.5355	0.0013	0.3714	-0.1815	-0.1245	-0.2755	0.3708	0.0036
ELA	5	743487	7	B-C	2	3016	0.4241	0.4666	0.0699	0.4235	0.0387	0.0013	0.2761	-0.1512	-0.0751	0.2756	-0.217	0.0072
ELA	5	743495	7	B-C	1	3018	0.5414	0.5411	0.1228	0.2026	0.1328	0.0007	0.2267	0.2263	-0.1568	-0.1086	-0.0524	0.0057
ELA	5	743490	7	B-K	2	3018	0.7001	0.0609	0.1325	0.1063	0.6997	0.0007	0.3614	-0.1986	-0.16	-0.2057	0.3623	-0.0355
ELA	5	743491	7	B-K	2	3014	0.3384	0.1358	0.103	0.4215	0.3377	0.002	0.3303	-0.2431	-0.2132	-0.0138	0.3309	-0.0354
ELA	5	743492	7	B-K	2	3018	0.2614	0.35	0.2887	0.2613	0.0993	0.0007	-0.0424	-0.1322	0.3322	-0.0425	-0.2307	0.0071
ELA	5	743493	7	B-K	1	3017	0.76	0.7593	0.1404	0.0599	0.0394	0.001	0.4763	0.4755	-0.3103	-0.2218	-0.2205	0.001
ELA	5	743488	7	B-V	2	3018	0.8635	0.0272	0.8629	0.0311	0.0781	0.0007	0.4164	-0.1902	0.4167	-0.1976	-0.2889	-0.0209
ELA	5	743489	7	B-V	2	3016	0.7888	0.0725	0.7877	0.0659	0.0725	0.0013	0.4917	-0.3099	0.4918	-0.2779	-0.1967	-0.022
ELA	5	716626	7	D	1	3019	0.8062	0.0119	0.1692	0.806	0.0126	0.0003	0.3593	-0.1614	-0.2906	0.3603	-0.1368	-0.0421
ELA	5	744681	7	D	2	3017	0.7087	0.0616	0.7079	0.0831	0.1464	0.001	0.412	-0.1497	0.4128	-0.1831	-0.283	-0.0359
ELA	5	744907	7	D	2	3013	0.4723	0.4712	0.151	0.2381	0.1374	0.0023	0.2559	0.2564	-0.2164	-0.0006	-0.1425	-0.0245
ELA	5	743460	8	B-C	3	3009	0.4201	0.2438	0.1453	0.1897	0.4192	0.002	0.3764	-0.183	-0.1455	-0.1412	0.3759	-0.0055
ELA	5	743462	8	B-C	2	3006	0.5269	0.5254	0.1154	0.1755	0.1808	0.003	0.4085	0.4086	-0.2551	-0.1317	-0.1857	-0.0175
ELA	5	743455	8	B-K	2	3010	0.5319	0.2123	0.0846	0.531	0.1705	0.0017	0.3802	-0.1977	-0.2961	0.3805	-0.0683	-0.0229
ELA	5	743457	8	B-K	2	3015	0.6388	0.6388	0.1131	0.1701	0.0779		0.4055	0.4055	-0.1739	-0.1968	-0.2452	
ELA	5	743458	8	B-K	2	3010	0.3159	0.1877	0.1738	0.3154	0.3214	0.0017	0.0712	-0.0602	-0.1133	0.0726	0.0749	-0.0554
ELA	5	743459	8	B-K	2	3012	0.2517	0.1718	0.1794	0.3964	0.2514	0.001	0.0294	-0.0441	-0.1502	0.1256	0.0293	0.0039
ELA	5	743453	8	B-V	1	3013	0.5977	0.0272	0.5973	0.1751	0.1997	0.0007	0.2934	-0.2195	0.2936	-0.1561	-0.1218	-0.0099
ELA	5	743509	8	B-V	2	3015	0.8415	0.0368	0.8415	0.0587	0.063		0.4368	-0.2186	0.4368	-0.2543	-0.2412	
ELA	5	744682	8	D	2	3011	0.4826	0.3101	0.1201	0.4819	0.0866	0.0013	0.3004	-0.1798	-0.0924	0.3006	-0.1297	-0.015
ELA	5	744908	8	D	2	3012	0.7022	0.1526	0.0849	0.06	0.7015	0.001	0.5018	-0.2328	-0.2803	-0.2841	0.5011	0.0005
ELA	5	744043	9	B-C	3	3036	0.36	0.3551	0.1708	0.3597	0.1135	0.001	0.2114	-0.049	-0.0786	0.2116	-0.1517	-0.0114
ELA	5	744046	9	B-C	2	3038	0.8134	0.8131	0.0313	0.1247	0.0306	0.0003	0.3959	0.3953	-0.2211	-0.243	-0.2062	0.0089
ELA	5	744096	9	B-C	2	3038	0.2913	0.2912	0.4653	0.1356	0.1076	0.0003	0.1877	0.1879	0.0348	-0.232	-0.0738	-0.0209
ELA	5	744044	9	B-K	2	3038	0.5823	0.3323	0.0382	0.0471	0.5821	0.0003	0.2036	-0.0232	-0.2326	-0.2118	0.2038	-0.0097

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	5	744045	9	B-K	2	3035	0.3605	0.3146	0.1389	0.36	0.1853	0.0013	0.1466	-0.0536	-0.0339	0.147	-0.0852	-0.025
ELA	5	744047	9	B-K	2	3032	0.3443	0.1119	0.3435	0.3511	0.1912	0.0023	0.136	-0.2603	0.1358	0.1364	-0.1207	-0.0024
ELA	5	744097	9	B-K	2	3034	0.7076	0.7065	0.077	0.1198	0.0951	0.0016	0.3595	0.3602	-0.1832	-0.2061	-0.1603	-0.0309
ELA	5	744050	9	B-V	2	3036	0.6673	0.1803	0.125	0.027	0.6667	0.001	0.4277	-0.3321	-0.1113	-0.2254	0.4283	-0.0276
ELA	5	744683	9	D	2	3038	0.7943	0.794	0.0675	0.1214	0.0168	0.0003	0.2437	0.2441	-0.1628	-0.1378	-0.0978	-0.0172
ELA	5	744909	9	D	2	3038	0.5556	0.1004	0.5554	0.1909	0.153	0.0003	0.4244	-0.1861	0.4246	-0.2609	-0.1448	-0.0228
ELA	6	662369	0	A-C	3	39306	0.4287	0.2315	0.1369	0.2003	0.4268	0.0045	0.3593	0.0076	-0.2509	-0.2297	0.3607	-0.0521
ELA	6	662371	0	A-C	3	39368	0.5402	0.0815	0.1233	0.5386	0.2537	0.0029	0.3187	-0.27	-0.2398	0.3196	-0.0109	-0.0348
ELA	6	712927	0	A-C	2	39371	0.5026	0.1164	0.5011	0.184	0.1956	0.0028	0.3865	-0.1808	0.3873	-0.2396	-0.1024	-0.0416
ELA	6	712935	0	A-C	3	39393	0.5055	0.5044	0.1164	0.2685	0.1085	0.0023	0.459	0.4598	-0.1797	-0.2069	-0.2519	-0.0465
ELA	6	712936	0	A-C	2	39403	0.4528	0.1537	0.2954	0.097	0.4519	0.002	0.2873	-0.1626	-0.0674	-0.1763	0.2883	-0.043
ELA	6	712937	0	A-C	2	39398	0.5355	0.1323	0.2096	0.1216	0.5344	0.0021	0.4715	-0.2373	-0.1684	-0.2588	0.4722	-0.0439
ELA	6	662376	0	A-K	2	39378	0.5638	0.074	0.1555	0.2056	0.5623	0.0026	0.4296	-0.2296	-0.245	-0.1546	0.4305	-0.0436
ELA	6	712929	0	A-K	2	39392	0.3307	0.383	0.1563	0.3299	0.1285	0.0023	0.3011	0.0756	-0.2524	0.302	-0.253	-0.0508
ELA	6	712932	0	A-K	3	39394	0.432	0.2575	0.4311	0.1645	0.1447	0.0022	0.3235	-0.0693	0.3243	-0.2338	-0.1185	-0.0407
ELA	6	662383	0	A-V	3	39359	0.4347	0.1034	0.4333	0.3874	0.0727	0.0031	0.3565	-0.1218	0.3573	-0.155	-0.2396	-0.0405
ELA	6	663737	0	A-V	2	39370	0.838	0.8356	0.0754	0.0537	0.0325	0.0028	0.5036	0.5039	-0.3117	-0.2827	-0.2175	-0.0408
ELA	6	712928	0	A-V	2	39383	0.6229	0.1689	0.1216	0.6213	0.0856	0.0025	0.5113	-0.2263	-0.2944	0.5119	-0.233	-0.0422
ELA	6	710771	0	B-C	2	39416	0.4297	0.2005	0.2068	0.1621	0.429	0.0017	0.447	-0.2239	-0.1452	-0.1945	0.4473	-0.0314
ELA	6	710782	0	B-C	2	39419	0.4576	0.1442	0.1611	0.4569	0.2362	0.0016	0.3674	-0.1582	-0.2696	0.3677	-0.0645	-0.0279
ELA	6	711234	0	B-C	2	39403	0.5384	0.5374	0.1544	0.2201	0.0862	0.002	0.4898	0.49	-0.2579	-0.1949	-0.2454	-0.0337
ELA	6	711235	0	B-C	2	39385	0.7101	0.0528	0.7084	0.1193	0.1171	0.0025	0.5126	-0.2494	0.5134	-0.298	-0.2453	-0.0426
ELA	6	711315	0	B-C	3	39381	0.5443	0.0887	0.1491	0.2167	0.543	0.0026	0.3512	-0.1904	-0.2333	-0.088	0.352	-0.0363
ELA	6	710775	0	B-K	2	39423	0.3137	0.0912	0.1997	0.3944	0.3133	0.0015	0.2835	-0.1721	-0.1816	-0.0176	0.2838	-0.0235
ELA	6	711237	0	B-K	2	39386	0.6654	0.1198	0.1348	0.6637	0.0793	0.0024	0.5118	-0.2263	-0.2658	0.5125	-0.2807	-0.0408
ELA	6	711239	0	B-K	3	39386	0.4718	0.2115	0.4707	0.2185	0.0969	0.0024	0.2895	-0.1059	0.2902	-0.1558	-0.1203	-0.034
ELA	6	711241	0	B-K	2	39369	0.6233	0.1798	0.0758	0.12	0.6215	0.0029	0.5077	-0.191	-0.2746	-0.3018	0.5087	-0.0498
ELA	6	710772	0	B-V	2	39419	0.7434	0.7422	0.0861	0.1015	0.0686	0.0016	0.5022	0.5029	-0.2859	-0.2342	-0.2677	-0.0354
ELA	6	710773	0	B-V	2	39444	0.5277	0.2267	0.5272	0.1094	0.1358	0.001	0.394	-0.1791	0.3944	-0.2169	-0.1558	-0.0265

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	6	584209	0	D	2	39421	0.5397	0.0766	0.5389	0.1621	0.2209	0.0015	0.3994	-0.1476	0.3998	-0.229	-0.1799	-0.0254
ELA	6	584210	0	D	2	39395	0.4399	0.2055	0.1837	0.4389	0.1697	0.0022	0.1902	-0.0686	-0.1606	0.1912	-0.0087	-0.0354
ELA	6	584211	0	D	1	39435	0.2491	0.4386	0.2488	0.2181	0.0932	0.0012	0.251	0.0087	0.2513	-0.1703	-0.1428	-0.0326
ELA	6	629746	0	D	2	39433	0.474	0.3318	0.0867	0.1068	0.4735	0.0012	0.3966	-0.0937	-0.2731	-0.2462	0.3973	-0.0388
ELA	6	663365	0	D	3	39435	0.4651	0.4646	0.1721	0.1871	0.1751	0.0012	0.3438	0.3444	-0.0643	-0.1602	-0.2207	-0.0342
ELA	6	663367	0	D	3	39426	0.5359	0.0919	0.3311	0.5351	0.0405	0.0014	0.2911	-0.1874	-0.1062	0.2912	-0.2061	-0.014
ELA	6	663368	0	D	3	39435	0.4816	0.3631	0.1103	0.4811	0.0444	0.0012	0.3468	-0.2016	-0.1153	0.3472	-0.1918	-0.0271
ELA	6	716052	0	D	2	39432	0.8429	0.0738	0.0533	0.8418	0.0298	0.0013	0.4277	-0.2816	-0.2295	0.4279	-0.177	-0.0243
ELA	6	716633	0	D	2	39421	0.5976	0.5967	0.0678	0.2279	0.106	0.0015	0.3521	0.3527	-0.2197	-0.1665	-0.1524	-0.0267
ELA	6	744628	1	A-C	2	9055	0.5884	0.0983	0.1264	0.5876	0.1864	0.0013	0.3972	-0.1833	-0.2325	0.3978	-0.1617	-0.0283
ELA	6	744630	1	A-C	2	9048	0.3427	0.15	0.1808	0.3251	0.342	0.0021	0.354	-0.2158	-0.2214	-0.0106	0.354	-0.0155
ELA	6	744631	1	A-C	2	9063	0.6357	0.6354	0.134	0.1681	0.0621	0.0004	0.491	0.491	-0.2671	-0.2702	-0.1826	-0.0122
ELA	6	744632	1	A-C	2	9050	0.6051	0.1193	0.6039	0.1701	0.1048	0.0019	0.4613	-0.2303	0.4616	-0.2272	-0.211	-0.0264
ELA	6	744633	1	A-K	2	9060	0.5146	0.0682	0.5142	0.3404	0.0765	0.0008	0.3862	-0.2054	0.3865	-0.1657	-0.2344	-0.0209
ELA	6	744636	1	A-K	2	9051	0.3002	0.1103	0.2352	0.2997	0.353	0.0018	0.0832	-0.2185	-0.0973	0.0835	0.1507	-0.0124
ELA	6	744637	1	A-K	2	9061	0.5614	0.561	0.1306	0.1322	0.1755	0.0007	0.4292	0.4293	-0.1573	-0.2514	-0.1958	-0.0142
ELA	6	744717	1	A-V	2	9043	0.6855	0.12	0.0654	0.1283	0.6837	0.0026	0.4376	-0.2464	-0.232	-0.1937	0.4381	-0.0302
ELA	6	745247	1	D	2	12818	0.53	0.2739	0.5297	0.1298	0.066	0.0007	0.2912	-0.1646	0.2916	-0.1122	-0.1364	-0.0223
ELA	6	745256	1	D	1	9053	0.6046	0.6036	0.1353	0.1485	0.1111	0.0015	0.4049	0.4051	-0.2317	-0.1622	-0.1925	-0.0183
ELA	6	745392	1	D	2	9061	0.4343	0.2281	0.2109	0.434	0.1264	0.0007	0.2463	-0.1545	-0.0512	0.2465	-0.1085	-0.0162
ELA	6	745211	2	A-C	2	3817	0.5724	0.0686	0.2059	0.1525	0.5717	0.0013	0.3197	-0.2395	-0.1293	-0.1245	0.3198	-0.0204
ELA	6	745220	2	A-C	3	3819	0.4355	0.219	0.4351	0.1902	0.1549	0.0008	0.2317	-0.1084	0.2316	-0.1962	0.0196	-0.0027
ELA	6	745221	2	A-C	3	3816	0.2345	0.3587	0.0727	0.2342	0.3328	0.0016	0.143	-0.0392	-0.1524	0.1432	-0.0033	-0.018
ELA	6	745222	2	A-C	2	3822	0.456	0.0361	0.3488	0.456	0.1591		0.222	-0.2078	-0.1118	0.222	-0.0506	
ELA	6	745216	2	A-K	3	3819	0.3349	0.1557	0.3846	0.1243	0.3346	0.0008	0.1547	-0.0738	-0.05	-0.0639	0.1554	-0.0418
ELA	6	745217	2	A-K	3	3820	0.4322	0.432	0.3519	0.1175	0.0981	0.0005	0.3267	0.3266	-0.093	-0.2201	-0.1563	-0.0005
ELA	6	745212	2	A-V	2	3819	0.4441	0.4437	0.2643	0.0633	0.2279	0.0008	0.2561	0.2563	-0.0901	-0.2349	-0.0717	-0.0112
ELA	6	745213	2	A-V	2	3813	0.5261	0.1463	0.5249	0.1402	0.1863	0.0024	0.2281	-0.1354	0.2284	-0.1443	-0.0394	-0.0163
ELA	6	745248	2	D	2	7640	0.8743	0.0738	0.0347	0.8738	0.0171	0.0007	0.3567	-0.1921	-0.2505	0.3575	-0.1698	-0.0261

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	6	745257	2	D	2	3815	0.6797	0.0285	0.0432	0.248	0.6784	0.0018	0.4591	-0.1903	-0.2311	-0.3125	0.4587	-0.0148
ELA	6	745393	2	D	2	3817	0.7126	0.0644	0.1321	0.0905	0.7117	0.0013	0.4563	-0.1798	-0.2581	-0.2593	0.4567	-0.0262
ELA	6	744209	3	A-C	2	3786	0.4995	0.2068	0.4988	0.2691	0.024	0.0013	0.4525	-0.1857	0.4531	-0.2859	-0.1522	-0.0349
ELA	6	744218	3	A-C	2	3788	0.755	0.0572	0.0575	0.13	0.7544	0.0008	0.453	-0.2367	-0.1905	-0.2824	0.454	-0.0395
ELA	6	744220	3	A-C	2	3783	0.6743	0.1095	0.6729	0.1163	0.0992	0.0021	0.4451	-0.1837	0.4455	-0.2703	-0.2126	-0.0314
ELA	6	744212	3	A-K	2	3787	0.47	0.1852	0.1588	0.4695	0.1854	0.0011	0.1938	-0.1631	-0.0408	0.1944	-0.046	-0.0285
ELA	6	744213	3	A-K	2	3788	0.4952	0.0913	0.062	0.4949	0.3511	0.0008	0.3681	-0.3251	-0.2361	0.3685	-0.0689	-0.0291
ELA	6	744215	3	A-K	2	3791	0.6331	0.6331	0.1337	0.1635	0.0696		0.4532	0.4532	-0.3317	-0.1528	-0.1925	
ELA	6	744216	3	A-K	2	3789	0.5307	0.187	0.0567	0.2253	0.5305	0.0005	0.2348	-0.2431	-0.1639	0.0373	0.2345	0.0034
ELA	6	744211	3	A-V	2	3789	0.9058	0.9053	0.0322	0.0185	0.0435	0.0005	0.287	0.2879	-0.2261	-0.1863	-0.0919	-0.0233
ELA	6	745249	3	D	2	7548	0.7072	0.1509	0.0886	0.0531	0.7066	0.0009	0.4479	-0.2592	-0.2302	-0.2019	0.4479	-0.0168
ELA	6	745258	3	D	2	3788	0.4361	0.1224	0.2809	0.1601	0.4358	0.0008	0.3726	-0.1859	-0.1056	-0.2078	0.3726	-0.0052
ELA	6	745394	3	D	2	3787	0.774	0.7731	0.0976	0.0551	0.0731	0.0011	0.3036	0.304	-0.188	-0.2078	-0.09	-0.0213
ELA	6	744893	4	A-C	2	3824	0.6642	0.1236	0.6637	0.0868	0.1252	0.0008	0.4219	-0.2674	0.422	-0.1802	-0.1822	-0.0132
ELA	6	744900	4	A-C	2	3820	0.6168	0.1273	0.1583	0.6156	0.0969	0.0018	0.4343	-0.2135	-0.2163	0.4349	-0.2029	-0.0334
ELA	6	744902	4	A-C	2	3821	0.6148	0.6138	0.069	0.162	0.1536	0.0016	0.3863	0.3864	-0.2653	-0.1514	-0.1784	-0.0186
ELA	6	744896	4	A-K	2	3824	0.8101	0.0329	0.8095	0.0852	0.0716	0.0008	0.4118	-0.1841	0.4121	-0.2408	-0.2371	-0.0226
ELA	6	744897	4	A-K	2	3822	0.3653	0.3358	0.145	0.1531	0.3648	0.0013	0.285	-0.0102	-0.1949	-0.1759	0.2851	-0.0119
ELA	6	744898	4	A-K	2	3819	0.5172	0.1278	0.3172	0.5161	0.0368	0.0021	0.2675	-0.2078	-0.0549	0.2679	-0.2021	-0.0194
ELA	6	744935	4	A-V	2	3819	0.5732	0.0478	0.2451	0.133	0.572	0.0021	0.4422	-0.1792	-0.2208	-0.249	0.4418	-0.0175
ELA	6	744936	4	A-V	2	3820	0.8301	0.8286	0.0601	0.0549	0.0546	0.0018	0.3928	0.3922	-0.2082	-0.2111	-0.2183	-0.0149
ELA	6	745250	4	D	2	3823	0.9158	0.9148	0.0504	0.0206	0.0131	0.001	0.2997	0.3009	-0.1922	-0.1707	-0.1473	-0.0291
ELA	6	745385	4	D	2	3816	0.5802	0.0478	0.0969	0.5785	0.2738	0.0029	0.1618	-0.1829	-0.2156	0.1641	0.0546	-0.0481
ELA	6	745395	4	D	2	3822	0.8872	0.0426	0.8861	0.046	0.024	0.0013	0.3761	-0.2192	0.3792	-0.2116	-0.195	-0.0565
ELA	6	744651	5	A-C	2	3799	0.6439	0.1352	0.1018	0.1189	0.6433	0.0008	0.4406	-0.1823	-0.2602	-0.2133	0.4415	-0.0513
ELA	6	744652	5	A-C	2	3801	0.6811	0.681	0.0999	0.1307	0.0881	0.0003	0.3495	0.3499	-0.163	-0.2397	-0.1166	-0.0205
ELA	6	744655	5	A-C	2	3795	0.2722	0.394	0.2109	0.2717	0.1215	0.0018	-0.012	0.0084	0.0042	-0.0113	0.0008	-0.0252
ELA	6	744656	5	A-K	2	3796	0.7582	0.0479	0.757	0.045	0.1486	0.0016	0.4441	-0.2004	0.4456	-0.2394	-0.272	-0.0487
ELA	6	744659	5	A-K	2	3799	0.7623	0.106	0.0686	0.0629	0.7617	0.0008	0.4234	-0.1621	-0.2707	-0.2531	0.4241	-0.0333

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	6	744660	5	A-K	2	3795	0.4451	0.4442	0.3614	0.0721	0.1205	0.0018	0.1691	0.1701	-0.0025	-0.2198	-0.0763	-0.0376
ELA	6	744661	5	A-V	2	3791	0.5028	0.1439	0.5013	0.2735	0.0784	0.0029	0.1382	-0.2641	0.1404	0.1777	-0.2011	-0.0503
ELA	6	744662	5	A-V	2	3796	0.7937	0.0192	0.1147	0.7925	0.0721	0.0016	0.3525	-0.17	-0.2265	0.3537	-0.1802	-0.033
ELA	6	745251	5	D	2	3799	0.8976	0.0224	0.0326	0.8969	0.0473	0.0008	0.34	-0.1845	-0.2079	0.3408	-0.1823	-0.0249
ELA	6	745386	5	D	2	3800	0.7945	0.7941	0.0571	0.095	0.0534	0.0005	0.4099	0.4108	-0.19	-0.2715	-0.1852	-0.0367
ELA	6	745396	5	D	2	3799	0.5188	0.1049	0.314	0.5184	0.0618	0.0008	0.3826	-0.2353	-0.1648	0.3828	-0.1751	-0.0186
ELA	6	743387	6	B-C	2	3821	0.6318	0.6309	0.0829	0.0703	0.2146	0.0013	0.3539	0.3555	-0.2097	-0.2575	-0.112	-0.0527
ELA	6	743388	6	B-C	2	3809	0.6114	0.1864	0.126	0.0745	0.6087	0.0044	0.3729	-0.0858	-0.2307	-0.2684	0.372	-0.0167
ELA	6	743389	6	B-C	2	3822	0.3553	0.1929	0.127	0.3549	0.3241	0.001	0.1347	-0.1222	-0.2568	0.1357	0.1504	-0.0487
ELA	6	743390	6	B-K	2	3819	0.723	0.7216	0.1187	0.0575	0.1004	0.0018	0.5126	0.5134	-0.2707	-0.2683	-0.2612	-0.0373
ELA	6	743392	6	B-K	2	3824	0.613	0.0512	0.6127	0.2054	0.1302	0.0005	0.2953	-0.1745	0.295	-0.1785	-0.0985	0.001
ELA	6	743386	6	B-V	2	3826	0.6435	0.0585	0.0758	0.2222	0.6435		0.3498	-0.2765	-0.1685	-0.1396	0.3498	
ELA	6	743394	6	B-V	2	3820	0.8594	0.0392	0.0805	0.8581	0.0206	0.0016	0.4364	-0.2341	-0.2895	0.4359	-0.1904	-0.0212
ELA	6	743395	6	B-V	2	3821	0.6299	0.288	0.6291	0.0562	0.0254	0.0013	0.3074	-0.184	0.3078	-0.1449	-0.199	-0.0196
ELA	6	717720	6	D	1	3822	0.8318	0.0311	0.1072	0.8309	0.0298	0.001	0.4315	-0.2214	-0.2918	0.432	-0.1905	-0.0267
ELA	6	745252	6	D	2	3824	0.8781	0.0308	0.8777	0.0403	0.0507	0.0005	0.3895	-0.2295	0.3904	-0.208	-0.2128	-0.0301
ELA	6	745387	6	D	2	3819	0.5206	0.1362	0.5196	0.1908	0.1516	0.0018	0.3918	-0.1675	0.3916	-0.1927	-0.1733	-0.0081
ELA	6	745340	7	B-C	2	3759	0.5073	0.5072	0.0702	0.3021	0.1202	0.0003	0.3379	0.3381	-0.2958	-0.0911	-0.1582	-0.0114
ELA	6	745341	7	B-C	2	3754	0.4206	0.1915	0.0989	0.288	0.4199	0.0016	0.4378	-0.247	-0.0951	-0.1985	0.438	-0.0177
ELA	6	745403	7	B-C	2	3759	0.5704	0.0559	0.2117	0.5702	0.162	0.0003	0.3138	-0.1542	-0.2045	0.314	-0.0984	-0.0133
ELA	6	745404	7	B-C	2	3755	0.3262	0.3096	0.204	0.3258	0.1593	0.0013	0.0757	0.0305	-0.0653	0.0767	-0.0605	-0.0443
ELA	6	745343	7	B-K	2	3754	0.6031	0.6021	0.1088	0.0673	0.2202	0.0016	0.4803	0.4807	-0.1969	-0.2337	-0.2759	-0.0281
ELA	6	745344	7	B-K	2	3751	0.7193	0.0481	0.7176	0.1867	0.0452	0.0024	0.2928	-0.1522	0.2931	-0.1455	-0.2008	-0.0198
ELA	6	745346	7	B-K	2	3749	0.2854	0.5029	0.0854	0.1242	0.2846	0.0029	0.0519	0.1627	-0.1875	-0.1531	0.0533	-0.0468
ELA	6	745348	7	B-V	2	3752	0.4486	0.0798	0.4476	0.0785	0.392	0.0021	0.2492	-0.2549	0.2505	-0.1558	-0.0235	-0.0459
ELA	6	745253	7	D	2	3755	0.4716	0.1481	0.0375	0.342	0.471	0.0013	0.3424	-0.137	-0.1997	-0.1749	0.3434	-0.05
ELA	6	745388	7	D	2	3757	0.6492	0.1332	0.1301	0.6487	0.0872	0.0008	0.4392	-0.1957	-0.2378	0.4392	-0.223	-0.0083
ELA	6	745327	8	B-C	2	3820	0.5406	0.0651	0.5402	0.3165	0.0774	0.0008	0.3615	-0.2086	0.3611	-0.1184	-0.2747	0.0004
ELA	6	745328	8	B-C	2	3819	0.4017	0.0602	0.4013	0.1313	0.4062	0.001	0.1236	-0.1042	0.1242	-0.2815	0.1218	-0.0251

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	6	745329	8	B-C	2	3815	0.6493	0.6479	0.1004	0.0989	0.1507	0.0021	0.3783	0.3767	-0.2254	-0.236	-0.1166	-0.0003
ELA	6	745332	8	B-K	2	3816	0.6483	0.1135	0.1535	0.6471	0.084	0.0018	0.3233	-0.1369	-0.1932	0.324	-0.1469	-0.0237
ELA	6	745334	8	B-K	2	3819	0.7601	0.7594	0.1072	0.0552	0.0772	0.001	0.323	0.3215	-0.2237	-0.243	-0.0494	0.0136
ELA	6	745335	8	B-K	2	3822	0.3776	0.0845	0.3814	0.3775	0.1564	0.0003	0.1964	-0.1984	-0.0831	0.1965	0.0013	-0.0121
ELA	6	745337	8	B-V	2	3819	0.3485	0.0727	0.4211	0.1569	0.3482	0.001	0.2909	-0.0335	-0.2065	-0.0746	0.2913	-0.0298
ELA	6	745338	8	B-V	2	3817	0.4105	0.3189	0.1052	0.1645	0.4099	0.0016	0.2258	-0.0859	-0.1533	-0.0618	0.2265	-0.0357
ELA	6	745254	8	D	2	3819	0.5672	0.1708	0.5666	0.0892	0.1724	0.001	0.3978	-0.2004	0.3975	-0.1867	-0.1797	-0.015
ELA	6	745389	8	D	2	3818	0.4421	0.4415	0.2349	0.2004	0.1219	0.0013	0.3122	0.313	-0.1625	-0.1562	-0.0689	-0.0403
ELA	6	745817	9	B-C	3	3755	0.4594	0.2513	0.1676	0.1204	0.4583	0.0024	0.2959	-0.0203	-0.1777	-0.216	0.2977	-0.0592
ELA	6	745825	9	B-C	3	3763	0.3537	0.1464	0.1097	0.39	0.3536	0.0003	0.149	-0.2024	-0.1059	0.0688	0.1492	-0.0153
ELA	6	745826	9	B-C	2	3753	0.1825	0.182	0.1498	0.4596	0.2056	0.0029	0.075	0.0748	-0.1323	0.0163	0.0252	0.0001
ELA	6	745827	9	B-C	2	3753	0.3802	0.3411	0.3791	0.1342	0.1427	0.0029	0.107	0.0204	0.108	-0.1159	-0.0599	-0.03
ELA	6	745828	9	B-C	2	3750	0.6517	0.11	0.6493	0.1334	0.1036	0.0037	0.252	-0.1359	0.2531	-0.1171	-0.1198	-0.0321
ELA	6	745820	9	B-K	3	3761	0.2757	0.2612	0.3026	0.2755	0.1599	0.0008	0.1018	0.0755	-0.1645	0.102	-0.0079	-0.0108
ELA	6	745818	9	B-V	2	3764	0.8148	0.0664	0.0361	0.8148	0.0826		0.2848	-0.2121	-0.1476	0.2848	-0.1099	
ELA	6	745819	9	B-V	2	3756	0.4105	0.4097	0.2048	0.2439	0.1395	0.0021	0.1812	0.1817	-0.1031	-0.0293	-0.0982	-0.0253
ELA	6	745255	9	D	2	3761	0.6477	0.084	0.1196	0.6472	0.1485	0.0008	0.4116	-0.2139	-0.2129	0.4127	-0.1895	-0.0505
ELA	6	745390	9	D	2	3754	0.6636	0.0369	0.6618	0.0723	0.2264	0.0027	0.3658	-0.1856	0.3668	-0.2172	-0.1922	-0.0363
ELA	7	623067	0	A-C	2	40744	0.7247	0.7219	0.0826	0.0835	0.1081	0.0039	0.5282	0.5284	-0.2681	-0.3023	-0.2473	-0.0404
ELA	7	623072	0	A-C	2	40742	0.4708	0.1348	0.1502	0.2421	0.469	0.0039	0.4242	-0.2233	-0.1055	-0.2221	0.4252	-0.0507
ELA	7	625545	0	A-C	2	40809	0.6106	0.1086	0.1434	0.1365	0.6092	0.0023	0.5362	-0.2192	-0.2656	-0.2876	0.5367	-0.0384
ELA	7	623064	0	A-K	2	40809	0.6252	0.0964	0.6238	0.1351	0.1424	0.0023	0.4308	-0.1003	0.432	-0.2613	-0.2523	-0.0458
ELA	7	623071	0	A-K	2	40775	0.5824	0.5806	0.0792	0.2591	0.0779	0.0031	0.5603	0.5612	-0.2952	-0.2861	-0.2575	-0.0508
ELA	7	625541	0	A-K	2	40809	0.6215	0.1895	0.6201	0.1137	0.0744	0.0023	0.4906	-0.1787	0.4914	-0.3332	-0.2311	-0.0431
ELA	7	625546	0	A-K	3	40808	0.5569	0.1643	0.1459	0.1318	0.5557	0.0023	0.2826	-0.0741	-0.0746	-0.2521	0.2839	-0.0419
ELA	7	625548	0	A-K	2	40827	0.5411	0.5401	0.1095	0.2711	0.0775	0.0018	0.5646	0.5649	-0.2438	-0.3282	-0.2166	-0.0382
ELA	7	625549	0	A-K	2	40822	0.5984	0.168	0.1288	0.5972	0.104	0.002	0.3559	-0.0937	-0.1993	0.3571	-0.234	-0.0422
ELA	7	623069	0	A-V	1	40789	0.4463	0.0253	0.2059	0.4451	0.321	0.0028	0.4606	-0.1809	-0.2793	0.4609	-0.1842	-0.033
ELA	7	625547	0	A-V	1	40830	0.6365	0.1596	0.156	0.6353	0.0474	0.0018	0.4926	-0.2209	-0.2827	0.4936	-0.2455	-0.0478

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	7	632526	0	A-V	1	40841	0.6995	0.0931	0.6985	0.1213	0.0856	0.0015	0.4824	-0.1867	0.4834	-0.2578	-0.2926	-0.0395
ELA	7	662344	0	B-C	2	40774	0.4885	0.1634	0.1018	0.487	0.2447	0.0031	0.3924	-0.1952	-0.2827	0.3934	-0.0848	-0.0446
ELA	7	662345	0	B-C	3	40778	0.3822	0.2383	0.3811	0.1276	0.25	0.003	0.3916	-0.1647	0.3923	-0.3029	-0.0391	-0.0425
ELA	7	662346	0	B-C	3	40782	0.457	0.1693	0.1444	0.2277	0.4557	0.0029	0.5271	-0.2448	-0.218	-0.219	0.5277	-0.0477
ELA	7	716181	0	B-C	2	40853	0.6929	0.0536	0.1891	0.064	0.6921	0.0012	0.4881	-0.2353	-0.2499	-0.3012	0.4887	-0.0296
ELA	7	716182	0	B-C	2	40860	0.6312	0.0894	0.0894	0.6306	0.1896	0.001	0.4853	-0.213	-0.223	0.4854	-0.2787	-0.0199
ELA	7	716183	0	B-C	2	40834	0.6331	0.0683	0.221	0.077	0.632	0.0017	0.4996	-0.2962	-0.1923	-0.3203	0.4997	-0.0263
ELA	7	662348	0	B-K	3	40792	0.3843	0.3833	0.2321	0.1097	0.2722	0.0027	0.3269	0.3275	-0.2021	-0.2995	0.0485	-0.0362
ELA	7	662349	0	B-K	3	40797	0.6095	0.6079	0.1232	0.1533	0.113	0.0026	0.5218	0.5223	-0.2044	-0.247	-0.306	-0.0382
ELA	7	716187	0	B-K	2	40844	0.5147	0.514	0.2299	0.1644	0.0903	0.0014	0.3614	0.3616	-0.1971	-0.1398	-0.1579	-0.0193
ELA	7	662352	0	B-V	2	40833	0.5828	0.1169	0.2428	0.0568	0.5819	0.0017	0.4601	-0.2702	-0.1729	-0.2802	0.4606	-0.0354
ELA	7	716191	0	B-V	2	40847	0.3744	0.1648	0.3739	0.4247	0.0353	0.0013	0.3893	-0.1114	0.3896	-0.2173	-0.2101	-0.0266
ELA	7	584050	0	D	2	40830	0.367	0.2525	0.1641	0.3664	0.2153	0.0018	0.2204	0.0262	-0.203	0.2209	-0.1013	-0.0249
ELA	7	663487	0	D	2	40844	0.3877	0.2287	0.3871	0.2998	0.083	0.0014	0.4598	-0.1823	0.4599	-0.2206	-0.1648	-0.0252
ELA	7	663530	0	D	2	40832	0.5747	0.2207	0.1274	0.5737	0.0765	0.0017	0.3833	-0.1882	-0.1715	0.3839	-0.2007	-0.032
ELA	7	663532	0	D	2	40818	0.425	0.0526	0.2285	0.2927	0.4241	0.0021	0.2593	-0.2251	-0.0328	-0.1387	0.2599	-0.0278
ELA	7	714521	0	D	2	40868	0.6728	0.6722	0.2236	0.0633	0.0401	0.0008	0.4036	0.4038	-0.2491	-0.2559	-0.1166	-0.02
ELA	7	714522	0	D	2	40843	0.5143	0.0585	0.5135	0.2069	0.2196	0.0014	0.4127	-0.2441	0.4131	-0.2285	-0.1345	-0.0244
ELA	7	715024	0	D	2	40835	0.4317	0.38	0.431	0.0789	0.1085	0.0016	0.2647	-0.0778	0.2651	-0.2371	-0.0923	-0.0208
ELA	7	715028	0	D	2	40825	0.4625	0.4616	0.3543	0.1025	0.0798	0.0019	0.2746	0.2754	-0.1488	-0.0801	-0.149	-0.0346
ELA	7	715765	0	D	2	40854	0.8033	0.1102	0.0495	0.8024	0.0367	0.0012	0.4026	-0.2025	-0.2694	0.4033	-0.2009	-0.0288
ELA	7	744881	1	A-C	2	8637	0.685	0.1761	0.6844	0.0853	0.0534	0.0008	0.4637	-0.2861	0.4637	-0.2319	-0.1841	-0.0122
ELA	7	744885	1	A-K	2	8614	0.5199	0.2121	0.518	0.1406	0.1259	0.0035	0.3152	0.0088	0.3161	-0.3067	-0.1599	-0.0325
ELA	7	744886	1	A-K	2	8629	0.489	0.4882	0.0611	0.0715	0.3775	0.0017	0.307	0.3074	-0.2159	-0.2343	-0.084	-0.0208
ELA	7	744887	1	A-K	2	8638	0.5897	0.1078	0.1494	0.5893	0.1528	0.0007	0.441	-0.1658	-0.1821	0.4415	-0.2785	-0.0257
ELA	7	744889	1	A-K	2	8623	0.4292	0.1264	0.2986	0.4282	0.1444	0.0024	0.3571	-0.2072	-0.1357	0.3574	-0.1275	-0.0211
ELA	7	744890	1	A-K	2	8626	0.4091	0.2765	0.1348	0.1784	0.4083	0.0021	0.3938	0.0167	-0.2755	-0.277	0.3939	-0.0205
ELA	7	744882	1	A-V	2	8626	0.5748	0.5736	0.0965	0.2551	0.0728	0.0021	0.3319	0.3323	-0.2502	-0.0966	-0.1825	-0.02
ELA	7	744883	1	A-V	2	8623	0.7029	0.1003	0.0818	0.1143	0.7012	0.0024	0.4307	-0.136	-0.2536	-0.269	0.4305	-0.0227

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	7	745805	1	D	2	12651	0.5223	0.1121	0.1027	0.2621	0.5214	0.0017	0.3155	-0.1121	-0.1585	-0.1665	0.3163	-0.0318
ELA	7	745857	1	D	2	8635	0.839	0.0318	0.0895	0.0394	0.8382	0.001	0.3735	-0.1615	-0.2592	-0.1779	0.3745	-0.0301
ELA	7	745868	1	D	2	8634	0.7082	0.1433	0.068	0.7074	0.0801	0.0012	0.3715	-0.139	-0.2122	0.3724	-0.2443	-0.03
ELA	7	747189	2	A-C	2	4008	0.8244	0.8239	0.0454	0.0579	0.0723	0.0005	0.4923	0.4917	-0.2664	-0.2725	-0.2631	-0.003
ELA	7	747190	2	A-C	2	4005	0.9386	0.0242	0.02	0.9374	0.0172	0.0012	0.3333	-0.1783	-0.2032	0.3343	-0.1845	-0.0329
ELA	7	747191	2	A-C	2	4006	0.4378	0.4132	0.083	0.0653	0.4374	0.001	-0.0113	0.2206	-0.161	-0.2365	-0.0111	-0.0075
ELA	7	747192	2	A-K	2	4006	0.6775	0.0596	0.6768	0.1728	0.0898	0.001	0.323	-0.1983	0.3233	-0.1942	-0.106	-0.0178
ELA	7	747195	2	A-K	2	4006	0.6423	0.1541	0.1085	0.0948	0.6416	0.001	0.426	-0.1162	-0.2294	-0.3091	0.426	-0.0154
ELA	7	747197	2	A-K	2	4006	0.6535	0.6529	0.0733	0.0419	0.2309	0.001	0.4708	0.4711	-0.1924	-0.2362	-0.2989	-0.0266
ELA	7	747198	2	A-K	2	4004	0.8057	0.0449	0.082	0.8045	0.0671	0.0015	0.4666	-0.2362	-0.2557	0.4689	-0.2581	-0.0605
ELA	7	747200	2	A-V	2	4004	0.7745	0.1242	0.7733	0.0783	0.0227	0.0015	0.3974	-0.2563	0.3981	-0.2002	-0.1826	-0.0299
ELA	7	717722	2	D	2	4006	0.358	0.1092	0.3549	0.1773	0.3576	0.001	0.3755	-0.2538	-0.0678	-0.1773	0.3757	-0.0234
ELA	7	745807	2	D	2	8038	0.73	0.7289	0.0652	0.136	0.0683	0.0016	0.4426	0.4436	-0.2214	-0.2205	-0.2596	-0.0369
ELA	7	745858	2	D	2	4005	0.6155	0.6147	0.1506	0.0541	0.1793	0.0012	0.2439	0.2447	-0.1562	-0.2258	-0.0288	-0.0301
ELA	7	745308	3	A-C	2	4030	0.5491	0.5483	0.1219	0.2034	0.1249	0.0015	0.2831	0.2838	-0.1067	-0.1219	-0.1699	-0.0293
ELA	7	745315	3	A-C	2	4036	0.6142	0.1759	0.0795	0.1303	0.6142		0.4269	-0.178	-0.234	-0.2278	0.4269	
ELA	7	745316	3	A-C	2	4030	0.5112	0.1162	0.5104	0.2909	0.081	0.0015	0.4423	-0.2349	0.4421	-0.1614	-0.2638	-0.0121
ELA	7	745317	3	A-C	2	4033	0.3833	0.2775	0.2076	0.3831	0.1311	0.0007	0.2216	-0.1002	-0.1136	0.2215	-0.0494	-0.0018
ELA	7	745311	3	A-K	2	4035	0.9004	0.0173	0.9001	0.0312	0.051	0.0002	0.2616	-0.1239	0.2622	-0.1639	-0.1528	-0.0208
ELA	7	745313	3	A-K	2	4035	0.6188	0.0837	0.2287	0.6187	0.0686	0.0002	0.4873	-0.2242	-0.2629	0.4875	-0.2529	-0.0208
ELA	7	745309	3	A-V	2	4033	0.4451	0.3372	0.1739	0.0434	0.4447	0.0007	0.3946	-0.2711	-0.043	-0.2527	0.3944	-0.0009
ELA	7	745310	3	A-V	2	4029	0.9082	0.9066	0.0409	0.031	0.0198	0.0017	0.3614	0.3629	-0.2134	-0.2156	-0.1751	-0.0385
ELA	7	717834	3	D	2	4026	0.3862	0.1692	0.2564	0.1866	0.3853	0.0025	0.3408	-0.1125	-0.0971	-0.207	0.3406	-0.0106
ELA	7	745809	3	D	2	8079	0.5236	0.1351	0.1469	0.523	0.1939	0.0011	0.3635	-0.1884	-0.1964	0.3637	-0.1194	-0.016
ELA	7	745859	3	D	2	4032	0.8038	0.028	0.0929	0.803	0.0751	0.001	0.4564	-0.2001	-0.316	0.4572	-0.2126	-0.033
ELA	7	747225	4	A-C	2	4021	0.6173	0.2177	0.1075	0.0569	0.6162	0.0017	0.1408	0.0635	-0.1856	-0.1568	0.1425	-0.0402
ELA	7	747233	4	A-C	2	4021	0.7732	0.7718	0.0611	0.0586	0.1068	0.0017	0.4704	0.4721	-0.2541	-0.2826	-0.2231	-0.0485
ELA	7	747235	4	A-C	2	4024	0.5042	0.5037	0.0452	0.1492	0.3009	0.001	0.0121	0.0133	-0.1881	0.0549	0.0308	-0.0406
ELA	7	747328	4	A-C	2	4026	0.7081	0.071	0.0871	0.7078	0.1336	0.0005	0.4364	-0.2232	-0.2989	0.4371	-0.1658	-0.0348

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	7	747228	4	A-K	2	4023	0.2956	0.3319	0.0678	0.2952	0.3039	0.0012	0.2523	-0.003	-0.2539	0.2528	-0.1063	-0.0339
ELA	7	747231	4	A-K	2	4026	0.4945	0.2823	0.4943	0.0886	0.1343	0.0005	0.4327	-0.0529	0.4331	-0.2849	-0.3257	-0.0315
ELA	7	747227	4	A-V	2	4022	0.8685	0.0392	0.8672	0.0549	0.0372	0.0015	0.3608	-0.1444	0.3616	-0.2332	-0.2137	-0.0295
ELA	7	749406	4	A-V	2	4026	0.2069	0.1621	0.2766	0.354	0.2068	0.0005	0.2236	-0.1996	-0.1475	0.1038	0.2238	-0.0348
ELA	7	745810	4	D	2	8060	0.3386	0.1852	0.2874	0.1878	0.338	0.0016	0.2271	-0.0052	-0.239	0.0095	0.2276	-0.0284
ELA	7	745861	4	D	2	4019	0.3974	0.1346	0.3965	0.2877	0.179	0.0022	0.3616	-0.0919	0.3618	-0.261	-0.0688	-0.0235
ELA	7	747143	5	B-C	2	4039	0.5613	0.1131	0.561	0.244	0.0814	0.0005	0.3515	-0.2295	0.3514	-0.0987	-0.2166	-0.0041
ELA	7	747144	5	B-C	2	4034	0.5325	0.5316	0.1067	0.2054	0.1547	0.0017	0.5481	0.5482	-0.2369	-0.3332	-0.1789	-0.0272
ELA	7	747145	5	B-C	2	4039	0.3179	0.4276	0.0948	0.1594	0.3177	0.0005	0.287	0.0384	-0.2684	-0.2011	0.2871	-0.0196
ELA	7	747147	5	B-C	3	4038	0.7382	0.0265	0.0341	0.7377	0.2009	0.0007	0.2834	-0.196	-0.2103	0.2837	-0.1364	-0.0177
ELA	7	747148	5	B-K	2	4034	0.4566	0.2779	0.4558	0.0891	0.1755	0.0017	0.0949	0.0719	0.0951	-0.2415	-0.0274	-0.0089
ELA	7	747150	5	B-K	2	4038	0.3034	0.4242	0.192	0.0799	0.3031	0.0007	0.1507	0.0168	-0.0822	-0.1661	0.1506	-0.0042
ELA	7	747153	5	B-V	2	4039	0.6826	0.0567	0.2442	0.6823	0.0163	0.0005	0.4295	-0.1918	-0.3128	0.4302	-0.1636	-0.0362
ELA	7	747154	5	B-V	2	4035	0.5353	0.5345	0.2489	0.1643	0.0507	0.0015	0.2883	0.2879	-0.0331	-0.2233	-0.2125	0.0024
ELA	7	745811	5	D	1	8056	0.7624	0.0787	0.0787	0.7615	0.0798	0.0012	0.3929	-0.2148	-0.1923	0.3939	-0.2105	-0.0338
ELA	7	745862	5	D	2	4036	0.5327	0.0775	0.532	0.2069	0.1824	0.0012	0.4258	-0.1707	0.4265	-0.2479	-0.1696	-0.0366
ELA	7	744639	6	B-C	2	4050	0.2847	0.2846	0.1429	0.1217	0.4504	0.0005	0.1633	0.1631	-0.2374	-0.2564	0.1871	0.0094
ELA	7	744640	6	B-C	2	4044	0.5324	0.1698	0.1797	0.1172	0.5313	0.002	0.4125	-0.1224	-0.323	-0.1096	0.4121	-0.009
ELA	7	744642	6	B-C	2	4048	0.6821	0.0886	0.6814	0.1552	0.0738	0.001	0.4665	-0.2341	0.4661	-0.2297	-0.2573	-0.0068
ELA	7	744644	6	B-K	2	4049	0.4836	0.1468	0.2369	0.4832	0.1323	0.0007	0.3942	-0.1718	-0.2232	0.3939	-0.1216	0.0017
ELA	7	744645	6	B-K	2	4049	0.3714	0.039	0.4474	0.3712	0.1417	0.0007	0.1867	-0.212	0.0444	0.1867	-0.2038	-0.0054
ELA	7	744647	6	B-K	2	4038	0.3908	0.1705	0.3894	0.0666	0.3699	0.0035	0.2866	-0.2072	0.288	-0.2633	0.0121	-0.0462
ELA	7	744649	6	B-V	2	4047	0.762	0.7611	0.0827	0.1229	0.0321	0.0012	0.3761	0.3759	-0.2178	-0.1903	-0.2124	-0.0121
ELA	7	744650	6	B-V	2	4042	0.4812	0.1009	0.3366	0.08	0.48	0.0025	0.2363	-0.2411	0.0295	-0.216	0.2363	-0.0156
ELA	7	745812	6	D	2	8059	0.8389	0.0731	0.8375	0.0443	0.0434	0.0017	0.4262	-0.2292	0.4254	-0.2444	-0.2274	-0.0154
ELA	7	745863	6	D	2	4040	0.5998	0.1074	0.1518	0.598	0.1399	0.003	0.4504	-0.201	-0.2072	0.4494	-0.2395	-0.0131
ELA	7	744618	7	B-C	2	4038	0.4539	0.2989	0.1951	0.0512	0.4532	0.0017	0.2562	-0.0172	-0.1365	-0.2953	0.2565	-0.0159
ELA	7	744620	7	B-C	2	4040	0.7027	0.0695	0.0905	0.137	0.7019	0.0012	0.4527	-0.1813	-0.2552	-0.2533	0.4531	-0.025
ELA	7	744621	7	B-C	2	4037	0.2579	0.2574	0.2423	0.0781	0.4203	0.002	0.0837	0.0846	0.0693	-0.1539	-0.0476	-0.0422

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	7	744623	7	B-C	2	4031	0.4145	0.1768	0.1597	0.4131	0.247	0.0035	0.2744	-0.2585	-0.1102	0.2751	0.0123	-0.0308
ELA	7	744625	7	B-C	2	4045	0.8015	0.0858	0.8015	0.044	0.0687		0.4066	-0.2529	0.4066	-0.2276	-0.1766	
ELA	7	744622	7	B-K	2	4034	0.7248	0.134	0.7229	0.1001	0.0403	0.0027	0.3991	-0.2188	0.4013	-0.2274	-0.1729	-0.0537
ELA	7	744624	7	B-K	2	4042	0.6813	0.6808	0.0435	0.0388	0.2361	0.0007	0.1671	0.1686	-0.1623	-0.2185	-0.0048	-0.0455
ELA	7	744716	7	B-K	2	4040	0.8361	0.047	0.0799	0.8351	0.0368	0.0012	0.3997	-0.1586	-0.2917	0.4001	-0.1857	-0.0243
ELA	7	745814	7	D	1	4040	0.8017	0.1441	0.8007	0.0302	0.0237	0.0012	0.3695	-0.2089	0.3709	-0.2374	-0.2158	-0.0374
ELA	7	745864	7	D	2	4040	0.7054	0.0771	0.0771	0.1399	0.7046	0.0012	0.3615	-0.1871	-0.2058	-0.1713	0.3622	-0.0284
ELA	7	744869	8	B-C	2	4018	0.6162	0.1488	0.1632	0.0711	0.6152	0.0017	0.3008	-0.2296	-0.0431	-0.1866	0.3015	-0.0277
ELA	7	744879	8	B-C	2	4020	0.5062	0.5056	0.1732	0.1488	0.1712	0.0012	0.3387	0.3395	-0.0505	-0.2983	-0.1146	-0.0379
ELA	7	744880	8	B-C	2	4025	0.444	0.2134	0.2035	0.1391	0.444		0.4309	-0.2362	-0.062	-0.2669	0.4309	
ELA	7	744872	8	B-K	2	4016	0.4724	0.085	0.1911	0.4713	0.2504	0.0022	0.2507	-0.1191	0.0024	0.2512	-0.2122	-0.0253
ELA	7	744875	8	B-K	2	4016	0.2418	0.1168	0.2412	0.4646	0.1752	0.0022	0.1184	-0.0528	0.1192	0.0514	-0.1523	-0.0379
ELA	7	744876	8	B-K	2	4021	0.3892	0.3888	0.232	0.154	0.2241	0.001	0.2361	0.2365	-0.0333	-0.1094	-0.1464	-0.023
ELA	7	744870	8	B-V	2	4016	0.3583	0.4395	0.0964	0.3575	0.1043	0.0022	0.2454	0.0336	-0.297	0.2461	-0.1487	-0.0316
ELA	7	744871	8	B-V	1	4016	0.6526	0.0584	0.6512	0.0306	0.2576	0.0022	0.4205	-0.2296	0.4201	-0.2143	-0.249	-0.0128
ELA	7	745815	8	D	2	4022	0.7009	0.7004	0.1193	0.077	0.1026	0.0007	0.4527	0.4526	-0.2364	-0.232	-0.226	-0.0104
ELA	7	745865	8	D	2	4020	0.6157	0.076	0.6149	0.1322	0.1757	0.0012	0.3484	-0.2116	0.3484	-0.1828	-0.1344	-0.0113
ELA	7	747131	9	B-C	3	4015	0.4628	0.1378	0.1763	0.2223	0.4621	0.0015	0.2857	-0.0457	-0.0684	-0.2391	0.2868	-0.0449
ELA	7	747139	9	B-C	3	4017	0.4526	0.0948	0.1522	0.4521	0.2999	0.001	0.3789	-0.1303	-0.2518	0.3793	-0.1297	-0.0241
ELA	7	747140	9	B-C	2	4014	0.1769	0.4001	0.3203	0.1012	0.1766	0.0017	0.0939	0.006	0.063	-0.2266	0.0937	0.0062
ELA	7	747141	9	B-C	2	4013	0.4485	0.19	0.4476	0.3054	0.055	0.002	0.241	-0.1433	0.2421	-0.0436	-0.1853	-0.0407
ELA	7	747138	9	B-K	2	4012	0.3736	0.3728	0.2925	0.1311	0.2014	0.0022	0.3411	0.3411	-0.1229	-0.1148	-0.1729	-0.0204
ELA	7	747132	9	B-V	1	4014	0.2175	0.2171	0.4807	0.1594	0.141	0.0017	0.1026	0.1033	0.0976	-0.0765	-0.1774	-0.0384
ELA	7	747133	9	B-V	2	4015	0.4466	0.1313	0.2169	0.4459	0.2044	0.0015	0.1912	-0.1565	-0.0281	0.1917	-0.0745	-0.0211
ELA	7	747142	9	B-V	2	4018	0.8805	0.0311	0.8799	0.0385	0.0497	0.0007	0.4299	-0.2286	0.4286	-0.2453	-0.2412	-0.0009
ELA	7	745816	9	D	2	4017	0.8367	0.0649	0.0532	0.8359	0.045	0.001	0.4363	-0.2328	-0.2498	0.4349	-0.2298	-0.0005
ELA	7	745867	9	D	2	4016	0.306	0.3056	0.1415	0.379	0.1726	0.0012	0.1461	0.1456	-0.1988	-0.0202	0.0304	0.0132
ELA	8	625571	0	A-C	2	41352	0.6269	0.079	0.1207	0.6254	0.1724	0.0024	0.547	-0.2496	-0.2849	0.5471	-0.2724	-0.0355
ELA	8	625577	0	A-C	2	41343	0.3942	0.3932	0.0552	0.4854	0.0636	0.0026	0.3397	0.3408	-0.2237	-0.1731	-0.1074	-0.052

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	8	625579	0	A-C	2	41342	0.4189	0.2159	0.4178	0.1864	0.1773	0.0026	0.2054	0.0154	0.2066	-0.135	-0.1402	-0.041
ELA	8	712071	0	A-C	2	41380	0.4651	0.4643	0.1553	0.1058	0.2729	0.0017	0.3213	0.3218	-0.2112	-0.2823	0.009	-0.0287
ELA	8	712072	0	A-C	2	41384	0.7473	0.1419	0.0361	0.7461	0.0743	0.0016	0.5331	-0.2924	-0.2566	0.5339	-0.3084	-0.0397
ELA	8	625570	0	A-K	2	41355	0.474	0.2699	0.0542	0.2007	0.4729	0.0023	0.4202	-0.0756	-0.2239	-0.3094	0.4208	-0.0388
ELA	8	625575	0	A-K	2	41319	0.4391	0.1923	0.1184	0.2484	0.4377	0.0032	0.3688	0.0972	-0.2788	-0.2985	0.3698	-0.048
ELA	8	625578	0	A-K	3	41347	0.5706	0.5692	0.1506	0.129	0.1488	0.0025	0.478	0.4787	-0.2696	-0.266	-0.1384	-0.0442
ELA	8	712073	0	A-K	3	41382	0.7002	0.699	0.075	0.0942	0.1301	0.0017	0.4645	0.4647	-0.3241	-0.292	-0.1232	-0.0255
ELA	8	712075	0	A-K	2	41388	0.6342	0.1158	0.1392	0.1102	0.6333	0.0015	0.5806	-0.2248	-0.351	-0.2723	0.5806	-0.0286
ELA	8	712077	0	A-K	2	41377	0.6244	0.147	0.0693	0.6233	0.1586	0.0018	0.4425	-0.2374	-0.3199	0.4433	-0.1314	-0.0368
ELA	8	625574	0	A-V	2	41364	0.6352	0.214	0.0992	0.6338	0.0509	0.0021	0.4567	-0.2217	-0.2814	0.4577	-0.1977	-0.0447
ELA	8	661117	0	B-C	2	41363	0.3657	0.2365	0.2233	0.3649	0.1731	0.0021	0.2799	-0.107	-0.1686	0.2809	-0.0456	-0.0495
ELA	8	661133	0	B-C	2	41354	0.735	0.7333	0.0855	0.1226	0.0562	0.0023	0.5989	0.5996	-0.3542	-0.3158	-0.261	-0.0496
ELA	8	710655	0	B-C	2	41307	0.6369	0.0756	0.1506	0.1357	0.6347	0.0035	0.5661	-0.225	-0.2702	-0.3337	0.5661	-0.0373
ELA	8	710656	0	B-C	2	41300	0.6173	0.2238	0.6151	0.1026	0.055	0.0036	0.4015	-0.1397	0.4032	-0.2461	-0.2642	-0.0515
ELA	8	710657	0	B-C	2	41283	0.611	0.2864	0.0485	0.6085	0.0526	0.0041	0.4763	-0.255	-0.2556	0.4776	-0.2674	-0.0513
ELA	8	710658	0	B-C	2	41316	0.5909	0.0832	0.1787	0.1459	0.5889	0.0033	0.4408	-0.1844	-0.159	-0.2913	0.442	-0.0495
ELA	8	661124	0	B-K	3	41361	0.387	0.3862	0.0494	0.3823	0.18	0.0022	0.3809	0.3815	-0.2122	-0.0819	-0.2551	-0.0417
ELA	8	661128	0	B-K	2	41357	0.5615	0.1539	0.1607	0.1229	0.5603	0.0023	0.5355	-0.176	-0.2417	-0.3404	0.536	-0.0428
ELA	8	710664	0	B-K	2	41332	0.5543	0.5527	0.2504	0.0818	0.1122	0.0029	0.4784	0.4791	-0.2235	-0.2457	-0.2271	-0.044
ELA	8	710665	0	B-V	2	41366	0.7713	0.0346	0.1545	0.7697	0.0392	0.0021	0.3435	-0.2477	-0.1613	0.3449	-0.2061	-0.037
ELA	8	710715	0	B-V	2	41322	0.6935	0.6913	0.1084	0.1196	0.0775	0.0031	0.5083	0.5086	-0.2505	-0.2544	-0.2707	-0.0379
ELA	8	503808	0	D	3	41393	0.7628	0.0794	0.7617	0.0992	0.0583	0.0014	0.448	-0.1483	0.4482	-0.3136	-0.2398	-0.0251
ELA	8	584100	0	D	2	41412	0.4531	0.1908	0.4526	0.2087	0.1469	0.0009	0.3669	-0.042	0.3672	-0.1695	-0.2727	-0.0261
ELA	8	663373	0	D	3	41400	0.4579	0.3935	0.4574	0.0556	0.0923	0.0012	0.3032	-0.1399	0.3037	-0.2213	-0.1082	-0.0258
ELA	8	663376	0	D	2	41378	0.3572	0.3565	0.15	0.276	0.2157	0.0018	0.4456	0.4458	-0.0626	-0.3624	-0.0674	-0.0353
ELA	8	663475	0	D	2	41419	0.5716	0.1498	0.5712	0.1589	0.1193	0.0008	0.3193	-0.2079	0.3194	-0.1484	-0.0902	-0.0135
ELA	8	663488	0	D	2	41369	0.3203	0.3197	0.2299	0.2714	0.1771	0.002	0.331	0.3313	-0.0922	-0.146	-0.1296	-0.0303
ELA	8	714523	0	D	2	41397	0.4023	0.4018	0.1763	0.2537	0.167	0.0013	0.3493	0.3497	-0.1672	-0.0377	-0.2422	-0.0285
ELA	8	714524	0	D	2	41397	0.4654	0.0873	0.2223	0.2243	0.4648	0.0013	0.3794	-0.1702	-0.2592	-0.0777	0.3801	-0.0377

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	8	717698	0	D	2	41419	0.8026	0.0648	0.066	0.802	0.0664	0.0008	0.5175	-0.2778	-0.2813	0.5174	-0.2711	-0.0157
ELA	8	745574	1	A-C	2	8184	0.2625	0.4468	0.1254	0.1639	0.2619	0.0021	0.2305	0.0549	-0.2443	-0.1254	0.2311	-0.0345
ELA	8	745581	1	A-C	2	8199	0.7633	0.7631	0.1071	0.0646	0.065	0.0002	0.4922	0.4924	-0.3186	-0.2512	-0.1983	-0.0152
ELA	8	745582	1	A-C	2	8175	0.4015	0.1703	0.1308	0.2955	0.4002	0.0032	0.2068	0.0019	-0.2424	-0.0417	0.2079	-0.0319
ELA	8	745583	1	A-C	2	8175	0.559	0.0745	0.5572	0.106	0.2591	0.0032	0.3142	-0.2273	0.3155	-0.2652	-0.0303	-0.0371
ELA	8	745576	1	A-K	2	8191	0.3287	0.1824	0.2997	0.3283	0.1884	0.0012	0.1096	-0.1148	-0.081	0.1103	0.0786	-0.0319
ELA	8	745577	1	A-K	2	8195	0.5322	0.2212	0.09	0.5318	0.1563	0.0007	0.4024	-0.0619	-0.268	0.4027	-0.2698	-0.0218
ELA	8	745579	1	A-K	2	8186	0.4847	0.1917	0.4838	0.1224	0.2002	0.0018	0.4966	-0.152	0.4971	-0.2875	-0.2318	-0.0377
ELA	8	745573	1	A-V	2	8175	0.3429	0.3418	0.0738	0.5097	0.0716	0.0032	0.2271	0.2286	-0.1835	-0.0048	-0.2138	-0.0519
ELA	8	746433	1	D	2	12341	0.3647	0.364	0.2813	0.1881	0.1647	0.0019	0.3823	0.3829	-0.1983	-0.1555	-0.0884	-0.0354
ELA	8	746443	1	D	2	8190	0.3868	0.1394	0.2728	0.2002	0.3863	0.0013	0.3871	-0.253	-0.112	-0.1258	0.3873	-0.0204
ELA	8	747128	1	D	2	8186	0.5655	0.1262	0.1629	0.5644	0.1446	0.0018	0.3672	-0.1195	-0.2227	0.3685	-0.1674	-0.0451
ELA	8	745839	2	A-C	2	4106	0.6578	0.0737	0.6569	0.2271	0.0409	0.0015	0.2421	-0.1776	0.2422	-0.0668	-0.2031	-0.0103
ELA	8	745840	2	A-C	2	4106	0.2932	0.2928	0.4691	0.1267	0.1099	0.0015	0.2399	0.2399	-0.0433	-0.0967	-0.1757	-0.0117
ELA	8	745833	2	A-K	2	4107	0.4553	0.1766	0.4548	0.2702	0.0973	0.0012	0.1381	-0.0448	0.1385	0.0326	-0.2215	-0.0189
ELA	8	745835	2	A-K	2	4111	0.7285	0.0489	0.1646	0.7284	0.0579	0.0002	0.4254	-0.2239	-0.1954	0.4258	-0.2923	-0.0254
ELA	8	745837	2	A-K	2	4107	0.6645	0.6637	0.1488	0.098	0.0883	0.0012	0.4468	0.448	-0.2473	-0.1768	-0.2449	-0.0454
ELA	8	745829	2	A-V	2	4112	0.4358	0.3884	0.0496	0.1262	0.4358		0.416	-0.2426	-0.1677	-0.1553	0.416	
ELA	8	745830	2	A-V	2	4109	0.6286	0.061	0.1994	0.1107	0.6282	0.0007	0.43	-0.1915	-0.2137	-0.2437	0.4293	0.0079
ELA	8	745831	2	A-V	2	4106	0.5874	0.3373	0.0275	0.5866	0.0472	0.0015	0.3227	-0.1597	-0.2162	0.3222	-0.2246	-0.0061
ELA	8	746434	2	D	2	8258	0.7973	0.0846	0.0662	0.7966	0.0518	0.0008	0.473	-0.2826	-0.2946	0.4737	-0.1708	-0.0325
ELA	8	746444	2	D	2	4106	0.3631	0.1836	0.3626	0.2405	0.2118	0.0015	0.0942	0.0168	0.0952	-0.2094	0.0946	-0.0373
ELA	8	747129	2	D	2	4108	0.4104	0.41	0.1021	0.1046	0.3823	0.001	0.2692	0.2699	-0.3128	-0.199	0.0496	-0.0389
ELA	8	747155	3	A-C	2	4145	0.6215	0.0657	0.6203	0.117	0.195	0.0019	0.43	-0.2389	0.4288	-0.3116	-0.1234	0.004
ELA	8	747156	3	A-C	2	4152	0.757	0.7568	0.058	0.0648	0.1202	0.0002	0.3581	0.3582	-0.2481	-0.2446	-0.1086	-0.0091
ELA	8	747157	3	A-C	2	4144	0.4578	0.3487	0.0874	0.105	0.4568	0.0022	0.3599	-0.1633	-0.1675	-0.1709	0.3612	-0.0514
ELA	8	747158	3	A-K	2	4147	0.5211	0.3253	0.5203	0.0944	0.0585	0.0014	0.1732	0.0386	0.1741	-0.2082	-0.1837	-0.0291
ELA	8	747161	3	A-K	2	4150	0.6877	0.0667	0.0537	0.6872	0.1917	0.0007	0.1933	-0.2704	-0.2898	0.1936	0.1103	-0.0138
ELA	8	747324	3	A-K	2	4149	0.5664	0.1722	0.097	0.164	0.5659	0.001	0.2914	-0.1544	-0.2556	-0.027	0.2916	-0.019

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	8	747163	3	A-V	2	4151	0.7432	0.0761	0.1144	0.7428	0.0662	0.0005	0.2993	-0.1557	-0.2528	0.2999	-0.0354	-0.0247
ELA	8	747164	3	A-V	2	4149	0.604	0.6034	0.2656	0.1069	0.0231	0.001	0.0978	0.0988	0.0442	-0.136	-0.1657	-0.0308
ELA	8	717837	3	D	1	4151	0.815	0.0619	0.8146	0.0366	0.0864	0.0005	0.476	-0.2479	0.4753	-0.2498	-0.2782	0.005
ELA	8	746435	3	D	2	8296	0.2359	0.1821	0.2357	0.2779	0.3035	0.0008	0.2009	-0.2053	0.2012	-0.0677	0.0542	-0.0268
ELA	8	747120	3	D	2	4142	0.4319	0.4308	0.2861	0.1411	0.1394	0.0026	0.2718	0.2725	-0.0722	-0.1941	-0.0959	-0.0302
ELA	8	746409	4	A-C	2	4153	0.6487	0.1562	0.6485	0.1083	0.0867	0.0002	0.2875	-0.1841	0.2877	-0.1843	-0.0461	-0.0162
ELA	8	746419	4	A-C	2	4152	0.401	0.0679	0.4008	0.2041	0.3267	0.0005	0.0314	-0.1425	0.0316	-0.0895	0.1208	-0.0123
ELA	8	746420	4	A-C	2	4153	0.5851	0.585	0.2826	0.1129	0.0193	0.0002	0.1626	0.1629	-0.0494	-0.1133	-0.1595	-0.0145
ELA	8	746412	4	A-K	2	4152	0.7408	0.0883	0.0578	0.1129	0.7405	0.0005	0.445	-0.2954	-0.2393	-0.1745	0.4448	-0.0041
ELA	8	746413	4	A-K	2	4150	0.4759	0.202	0.1673	0.4754	0.1543	0.001	0.4095	-0.1684	-0.154	0.4099	-0.2181	-0.0266
ELA	8	746415	4	A-K	2	4150	0.6007	0.1283	0.1625	0.6001	0.1081	0.001	0.387	-0.1806	-0.0533	0.3876	-0.3504	-0.0324
ELA	8	746410	4	A-V	2	4146	0.6874	0.0181	0.241	0.053	0.6861	0.0019	0.2024	-0.1908	-0.0375	-0.2326	0.2023	-0.0082
ELA	8	746411	4	A-V	2	4146	0.7774	0.7759	0.0534	0.0818	0.0869	0.0019	0.335	0.3358	-0.1884	-0.1587	-0.1877	-0.0294
ELA	8	718078	4	D	2	4148	0.5333	0.5325	0.3255	0.0578	0.0828	0.0014	0.2985	0.2979	-0.0705	-0.2286	-0.2262	0.0017
ELA	8	746436	4	D	2	8313	0.3835	0.1944	0.1782	0.3832	0.2434	0.0008	0.2155	-0.055	-0.0949	0.2161	-0.1072	-0.0332
ELA	8	747121	4	D	2	4151	0.9513	0.9506	0.0188	0.0164	0.0135	0.0007	0.2937	0.2964	-0.1603	-0.1601	-0.182	-0.0425
ELA	8	737185	5	B-C	2	4163	0.7403	0.0476	0.1691	0.7402	0.043	0.0002	0.3753	-0.1562	-0.1965	0.3754	-0.2839	-0.0106
ELA	8	737189	5	B-C	2	4157	0.4347	0.2538	0.434	0.1417	0.1688	0.0017	0.1899	-0.0629	0.1907	-0.0741	-0.1068	-0.0324
ELA	8	737187	5	B-K	2	4157	0.6878	0.6866	0.0394	0.1018	0.1705	0.0017	0.5164	0.5176	-0.1981	-0.3128	-0.2792	-0.048
ELA	8	737190	5	B-K	3	4155	0.356	0.4772	0.0989	0.3552	0.0665	0.0022	0.2509	-0.0405	-0.139	0.2518	-0.2285	-0.0395
ELA	8	737191	5	B-K	2	4156	0.4557	0.4549	0.0742	0.3153	0.1537	0.0019	0.0871	0.0877	-0.2466	0.1735	-0.163	-0.0195
ELA	8	737218	5	B-K	2	4152	0.7541	0.0872	0.072	0.086	0.7519	0.0029	0.4551	-0.2769	-0.15	-0.2765	0.4576	-0.0606
ELA	8	737192	5	B-V	2	4162	0.5384	0.1626	0.5382	0.2044	0.0944	0.0005	0.3193	-0.1618	0.3197	-0.1334	-0.1549	-0.0278
ELA	8	738317	5	B-V	2	4161	0.5914	0.1013	0.1234	0.1835	0.591	0.0007	0.3554	-0.2202	-0.1102	-0.185	0.3558	-0.0222
ELA	8	746437	5	D	2	8347	0.7434	0.048	0.1878	0.742	0.0204	0.0018	0.4066	-0.2443	-0.2473	0.4071	-0.1989	-0.028
ELA	8	747122	5	D	2	4161	0.4477	0.2034	0.0913	0.2572	0.4474	0.0007	0.2938	-0.1331	-0.108	-0.1398	0.2938	-0.0117
ELA	8	745361	6	B-C	2	4150	0.5434	0.0653	0.543	0.353	0.038	0.0007	0.3214	-0.2949	0.322	-0.0999	-0.2038	-0.0328
ELA	8	745362	6	B-C	2	4151	0.3917	0.3915	0.3063	0.0905	0.2112	0.0005	0.2557	0.2558	-0.1357	-0.1602	-0.0392	-0.0159
ELA	8	745363	6	B-C	2	4148	0.8363	0.0417	0.0573	0.0645	0.8353	0.0012	0.3531	-0.2259	-0.1892	-0.1677	0.3537	-0.0251

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	8	745364	6	B-C	2	4149	0.7125	0.0486	0.086	0.7118	0.1527	0.001	0.4578	-0.2504	-0.2746	0.4584	-0.211	-0.0291
ELA	8	745367	6	B-K	2	4146	0.6848	0.6836	0.254	0.0419	0.0188	0.0017	0.355	0.3553	-0.2049	-0.2294	-0.2143	-0.0247
ELA	8	745369	6	B-K	2	4150	0.4386	0.0903	0.2244	0.2463	0.4382	0.0007	0.4259	-0.1306	-0.1727	-0.2357	0.4257	-0.008
ELA	8	745371	6	B-V	2	4150	0.7542	0.1818	0.0275	0.7537	0.0364	0.0007	0.2864	-0.1475	-0.2152	0.2867	-0.1662	-0.0137
ELA	8	745372	6	B-V	2	4151	0.8853	0.0323	0.8849	0.0349	0.0474	0.0005	0.2922	-0.0927	0.2902	-0.1889	-0.1979	0.0228
ELA	8	746438	6	D	1	4150	0.528	0.5276	0.1173	0.2251	0.1293	0.0007	0.4425	0.4429	-0.2682	-0.1628	-0.197	-0.0271
ELA	8	747124	6	D	2	4147	0.4389	0.0987	0.1478	0.4382	0.3137	0.0014	0.2147	-0.0653	-0.2035	0.2154	-0.0301	-0.0316
ELA	8	743396	7	B-C	2	4147	0.483	0.4827	0.3347	0.0973	0.0846	0.0007	0.2198	0.2199	0.0768	-0.2835	-0.2223	-0.009
ELA	8	743397	7	B-C	2	4144	0.5058	0.3716	0.5051	0.0694	0.0525	0.0014	0.3943	-0.1934	0.3937	-0.2631	-0.1637	0.0008
ELA	8	743398	7	B-C	2	4143	0.358	0.2605	0.3294	0.3573	0.0511	0.0017	0.1359	0.0828	-0.1216	0.1372	-0.1944	-0.0508
ELA	8	743399	7	B-C	2	4150	0.6145	0.1178	0.1142	0.6145	0.1535		0.5109	-0.2002	-0.2266	0.5109	-0.3108	
ELA	8	743400	7	B-K	2	4146	0.7021	0.0983	0.1171	0.0822	0.7014	0.001	0.5268	-0.1992	-0.3292	-0.2744	0.5263	-0.0115
ELA	8	743403	7	B-K	2	4144	0.8472	0.846	0.0682	0.0398	0.0446	0.0014	0.4684	0.4663	-0.2382	-0.2582	-0.2801	0.0001
ELA	8	743401	7	B-V	2	4140	0.7406	0.0504	0.7388	0.1484	0.06	0.0024	0.3827	-0.2211	0.3846	-0.1832	-0.2237	-0.048
ELA	8	743404	7	B-V	2	4150	0.292	0.2043	0.1983	0.3053	0.292		0.2685	-0.3245	-0.1589	0.1566	0.2685	
ELA	8	746439	7	D	1	4147	0.2672	0.1658	0.267	0.1058	0.4607	0.0007	0.3339	-0.2701	0.3339	-0.091	-0.038	-0.0109
ELA	8	747125	7	D	2	4145	0.352	0.1624	0.3516	0.2289	0.2559	0.0012	0.1553	-0.0756	0.1558	-0.0251	-0.0806	-0.0239
ELA	8	744846	8	B-C	1	4161	0.5828	0.5821	0.1097	0.2633	0.0437	0.0012	0.4558	0.456	-0.2452	-0.2068	-0.2761	-0.0211
ELA	8	744855	8	B-C	2	4165	0.3532	0.1606	0.3531	0.2283	0.2578	0.0002	0.268	-0.1387	0.2679	-0.3144	0.1251	0.0046
ELA	8	744856	8	B-C	2	4159	0.6307	0.0643	0.223	0.6296	0.0814	0.0017	0.4302	-0.2277	-0.2063	0.4295	-0.2395	-0.005
ELA	8	744857	8	B-C	2	4159	0.3876	0.2525	0.1795	0.1793	0.3869	0.0017	0.1047	-0.0328	-0.1459	0.0507	0.1046	-0.0043
ELA	8	744849	8	B-K	2	4163	0.8117	0.0574	0.8111	0.0874	0.0434	0.0007	0.497	-0.3013	0.4963	-0.253	-0.258	-0.0056
ELA	8	744852	8	B-K	2	4163	0.4708	0.15	0.1337	0.2451	0.4705	0.0007	0.2594	-0.0347	-0.2419	-0.0804	0.2593	-0.0027
ELA	8	744853	8	B-K	2	4160	0.3048	0.4107	0.1995	0.3044	0.084	0.0014	0.1918	0.0243	-0.03	0.1928	-0.3126	-0.0522
ELA	8	744847	8	B-V	1	4159	0.3794	0.3788	0.066	0.3413	0.2122	0.0017	0.2333	0.234	-0.16	-0.0566	-0.1116	-0.0321
ELA	8	746440	8	D	1	4161	0.8032	0.0535	0.0931	0.0499	0.8022	0.0012	0.4193	-0.1911	-0.2322	-0.2555	0.4207	-0.0413
ELA	8	747126	8	D	2	4161	0.8332	0.0547	0.0583	0.0535	0.8322	0.0012	0.4779	-0.2478	-0.2471	-0.2824	0.4775	-0.0174
ELA	8	745376	9	B-C	2	4188	0.681	0.1091	0.0612	0.1479	0.6794	0.0024	0.2952	-0.2111	-0.2012	-0.0632	0.2968	-0.0418
ELA	8	745377	9	B-K	3	4191	0.6337	0.1005	0.2332	0.6327	0.0319	0.0017	0.3256	-0.1474	-0.1716	0.3262	-0.2226	-0.0314

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
ELA	8	745378	9	B-K	2	4195	0.549	0.5486	0.1039	0.0376	0.3092	0.0007	0.2199	0.22	-0.1496	-0.1745	-0.0657	-0.0105
ELA	8	745380	9	B-K	2	4198	0.5941	0.5941	0.0476	0.0476	0.3106		0.3341	0.3341	-0.2315	-0.2082	-0.1521	
ELA	8	745381	9	B-K	2	4196	0.7776	0.1317	0.7773	0.0638	0.0267	0.0005	0.5	-0.3292	0.4998	-0.2786	-0.1757	-0.0109
ELA	8	745375	9	B-V	2	4190	0.8535	0.0305	0.0317	0.8518	0.0841	0.0019	0.3549	-0.223	-0.203	0.3541	-0.1849	-0.0131
ELA	8	745383	9	B-V	2	4191	0.6314	0.2201	0.6303	0.0758	0.0722	0.0017	0.0429	0.2246	0.0436	-0.2846	-0.1476	-0.0135
ELA	8	745384	9	B-V	2	4198	0.525	0.061	0.1729	0.2411	0.525		0.1276	-0.0429	-0.1773	0.0318	0.1276	
ELA	8	746441	9	D	2	4194	0.645	0.1308	0.1079	0.6444	0.116	0.001	0.4294	-0.2794	-0.1878	0.4298	-0.164	-0.026
ELA	8	747127	9	D	1	4190	0.7308	0.0579	0.151	0.7294	0.0598	0.0019	0.3534	-0.1924	-0.1788	0.3542	-0.1983	-0.0321
MATH	3	408674	0	A-F	1	27160	0.4976	0.0677	0.4938	0.1198	0.3109	0.0077	0.5449	-0.1966	0.5447	-0.2463	-0.2991	-0.0518
MATH	3	479164	0	A-F	1	27320	0.5675	0.5664	0.1921	0.0901	0.1495	0.0019	0.3437	0.3438	-0.2365	-0.2036	-0.051	-0.0176
MATH	3	495184	0	A-F	2	27278	0.3447	0.2875	0.2206	0.145	0.3436	0.0034	0.3694	-0.0669	-0.1466	-0.2361	0.3694	-0.0209
MATH	3	495193	0	A-F	1	27310	0.3762	0.3754	0.2006	0.1909	0.2309	0.0022	0.5058	0.5058	-0.189	-0.2668	-0.1493	-0.0312
MATH	3	657711	0	A-F	2	27307	0.4076	0.1506	0.2334	0.2071	0.4066	0.0023	0.4712	-0.2806	-0.0544	-0.2639	0.4711	-0.023
MATH	3	709878	0	A-F	2	27207	0.4042	0.3887	0.1051	0.4018	0.0984	0.006	0.4428	-0.2012	-0.2032	0.4434	-0.1786	-0.0493
MATH	3	711343	0	A-F	1	27315	0.4395	0.1531	0.1583	0.248	0.4386	0.002	0.4993	-0.1912	-0.2428	-0.2063	0.4994	-0.0268
MATH	3	493220	0	A-T	1	27307	0.6122	0.1155	0.0587	0.6108	0.2127	0.0023	0.5751	-0.2132	-0.1954	0.575	-0.403	-0.0289
MATH	3	493231	0	A-T	1	27316	0.4601	0.1803	0.2919	0.4592	0.0666	0.002	0.5503	-0.145	-0.4338	0.5503	-0.0805	-0.026
MATH	3	617235	0	A-T	2	27192	0.4548	0.2122	0.1492	0.4518	0.1802	0.0065	0.4456	-0.223	-0.1349	0.4467	-0.2046	-0.0553
MATH	3	621395	0	A-T	1	27332	0.7385	0.1244	0.7375	0.0674	0.0694	0.0014	0.4543	-0.2092	0.4544	-0.2558	-0.2593	-0.0244
MATH	3	394378	0	B-0	2	27331	0.6802	0.0457	0.0626	0.6792	0.211	0.0015	0.6066	-0.2466	-0.1771	0.6067	-0.46	-0.028
MATH	3	495186	0	B-0	2	27318	0.576	0.1545	0.1065	0.1621	0.5748	0.0019	0.4761	-0.1831	-0.2403	-0.2551	0.4762	-0.0247
MATH	3	495214	0	B-0	2	27201	0.4461	0.4433	0.2096	0.2338	0.1072	0.0062	0.28	0.2803	-0.1568	-0.1241	-0.0678	-0.0247
MATH	3	579676	0	B-0	2	27151	0.3149	0.2334	0.2417	0.2044	0.3124	0.008	0.4308	-0.2039	-0.1231	-0.1395	0.431	-0.0509
MATH	3	659903	0	B-0	2	27289	0.5695	0.1251	0.5678	0.122	0.1822	0.003	0.5677	-0.2192	0.5671	-0.2549	-0.3206	-0.0233
MATH	3	659904	0	B-0	1	27324	0.5887	0.0883	0.2113	0.111	0.5877	0.0017	0.6095	-0.3506	-0.3282	-0.2089	0.6093	-0.0209
MATH	3	659917	0	B-0	2	27256	0.3676	0.2803	0.1956	0.3661	0.1538	0.0042	0.3213	-0.1091	-0.1944	0.3212	-0.0756	-0.0208
MATH	3	711346	0	B-0	1	27271	0.6844	0.6819	0.1148	0.094	0.1057	0.0037	0.466	0.4674	-0.2176	-0.2718	-0.2144	-0.0514
MATH	3	711414	0	B-0	1	27281	0.7094	0.0707	0.0482	0.1707	0.7071	0.0033	0.5652	-0.1205	-0.2208	-0.4706	0.5643	-0.0272
MATH	3	711415	0	B-0	2	27294	0.5978	0.219	0.078	0.1041	0.5961	0.0028	0.5426	-0.2039	-0.3	-0.3262	0.543	-0.0384

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	3	711418	0	B-O	1	27334	0.6457	0.0999	0.6448	0.1705	0.0834	0.0014	0.4872	-0.2865	0.4875	-0.2539	-0.1843	-0.0263
MATH	3	408536	0	C-G	2	27252	0.2798	0.2786	0.3103	0.179	0.2278	0.0043	0.2295	0.2303	-0.082	-0.0697	-0.0851	-0.0443
MATH	3	497750	0	C-G	2	27323	0.5765	0.5755	0.0901	0.2084	0.1243	0.0018	0.4605	0.461	-0.2326	-0.287	-0.1314	-0.0321
MATH	3	497751	0	C-G	2	27312	0.4398	0.0723	0.4389	0.2399	0.2468	0.0022	0.4032	-0.1472	0.4035	-0.1708	-0.2039	-0.0275
MATH	3	579647	0	C-G	2	27346	0.6164	0.6159	0.2871	0.0521	0.044	0.0009	0.3579	0.3574	-0.1729	-0.2222	-0.2256	0.0001
MATH	3	314244	0	D-M	1	27232	0.4727	0.1942	0.4703	0.2744	0.056	0.0051	0.4583	-0.3897	0.4593	-0.113	-0.0908	-0.0532
MATH	3	394382	0	D-M	2	27269	0.612	0.1549	0.6097	0.1574	0.0743	0.0037	0.4113	-0.2855	0.4117	-0.1716	-0.126	-0.0333
MATH	3	408729	0	D-M	1	27254	0.4692	0.4672	0.1356	0.15	0.243	0.0043	0.4708	0.4718	-0.2211	-0.1325	-0.2542	-0.052
MATH	3	493239	0	D-M	1	27330	0.6378	0.1083	0.1089	0.6368	0.1444	0.0015	0.5934	-0.2319	-0.3024	0.5935	-0.3357	-0.029
MATH	3	493248	0	D-M	1	27328	0.5251	0.2634	0.0701	0.5243	0.1406	0.0016	0.2488	-0.1275	-0.2711	0.249	0.0046	-0.0156
MATH	3	579656	0	D-M	2	27306	0.4542	0.1081	0.2929	0.1435	0.4531	0.0024	0.3736	-0.2847	-0.028	-0.2392	0.3737	-0.0216
MATH	3	579661	0	D-M	2	27227	0.7217	0.0684	0.7179	0.0771	0.1314	0.0053	0.6349	-0.2566	0.6348	-0.2842	-0.4183	-0.0526
MATH	3	579664	0	D-M	2	27329	0.7719	0.0794	0.7707	0.0875	0.0608	0.0015	0.5432	-0.3012	0.5432	-0.3093	-0.2446	-0.0277
MATH	3	622959	0	D-M	1	27319	0.6069	0.2086	0.6058	0.1035	0.0802	0.0019	0.5494	-0.2801	0.5494	-0.2867	-0.2433	-0.0279
MATH	3	624785	0	D-M	2	27204	0.4449	0.1735	0.1677	0.2105	0.4421	0.0061	0.4134	-0.2221	-0.1044	-0.1918	0.4148	-0.0602
MATH	3	662425	0	D-M	2	27272	0.4071	0.2442	0.1651	0.1815	0.4056	0.0036	0.4177	-0.123	-0.1906	-0.2076	0.4177	-0.0255
MATH	3	713366	0	D-M	2	27199	0.4298	0.0629	0.2969	0.4271	0.2068	0.0063	0.3658	-0.1936	-0.0734	0.3675	-0.2387	-0.0574
MATH	3	713371	0	D-M	1	27329	0.869	0.0269	0.8676	0.0438	0.0601	0.0015	0.4262	-0.2023	0.4263	-0.2039	-0.2901	-0.0261
MATH	3	713618	0	D-M	2	27263	0.412	0.0839	0.2656	0.2362	0.4104	0.0039	0.4805	-0.2286	-0.239	-0.1517	0.4813	-0.0541
MATH	3	709880	1	A-F	2	6946	0.2386	0.1725	0.2379	0.1633	0.4238	0.0026	0.352	0.0593	0.3521	-0.127	-0.2511	-0.0263
MATH	3	737299	1	A-T	1	6886	0.4818	0.4765	0.1163	0.23	0.166	0.0112	0.461	0.4604	-0.2124	-0.1264	-0.2804	-0.0412
MATH	3	737301	1	A-T	1	6947	0.4959	0.1538	0.1993	0.1498	0.4947	0.0024	0.3961	-0.1636	-0.2124	-0.1482	0.3967	-0.0328
MATH	3	408705	1	B-O	2	6942	0.4012	0.1409	0.1788	0.3999	0.2773	0.0032	0.4168	-0.1686	-0.1293	0.4164	-0.2116	-0.019
MATH	3	743123	1	B-O	2	6947	0.624	0.137	0.6225	0.132	0.1061	0.0024	0.4944	-0.1598	0.4943	-0.2857	-0.2817	-0.0255
MATH	3	737316	1	C-G	1	6946	0.2558	0.2552	0.0882	0.1162	0.5379	0.0026	0.0863	0.0865	-0.1373	-0.1943	0.1287	-0.0146
MATH	3	301357	1	D-M	2	6946	0.534	0.1432	0.1162	0.2055	0.5326	0.0026	0.3767	-0.1712	-0.196	-0.1586	0.3771	-0.025
MATH	3	737088	1	D-M	1	6900	0.6581	0.1301	0.0991	0.6521	0.1096	0.0092	0.4326	-0.1511	-0.2643	0.4347	-0.2298	-0.0574
MATH	3	737304	2	A-F	1	2548	0.4859	0.4853	0.1027	0.1384	0.2724	0.0012	0.6109	0.6111	-0.25	-0.1534	-0.3937	-0.0366
MATH	3	314122	2	A-T	1	2549	0.7301	0.0835	0.7295	0.1137	0.0725	0.0008	0.471	-0.2607	0.4721	-0.2352	-0.2378	-0.0461

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	3	743115	2	A-T	1	2546	0.7321	0.0466	0.1635	0.0572	0.7307	0.002	0.5565	-0.2049	-0.3792	-0.2664	0.5569	-0.0393
MATH	3	299934	2	B-O	1	2542	0.5909	0.1247	0.1517	0.1313	0.5888	0.0035	0.5264	-0.2745	-0.2391	-0.2366	0.5277	-0.0552
MATH	3	659905	2	B-O	2	2539	0.4892	0.2058	0.1352	0.4869	0.1674	0.0047	0.3072	-0.0904	-0.2073	0.3082	-0.118	-0.0375
MATH	3	738164	2	C-G	1	2549	0.3966	0.1129	0.1815	0.3963	0.3085	0.0008	0.3415	-0.1654	-0.1552	0.3421	-0.1169	-0.0411
MATH	3	738174	2	D-M	2	2535	0.6095	0.0588	0.6056	0.227	0.1023	0.0063	0.2556	-0.1972	0.2578	-0.1135	-0.0943	-0.0435
MATH	3	743132	2	D-M	1	2547	0.5273	0.5265	0.0831	0.1294	0.2595	0.0016	0.5122	0.5124	-0.2331	-0.4488	-0.0896	-0.0405
MATH	3	737303	3	A-F	2	2565	0.6027	0.058	0.2731	0.0658	0.6023	0.0008	0.2816	-0.26	-0.0567	-0.2074	0.2817	-0.0143
MATH	3	408666	3	A-T	1	2564	0.8693	0.0413	0.0386	0.8683	0.0506	0.0012	0.4112	-0.1823	-0.217	0.4116	-0.2749	-0.0247
MATH	3	706330	3	B-O	2	2560	0.3613	0.3603	0.0736	0.3436	0.2197	0.0027	0.3943	0.3951	-0.2088	-0.064	-0.2473	-0.0449
MATH	3	737315	3	B-O	2	2564	0.4555	0.1815	0.455	0.1882	0.1741	0.0012	0.3303	-0.2772	0.3292	-0.1442	-0.0042	0.0256
MATH	3	737087	3	C-G	1	2563	0.6336	0.0206	0.2489	0.0962	0.6326	0.0016	0.4559	-0.1545	-0.3407	-0.1682	0.4565	-0.0291
MATH	3	316233	3	D-M	2	2549	0.6536	0.649	0.1141	0.09	0.1399	0.007	0.4171	0.4129	-0.202	-0.1936	-0.2243	0.0041
MATH	3	624786	3	D-M	2	2564	0.3218	0.3214	0.2178	0.247	0.2127	0.0012	0.266	0.2659	-0.1485	-0.1495	0.0044	-0.0062
MATH	3	738167	3	D-M	2	2555	0.6575	0.0939	0.1223	0.6545	0.1247	0.0047	0.4077	-0.1921	-0.2728	0.4069	-0.1416	-0.0191
MATH	3	737306	4	A-F	2	2530	0.6644	0.6605	0.1293	0.1642	0.0401	0.0059	0.367	0.3682	-0.2228	-0.186	-0.1417	-0.0377
MATH	3	737296	4	A-T	2	2541	0.6651	0.0479	0.112	0.1745	0.664	0.0016	0.5554	-0.24	-0.3367	-0.2735	0.5549	-0.0222
MATH	3	330053	4	B-O	1	2540	0.7276	0.1077	0.0963	0.7261	0.068	0.002	0.5317	-0.3012	-0.3362	0.5323	-0.1715	-0.0383
MATH	3	743122	4	B-O	2	2540	0.6646	0.6633	0.1831	0.0743	0.0774	0.002	0.4408	0.443	-0.1743	-0.2798	-0.2458	-0.0663
MATH	3	743126	4	B-O	2	2528	0.5166	0.2699	0.1489	0.0613	0.5132	0.0067	0.4342	-0.2821	-0.1248	-0.1856	0.4329	-0.0275
MATH	3	312599	4	C-G	1	2538	0.8227	0.0456	0.8204	0.0684	0.0629	0.0028	0.4261	-0.2219	0.4266	-0.2162	-0.2523	-0.0316
MATH	3	617219	4	D-M	2	2535	0.716	0.1513	0.0692	0.7132	0.0625	0.0039	0.5447	-0.4151	-0.2339	0.5448	-0.1471	-0.0434
MATH	3	713370	4	D-M	2	2543	0.4817	0.2232	0.209	0.0857	0.4813	0.0008	0.2624	-0.1423	0.015	-0.2791	0.2618	0.0166
MATH	3	301314	5	A-F	1	2552	0.7167	0.0735	0.7153	0.1345	0.0747	0.002	0.3599	-0.1794	0.36	-0.2147	-0.1578	-0.0198
MATH	3	653747	5	A-F	2	2555	0.2286	0.2636	0.2468	0.2284	0.2605	0.0008	0.4097	-0.2861	-0.1483	0.4092	0.0408	0.0115
MATH	3	737300	5	A-T	2	2554	0.6652	0.1764	0.0751	0.0829	0.6645	0.0012	0.5784	-0.4373	-0.2062	-0.1874	0.5775	-0.0005
MATH	3	711413	5	B-O	1	2555	0.7922	0.7916	0.122	0.0563	0.0293	0.0008	0.5025	0.5015	-0.3095	-0.2778	-0.228	0.0041
MATH	3	737313	5	B-O	2	2545	0.1933	0.235	0.5209	0.0469	0.1924	0.0047	0.333	-0.2605	0.066	-0.2363	0.3339	-0.0609
MATH	3	313471	5	C-G	1	2553	0.7842	0.0978	0.0571	0.7829	0.0606	0.0016	0.4485	-0.2592	-0.2275	0.4467	-0.2285	0.004
MATH	3	738169	5	D-M	1	2551	0.5586	0.0974	0.5573	0.2898	0.0532	0.0023	0.3	-0.0969	0.3018	-0.1513	-0.2229	-0.0516

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	3	743136	5	D-M	1	2541	0.828	0.8228	0.0978	0.0438	0.0293	0.0063	0.2697	0.2766	-0.1714	-0.1387	-0.123	-0.0705
MATH	3	737302	6	A-F	1	2544	0.7783	0.0566	0.046	0.7777	0.119	0.0008	0.4554	-0.2191	-0.2183	0.4555	-0.286	-0.0168
MATH	3	314240	6	A-T	2	2532	0.6994	0.0676	0.1826	0.0487	0.6956	0.0055	0.5872	-0.1926	-0.4394	-0.2177	0.5905	-0.0915
MATH	3	737085	6	B-O	2	2521	0.3241	0.2537	0.3209	0.2745	0.141	0.0098	0.2165	-0.2504	0.216	0.0535	-0.0411	-0.0141
MATH	3	737309	6	B-O	1	2544	0.7252	0.1701	0.0613	0.7247	0.0432	0.0008	0.5938	-0.4919	-0.2108	0.5939	-0.1446	-0.018
MATH	3	653752	6	C-G	2	2542	0.2679	0.2675	0.328	0.3095	0.0935	0.0016	0.2868	0.2871	-0.1278	-0.0928	-0.0801	-0.0211
MATH	3	738162	6	C-G	1	2530	0.6648	0.6606	0.1559	0.0954	0.0817	0.0063	0.4151	0.4179	-0.2707	-0.1748	-0.1572	-0.0667
MATH	3	302001	6	D-M	2	2529	0.7129	0.0518	0.1002	0.7082	0.1332	0.0067	0.4919	-0.1953	-0.3867	0.4956	-0.1745	-0.0809
MATH	3	713364	6	D-M	2	2544	0.4422	0.2121	0.4419	0.2192	0.1261	0.0008	0.4196	-0.2915	0.4196	-0.06	-0.1933	-0.0093
MATH	3	621406	7	A-F	2	2558	0.5297	0.233	0.527	0.0615	0.1735	0.0051	0.4837	-0.1822	0.4842	-0.1788	-0.3117	-0.0528
MATH	3	737298	7	A-T	1	2565	0.7852	0.0895	0.0642	0.7834	0.0607	0.0023	0.4121	-0.1663	-0.3014	0.4125	-0.1967	-0.0339
MATH	3	299925	7	B-O	1	2559	0.7808	0.1474	0.0385	0.7771	0.0323	0.0047	0.5669	-0.4452	-0.2427	0.5668	-0.1575	-0.0511
MATH	3	743125	7	B-O	2	2570	0.7529	0.7526	0.084	0.1369	0.0261	0.0004	0.444	0.4424	-0.2214	-0.2868	-0.1978	0.0322
MATH	3	738163	7	C-G	1	2569	0.4764	0.1949	0.2524	0.0758	0.4761	0.0008	0.2527	-0.126	-0.0378	-0.2262	0.2522	0.0109
MATH	3	738165	7	C-G	2	2566	0.585	0.5838	0.2081	0.1081	0.098	0.0019	0.3502	0.3514	-0.1441	-0.1487	-0.2229	-0.0516
MATH	3	662417	7	D-M	1	2565	0.855	0.0443	0.853	0.0443	0.056	0.0023	0.4909	-0.2652	0.4887	-0.2799	-0.2608	-0.0182
MATH	3	738171	7	D-M	2	2567	0.5107	0.189	0.1466	0.1529	0.5099	0.0016	0.547	-0.224	-0.3151	-0.2042	0.5469	-0.0195
MATH	3	408848	8	A-F	1	2526	0.9014	0.0317	0.0293	0.0376	0.9011	0.0004	0.3411	-0.19	-0.1965	-0.1852	0.3408	-0.0054
MATH	3	743116	8	A-T	1	2520	0.7401	0.0368	0.0582	0.1642	0.738	0.0028	0.3789	-0.2135	-0.1734	-0.2287	0.3785	-0.017
MATH	3	659908	8	B-O	2	2519	0.5554	0.5536	0.2533	0.1334	0.0566	0.0032	0.2927	0.2954	-0.067	-0.1973	-0.2035	-0.0647
MATH	3	737310	8	B-O	1	2511	0.8144	0.0641	0.0166	0.8093	0.1037	0.0063	0.3885	-0.2618	-0.1503	0.3927	-0.2151	-0.0679
MATH	3	743127	8	B-O	2	2513	0.6988	0.6949	0.0677	0.1128	0.1191	0.0055	0.2522	0.2523	-0.188	-0.1626	-0.0489	-0.0226
MATH	3	302212	8	C-G	1	2521	0.5958	0.2442	0.0894	0.5944	0.0696	0.0024	0.4793	-0.2451	-0.2912	0.4794	-0.1785	-0.0315
MATH	3	316234	8	D-M	2	2526	0.5503	0.3205	0.5501	0.1037	0.0253	0.0004	0.3762	-0.3642	0.3759	0.0245	-0.1571	0.009
MATH	3	743133	8	D-M	2	2520	0.4425	0.1298	0.4412	0.1385	0.2877	0.0028	0.48	-0.0386	0.481	-0.1024	-0.4143	-0.057
MATH	3	737081	9	A-F	2	2536	0.5043	0.1593	0.5029	0.0755	0.2595	0.0028	0.5525	-0.1417	0.5529	-0.1872	-0.3942	-0.0451
MATH	3	737305	9	A-F	1	2527	0.3941	0.3917	0.1565	0.1994	0.2462	0.0063	0.4404	0.4396	-0.2037	-0.1539	-0.1789	-0.0258
MATH	3	737080	9	A-T	2	2537	0.7296	0.0519	0.1856	0.7279	0.0322	0.0024	0.5832	-0.1836	-0.4876	0.5819	-0.1543	-0.0293
MATH	3	300611	9	B-O	2	2540	0.6142	0.1451	0.1998	0.6134	0.0405	0.0012	0.4649	-0.3218	-0.21	0.4627	-0.1468	0.0264

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	3	737308	9	B-O	2	2538	0.591	0.0967	0.164	0.1475	0.5899	0.002	0.5679	-0.3063	-0.3002	-0.2152	0.5677	-0.0284
MATH	3	743130	9	C-G	1	2539	0.9386	0.0193	0.0295	0.0126	0.9371	0.0016	0.3194	-0.1766	-0.2094	-0.1498	0.3229	-0.0506
MATH	3	313472	9	D-M	1	2539	0.5644	0.2481	0.5635	0.0904	0.0963	0.0016	0.1832	-0.0222	0.1854	-0.2118	-0.0648	-0.0621
MATH	3	738166	9	D-M	2	2529	0.6236	0.07	0.1361	0.1683	0.6201	0.0055	0.4508	-0.2203	-0.1387	-0.3012	0.4507	-0.0306
MATH	4	314656	0	A-F	2	30404	0.5699	0.1182	0.1573	0.1526	0.5673	0.0045	0.6016	-0.2542	-0.2678	-0.3209	0.6015	-0.0452
MATH	4	408641	0	A-F	2	30369	0.3947	0.3386	0.3924	0.1054	0.1579	0.0057	0.303	-0.0262	0.3043	-0.2298	-0.1701	-0.0483
MATH	4	479188	0	A-F	1	30396	0.5341	0.0957	0.2396	0.5316	0.1284	0.0048	0.511	-0.2166	-0.2968	0.5116	-0.1846	-0.0455
MATH	4	622938	0	A-F	2	30480	0.3692	0.1495	0.2491	0.3685	0.2309	0.002	0.3648	-0.0877	-0.2026	0.3652	-0.1321	-0.035
MATH	4	622939	0	A-F	1	30295	0.7114	0.1397	0.7057	0.0443	0.1023	0.0081	0.5182	-0.35	0.5203	-0.1696	-0.2462	-0.0703
MATH	4	622944	0	A-F	1	30264	0.6272	0.0728	0.2505	0.046	0.6215	0.0091	0.4237	-0.2525	-0.1983	-0.2335	0.4262	-0.0662
MATH	4	662427	0	A-F	2	30471	0.3962	0.2698	0.1562	0.1763	0.3953	0.0023	0.5499	-0.3284	-0.1847	-0.1433	0.5499	-0.0296
MATH	4	706340	0	A-F	2	30449	0.5901	0.1852	0.1092	0.1143	0.5883	0.003	0.4897	-0.2073	-0.2722	-0.2305	0.491	-0.0518
MATH	4	709847	0	A-F	2	30412	0.577	0.1919	0.1054	0.1239	0.5745	0.0043	0.5983	-0.3122	-0.2576	-0.2764	0.5982	-0.0415
MATH	4	709899	0	A-F	2	30487	0.6604	0.2445	0.6592	0.0686	0.026	0.0018	0.5268	-0.3831	0.5271	-0.2282	-0.1651	-0.0297
MATH	4	711349	0	A-F	1	30470	0.5643	0.0989	0.1999	0.1359	0.563	0.0024	0.5579	-0.2992	-0.205	-0.3028	0.5583	-0.0387
MATH	4	493261	0	A-T	1	30484	0.8647	0.0379	0.8631	0.041	0.0562	0.0019	0.4433	-0.2118	0.4443	-0.257	-0.259	-0.0401
MATH	4	493262	0	A-T	2	30467	0.3933	0.0705	0.3639	0.3923	0.1709	0.0025	0.298	-0.1785	-0.118	0.2983	-0.1118	-0.0224
MATH	4	495201	0	A-T	2	30451	0.4047	0.1376	0.3127	0.4034	0.1433	0.003	0.2603	-0.0068	-0.1856	0.2608	-0.1085	-0.0291
MATH	4	575715	0	A-T	1	30492	0.7417	0.074	0.0895	0.0944	0.7405	0.0016	0.514	-0.2646	-0.274	-0.2627	0.5142	-0.028
MATH	4	621396	0	A-T	1	30279	0.6503	0.6447	0.0895	0.1953	0.0619	0.0086	0.4757	0.4785	-0.2341	-0.2531	-0.2288	-0.0724
MATH	4	662438	0	A-T	1	30466	0.6889	0.6872	0.0908	0.0627	0.1568	0.0025	0.4168	0.4177	-0.2351	-0.265	-0.1651	-0.0368
MATH	4	706338	0	A-T	1	30487	0.8419	0.0248	0.0702	0.8404	0.0629	0.0018	0.4617	-0.1797	-0.2726	0.4612	-0.29	-0.0221
MATH	4	709844	0	A-T	1	30480	0.8153	0.0643	0.0579	0.8137	0.0622	0.002	0.4631	-0.242	-0.2728	0.4637	-0.2318	-0.0343
MATH	4	709883	0	A-T	2	30468	0.648	0.6464	0.1374	0.1342	0.0796	0.0024	0.5459	0.5458	-0.3061	-0.2509	-0.2534	-0.0295
MATH	4	709889	0	A-T	2	30466	0.4948	0.2089	0.4936	0.1722	0.1228	0.0025	0.4086	-0.1558	0.4086	-0.1993	-0.1971	-0.0206
MATH	4	313738	0	B-O	2	30443	0.7263	0.7239	0.1398	0.0675	0.0655	0.0032	0.5499	0.5505	-0.3306	-0.2543	-0.2628	-0.0462
MATH	4	314659	0	B-O	2	30509	0.6381	0.1031	0.1355	0.6374	0.1229	0.0011	0.4385	-0.1034	-0.2517	0.4383	-0.2826	-0.0103
MATH	4	575720	0	B-O	2	30449	0.5279	0.1009	0.5263	0.1743	0.1955	0.003	0.4653	-0.1539	0.4652	-0.1926	-0.2811	-0.0258
MATH	4	657726	0	B-O	2	30491	0.582	0.1304	0.0641	0.2227	0.581	0.0017	0.5454	-0.2743	-0.2462	-0.277	0.5456	-0.0305

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	4	657728	0	B-O	1	30462	0.533	0.5316	0.0533	0.0699	0.3426	0.0026	0.5794	0.5795	-0.2522	-0.3382	-0.3048	-0.0321
MATH	4	657730	0	B-O	1	30509	0.8371	0.8362	0.0467	0.0618	0.0543	0.0011	0.3175	0.3178	-0.1627	-0.2018	-0.1505	-0.0192
MATH	4	657737	0	B-O	2	30462	0.6196	0.1442	0.1039	0.1314	0.618	0.0026	0.4058	-0.1195	-0.1811	-0.2914	0.4067	-0.0375
MATH	4	711433	0	B-O	1	30461	0.5031	0.2023	0.5018	0.1622	0.1311	0.0027	0.4603	-0.1953	0.4611	-0.2099	-0.2147	-0.0445
MATH	4	711438	0	B-O	2	30490	0.6013	0.6003	0.2105	0.137	0.0506	0.0017	0.4862	0.4864	-0.1921	-0.3196	-0.2232	-0.0282
MATH	4	565998	0	C-G	2	30492	0.6009	0.5999	0.1471	0.1213	0.13	0.0016	0.4249	0.4257	-0.2816	-0.2405	-0.0855	-0.0371
MATH	4	621401	0	C-G	2	30477	0.5831	0.5819	0.1218	0.2123	0.082	0.0021	0.4226	0.4229	-0.243	-0.201	-0.1662	-0.0295
MATH	4	706343	0	C-G	1	30462	0.4027	0.1322	0.3207	0.1428	0.4016	0.0026	0.3901	-0.2115	-0.1977	-0.0758	0.3898	-0.0132
MATH	4	713378	0	C-G	1	30489	0.38	0.1789	0.1685	0.3793	0.2715	0.0017	0.2974	-0.102	-0.1018	0.2976	-0.1492	-0.0212
MATH	4	314172	0	D-M	2	30404	0.4361	0.1248	0.4341	0.2295	0.2071	0.0045	0.3817	-0.1806	0.3829	-0.1307	-0.1769	-0.0517
MATH	4	617224	0	D-M	2	30445	0.4856	0.3059	0.0993	0.4841	0.1076	0.0032	0.3962	-0.1862	-0.1975	0.3975	-0.1645	-0.0499
MATH	4	659934	0	D-M	2	30477	0.4446	0.1694	0.2654	0.4436	0.1194	0.0021	0.5531	-0.1542	-0.4031	0.5532	-0.1159	-0.0308
MATH	4	706345	0	D-M	1	30395	0.7046	0.7012	0.1436	0.0618	0.0886	0.0048	0.5288	0.5285	-0.3243	-0.1926	-0.2784	-0.0388
MATH	4	706346	0	D-M	2	30463	0.4757	0.1272	0.1036	0.2921	0.4745	0.0026	0.4706	-0.2241	-0.2032	-0.2119	0.4713	-0.0472
MATH	4	713628	0	D-M	1	30475	0.5396	0.2637	0.5384	0.1147	0.0811	0.0022	0.4091	-0.144	0.4097	-0.2196	-0.2538	-0.0337
MATH	4	736735	1	A-F	2	8030	0.408	0.1213	0.4071	0.1704	0.2991	0.0021	0.3776	-0.2307	0.3784	-0.2603	-0.0237	-0.0407
MATH	4	302349	1	A-T	1	8020	0.7605	0.0629	0.0716	0.1043	0.7579	0.0034	0.4052	-0.1903	-0.2035	-0.24	0.4052	-0.0273
MATH	4	743138	1	A-T	2	8030	0.5849	0.5837	0.17	0.1218	0.1224	0.0021	0.4649	0.464	-0.2042	-0.2664	-0.1973	-0.005
MATH	4	743178	1	A-T	1	7855	0.4778	0.1504	0.1981	0.4664	0.1613	0.0239	0.3746	-0.1344	-0.1865	0.378	-0.1504	-0.0716
MATH	4	408755	1	B-O	2	8023	0.4068	0.1341	0.2661	0.4056	0.1913	0.003	0.4464	-0.1641	-0.1641	0.4474	-0.2259	-0.0445
MATH	4	711429	1	B-O	2	8027	0.3524	0.132	0.2123	0.3516	0.3017	0.0025	0.2302	-0.0426	-0.0353	0.2307	-0.1746	-0.0235
MATH	4	743908	1	C-G	1	8029	0.4019	0.0623	0.263	0.2715	0.401	0.0022	0.4459	-0.2057	-0.2135	-0.1652	0.4462	-0.0324
MATH	4	736742	1	D-M	2	8039	0.5761	0.0691	0.1671	0.5755	0.1873	0.001	0.4778	-0.1883	-0.2407	0.478	-0.2513	-0.0202
MATH	4	300349	2	A-F	1	2834	0.7548	0.7532	0.0972	0.068	0.0796	0.0021	0.5281	0.5278	-0.2899	-0.2351	-0.3015	-0.0209
MATH	4	743182	2	A-F	1	2797	0.6754	0.0658	0.2278	0.6651	0.0261	0.0151	0.3455	-0.2591	-0.155	0.3453	-0.1752	-0.0474
MATH	4	706337	2	A-T	2	2836	0.1622	0.1634	0.162	0.3651	0.3081	0.0014	0.1157	0.0119	0.116	0.132	-0.238	-0.0222
MATH	4	736739	2	B-O	2	2835	0.77	0.7687	0.1718	0.0342	0.0236	0.0018	0.2761	0.2771	-0.1325	-0.2032	-0.19	-0.0271
MATH	4	737337	2	B-O	2	2834	0.573	0.0454	0.0761	0.3046	0.5718	0.0021	0.4096	-0.2327	-0.2084	-0.2124	0.4097	-0.0272
MATH	4	302226	2	C-G	1	2838	0.4697	0.1363	0.1504	0.2433	0.4694	0.0007	0.4131	-0.2765	-0.1598	-0.1259	0.4131	-0.0049

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	4	738202	2	C-G	2	2836	0.5427	0.2701	0.1018	0.5419	0.0849	0.0014	0.341	-0.103	-0.1937	0.3417	-0.2325	-0.0315
MATH	4	743914	2	D-M	1	2839	0.7027	0.0482	0.7025	0.1694	0.0796	0.0004	0.4273	-0.1719	0.4273	-0.2715	-0.2088	-0.0094
MATH	4	301945	3	A-F	2	2803	0.6507	0.1721	0.65	0.0873	0.0895	0.0011	0.4712	-0.2394	0.4704	-0.278	-0.1953	0.0067
MATH	4	737336	3	A-F	1	2783	0.5544	0.1614	0.2552	0.0253	0.5499	0.0082	0.5454	-0.3662	-0.2753	-0.0742	0.5451	-0.0526
MATH	4	662443	3	A-T	2	2801	0.3392	0.4818	0.0912	0.0866	0.3386	0.0018	0.4414	-0.107	-0.318	-0.2218	0.4417	-0.038
MATH	4	711436	3	B-O	2	2803	0.2908	0.1885	0.242	0.2904	0.278	0.0011	0.2334	-0.2155	-0.114	0.2339	0.0622	-0.0279
MATH	4	736737	3	B-O	2	2796	0.5272	0.5253	0.0392	0.0798	0.3521	0.0036	0.5074	0.5076	-0.207	-0.3854	-0.2237	-0.0338
MATH	4	738201	3	C-G	1	2802	0.6081	0.1479	0.0702	0.6073	0.1732	0.0014	0.3972	-0.1929	-0.2442	0.3963	-0.1661	0.0044
MATH	4	299669	3	D-M	1	2803	0.6839	0.1037	0.0752	0.1368	0.6832	0.0011	0.5532	-0.2388	-0.2927	-0.3094	0.5541	-0.0447
MATH	4	659938	3	D-M	2	2806	0.5788	0.1803	0.5788	0.1069	0.134		0.4203	-0.1094	0.4203	-0.2429	-0.2654	
MATH	4	737332	4	A-F	1	2762	0.9142	0.0534	0.905	0.0072	0.0244	0.01	0.353	-0.2681	0.3526	-0.1298	-0.1675	-0.0632
MATH	4	737335	4	A-F	1	2786	0.6493	0.0738	0.1867	0.0896	0.6484	0.0014	0.5422	-0.2903	-0.2345	-0.3181	0.5422	-0.019
MATH	4	737327	4	A-T	1	2786	0.8274	0.8262	0.0968	0.0566	0.019	0.0014	0.473	0.4735	-0.3126	-0.2649	-0.1788	-0.0371
MATH	4	408748	4	B-O	1	2788	0.6714	0.1394	0.0642	0.671	0.1247	0.0007	0.3955	-0.2428	-0.1348	0.3957	-0.2067	-0.0183
MATH	4	706342	4	B-O	2	2784	0.5708	0.2222	0.1161	0.5695	0.09	0.0022	0.3973	-0.1427	-0.2389	0.3972	-0.2085	-0.024
MATH	4	743912	4	C-G	1	2785	0.9102	0.9086	0.0093	0.043	0.0373	0.0018	0.2888	0.294	-0.1151	-0.1635	-0.1998	-0.0628
MATH	4	299668	4	D-M	1	2786	0.6432	0.0297	0.186	0.6423	0.1405	0.0014	0.4479	-0.2348	-0.3637	0.4454	-0.0952	0.0266
MATH	4	713387	4	D-M	2	2785	0.4366	0.1599	0.4358	0.2513	0.1513	0.0018	0.1597	0.0008	0.1609	-0.1291	-0.0623	-0.042
MATH	4	662433	5	A-F	2	2802	0.5425	0.2774	0.5405	0.1341	0.0445	0.0036	0.4771	-0.2677	0.4774	-0.2443	-0.1565	-0.0438
MATH	4	743143	5	A-F	2	2807	0.7328	0.7315	0.112	0.0754	0.0793	0.0018	0.5584	0.558	-0.3541	-0.2637	-0.2409	-0.0218
MATH	4	300347	5	A-T	1	2809	0.6515	0.0708	0.1174	0.16	0.6508	0.0011	0.4914	-0.2423	-0.3013	-0.2038	0.4914	-0.0129
MATH	4	743176	5	A-T	1	2779	0.7722	0.7632	0.0843	0.0939	0.0469	0.0117	0.433	0.4341	-0.1614	-0.3352	-0.1628	-0.0697
MATH	4	408765	5	B-O	2	2806	0.7398	0.0633	0.7383	0.1081	0.0882	0.0021	0.4905	-0.2135	0.4915	-0.3064	-0.2362	-0.042
MATH	4	743149	5	B-O	1	2804	0.4183	0.4171	0.186	0.2482	0.1458	0.0028	0.3256	0.326	-0.1773	-0.1149	-0.1154	-0.0257
MATH	4	743910	5	C-G	1	2807	0.7727	0.7713	0.1405	0.0327	0.0537	0.0018	0.4903	0.49	-0.3796	-0.1778	-0.1821	-0.0287
MATH	4	743915	5	D-M	2	2808	0.7813	0.1046	0.0548	0.7802	0.059	0.0014	0.4326	-0.2625	-0.2286	0.4301	-0.1964	0.0148
MATH	4	301392	6	A-F	2	2792	0.6794	0.2228	0.6785	0.0554	0.0418	0.0014	0.3877	-0.2596	0.3874	-0.2646	-0.0594	-0.0117
MATH	4	743181	6	A-F	1	2757	0.9075	0.0411	0.8948	0.03	0.02	0.0139	0.3406	-0.1766	0.3554	-0.2269	-0.1548	-0.1154
MATH	4	662436	6	A-T	1	2790	0.305	0.1445	0.1545	0.3945	0.3044	0.0021	0.2916	-0.2239	-0.2427	0.0694	0.2924	-0.0433

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	4	314657	6	B-O	2	2792	0.7156	0.1448	0.0708	0.0683	0.7146	0.0014	0.5788	-0.3317	-0.2551	-0.3094	0.5792	-0.0348
MATH	4	624801	6	B-O	2	2795	0.1256	0.1416	0.5826	0.1499	0.1255	0.0004	-0.1365	-0.2701	0.4295	-0.2029	-0.1365	0.0006
MATH	4	713374	6	C-G	1	2792	0.2196	0.2192	0.4324	0.1391	0.2078	0.0014	0.1928	0.193	0.0743	-0.2174	-0.0995	-0.0288
MATH	4	713380	6	D-M	2	2793	0.3022	0.363	0.2285	0.3019	0.1055	0.0011	-0.0612	0.233	-0.1988	-0.0606	0.0004	-0.0257
MATH	4	738199	6	D-M	2	2793	0.4107	0.1795	0.4102	0.1785	0.2307	0.0011	0.3584	-0.232	0.3592	-0.1825	-0.0383	-0.0493
MATH	4	737333	7	A-F	1	2806	0.8004	0.0506	0.108	0.041	0.8004		0.4679	-0.2172	-0.2894	-0.25	0.4679	
MATH	4	621400	7	A-T	2	2802	0.4129	0.2602	0.4123	0.2292	0.0969	0.0014	0.2567	-0.1439	0.2562	-0.0543	-0.1367	0.0069
MATH	4	736734	7	A-T	1	2775	0.7431	0.7349	0.0641	0.1105	0.0795	0.011	0.4879	0.4892	-0.1568	-0.3653	-0.2054	-0.0713
MATH	4	743140	7	A-T	1	2800	0.8914	0.0502	0.0192	0.8895	0.0388	0.0021	0.3482	-0.2134	-0.1866	0.3481	-0.1847	-0.0252
MATH	4	301946	7	B-O	2	2801	0.7936	0.7922	0.0527	0.0684	0.0848	0.0018	0.5159	0.5158	-0.2734	-0.3001	-0.2556	-0.0278
MATH	4	738195	7	B-O	2	2804	0.4226	0.3015	0.1882	0.0873	0.4223	0.0007	0.2784	0.0854	-0.2188	-0.3221	0.2786	-0.0137
MATH	4	743911	7	C-G	1	2805	0.5964	0.0299	0.2413	0.1322	0.5962	0.0004	0.1442	-0.1068	-0.0271	-0.1207	0.1442	-0.0029
MATH	4	302228	7	D-M	2	2803	0.7963	0.0563	0.7954	0.1155	0.0317	0.0011	0.5243	-0.2563	0.5207	-0.3644	-0.2029	0.0333
MATH	4	301389	8	A-F	1	2828	0.4678	0.467	0.2774	0.0794	0.1744	0.0018	0.5468	0.5471	-0.2946	-0.1124	-0.2878	-0.0353
MATH	4	736736	8	A-F	2	2831	0.5302	0.1546	0.24	0.5298	0.0748	0.0007	0.4403	-0.1588	-0.2568	0.4402	-0.199	-0.0082
MATH	4	736733	8	A-T	1	2826	0.7498	0.1331	0.0547	0.748	0.0618	0.0025	0.3852	-0.2035	-0.2811	0.3861	-0.1365	-0.0342
MATH	4	737329	8	A-T	1	2797	0.5517	0.0844	0.1359	0.2224	0.5447	0.0127	0.4809	-0.2164	-0.2302	-0.2235	0.4814	-0.0695
MATH	4	657735	8	B-O	2	2829	0.1771	0.3607	0.2782	0.1828	0.1768	0.0014	-0.0645	0.1032	0.0002	-0.0636	-0.0641	-0.0167
MATH	4	738194	8	B-O	1	2832	0.7634	0.0868	0.7631	0.1246	0.0251	0.0004	0.4929	-0.2211	0.4932	-0.3932	-0.1096	-0.023
MATH	4	314191	8	C-G	1	2827	0.8383	0.8366	0.0642	0.0512	0.0459	0.0021	0.4733	0.4737	-0.3004	-0.2551	-0.2091	-0.0331
MATH	4	743917	8	D-M	2	2831	0.7026	0.072	0.1207	0.7021	0.1045	0.0007	0.4875	-0.2897	-0.2711	0.4884	-0.1926	-0.0471
MATH	4	743144	9	A-F	1	2788	0.8056	0.7987	0.0953	0.0256	0.0718	0.0085	0.4141	0.4142	-0.147	-0.1904	-0.3413	-0.0513
MATH	4	743180	9	A-F	2	2808	0.5648	0.1486	0.564	0.2183	0.0676	0.0014	0.4078	-0.3025	0.4078	-0.2063	-0.0343	-0.0212
MATH	4	269339	9	A-T	1	2810	0.8555	0.0505	0.0416	0.0523	0.8549	0.0007	0.3723	-0.1313	-0.2393	-0.2441	0.3704	0.0153
MATH	4	736738	9	B-O	2	2806	0.4726	0.1181	0.1899	0.4716	0.2183	0.0021	0.444	-0.1145	-0.1631	0.4447	-0.2868	-0.0568
MATH	4	743148	9	B-O	1	2807	0.7417	0.0761	0.0939	0.0878	0.7404	0.0018	0.4897	-0.2115	-0.246	-0.3022	0.4908	-0.0432
MATH	4	302353	9	C-G	2	2810	0.6448	0.0284	0.6444	0.181	0.1454	0.0007	0.4143	-0.1627	0.4141	-0.1629	-0.3068	-0.0113
MATH	4	736740	9	C-G	1	2806	0.5706	0.1821	0.5693	0.1358	0.1106	0.0021	0.4012	-0.1229	0.4029	-0.2637	-0.188	-0.061
MATH	4	736741	9	D-M	2	2804	0.5292	0.2272	0.2134	0.5277	0.0288	0.0028	0.5146	-0.2968	-0.2582	0.5154	-0.1479	-0.0457

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	5	313341	0	A-F	1	32399	0.3949	0.3916	0.0434	0.4985	0.058	0.0085	0.4884	0.4887	-0.1458	-0.3341	-0.1572	-0.055
MATH	5	313760	0	A-F	1	32357	0.4859	0.2609	0.1246	0.1236	0.4812	0.0098	0.6071	-0.3621	-0.2302	-0.1863	0.6084	-0.0776
MATH	5	408597	0	A-F	1	32632	0.4903	0.4896	0.0777	0.3437	0.0876	0.0014	0.4604	0.4604	-0.282	-0.2929	-0.0527	-0.019
MATH	5	495241	0	A-F	2	32604	0.5004	0.184	0.4993	0.2272	0.0874	0.0022	0.4148	-0.1482	0.4156	-0.2705	-0.1248	-0.0382
MATH	5	495248	0	A-F	2	32611	0.3558	0.3551	0.323	0.2642	0.0557	0.002	0.324	0.3244	-0.266	0.0225	-0.1723	-0.0284
MATH	5	495254	0	A-F	2	32587	0.228	0.4737	0.2093	0.0869	0.2274	0.0028	0.4643	-0.1692	-0.1723	-0.1378	0.464	-0.0208
MATH	5	575694	0	A-F	1	32584	0.6155	0.6138	0.1451	0.1694	0.0688	0.0028	0.4076	0.4078	-0.2698	-0.1685	-0.1539	-0.0248
MATH	5	642399	0	A-F	2	32592	0.5657	0.5642	0.1983	0.1668	0.068	0.0026	0.5497	0.5495	-0.2546	-0.3179	-0.2033	-0.0238
MATH	5	662460	0	A-F	2	32598	0.2935	0.2928	0.1362	0.2549	0.3137	0.0024	0.332	0.3326	-0.2093	-0.0166	-0.1514	-0.0422
MATH	5	706349	0	A-F	2	32593	0.3715	0.2258	0.2661	0.3706	0.135	0.0026	0.3666	-0.1148	-0.2502	0.3668	-0.0506	-0.0261
MATH	5	706410	0	A-F	2	32591	0.4904	0.2844	0.0889	0.135	0.4891	0.0026	0.5442	-0.1496	-0.2779	-0.3614	0.5449	-0.0441
MATH	5	711367	0	A-F	1	32588	0.64	0.112	0.1235	0.1235	0.6382	0.0027	0.5508	-0.2178	-0.3261	-0.2637	0.5515	-0.0428
MATH	5	711370	0	A-F	2	32595	0.4435	0.2553	0.1535	0.4424	0.1463	0.0025	0.4419	-0.1768	-0.1221	0.442	-0.2746	-0.0274
MATH	5	713632	0	A-F	2	32573	0.5983	0.2129	0.1179	0.0696	0.5964	0.0032	0.6334	-0.4151	-0.2471	-0.2307	0.6339	-0.0478
MATH	5	408608	0	A-T	1	32567	0.3299	0.2045	0.217	0.3288	0.2462	0.0034	0.3182	-0.0533	-0.1591	0.3183	-0.1417	-0.0243
MATH	5	566349	0	A-T	1	32574	0.5511	0.1325	0.1786	0.1364	0.5494	0.0032	0.5337	-0.2643	-0.2432	-0.2351	0.5344	-0.0435
MATH	5	574137	0	A-T	2	32523	0.3457	0.3441	0.2374	0.2146	0.1991	0.0047	0.3432	0.3437	-0.0558	-0.1714	-0.1675	-0.0337
MATH	5	622924	0	A-T	1	32353	0.6546	0.1143	0.6481	0.1347	0.093	0.0099	0.4725	-0.2077	0.4749	-0.2476	-0.2392	-0.0676
MATH	5	659945	0	A-T	1	32597	0.5287	0.1237	0.2916	0.5274	0.055	0.0024	0.5278	-0.1533	-0.4129	0.5281	-0.104	-0.036
MATH	5	659949	0	A-T	1	32617	0.8852	0.0366	0.033	0.8836	0.0451	0.0018	0.379	-0.2115	-0.1708	0.3796	-0.242	-0.0314
MATH	5	709852	0	A-T	2	32606	0.7722	0.0771	0.7705	0.0826	0.0676	0.0022	0.4408	-0.2941	0.4418	-0.1854	-0.2174	-0.0363
MATH	5	709854	0	A-T	2	32649	0.6258	0.1555	0.1358	0.0826	0.6253	0.0009	0.5095	-0.1975	-0.2937	-0.2683	0.5097	-0.0219
MATH	5	710019	0	A-T	2	32645	0.7329	0.1022	0.0778	0.7322	0.0869	0.001	0.5238	-0.3502	-0.2747	0.5239	-0.1835	-0.0214
MATH	5	313325	0	B-0	2	32587	0.4718	0.2037	0.4705	0.1194	0.2037	0.0028	0.4298	-0.2362	0.4308	-0.2798	-0.0665	-0.0453
MATH	5	313924	0	B-0	2	32578	0.4219	0.149	0.1921	0.4206	0.2352	0.003	0.3719	-0.228	-0.3068	0.3729	0.0482	-0.0453
MATH	5	408790	0	B-0	2	32565	0.3324	0.3313	0.3876	0.1667	0.111	0.0034	0.3838	0.3843	-0.1354	-0.1624	-0.1664	-0.0361
MATH	5	493297	0	B-0	2	32562	0.2651	0.2192	0.299	0.2142	0.2642	0.0035	0.451	-0.0916	-0.2057	-0.1584	0.4509	-0.0291
MATH	5	408806	0	C-G	2	32611	0.4776	0.1735	0.164	0.1839	0.4766	0.002	0.4127	-0.0944	-0.1933	-0.2523	0.4129	-0.0262
MATH	5	408813	0	C-G	1	32610	0.6051	0.1475	0.1127	0.6038	0.1339	0.0021	0.4014	-0.1295	-0.2039	0.4022	-0.2491	-0.0325

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	5	495260	0	C-G	2	32608	0.3315	0.3308	0.2233	0.2183	0.2254	0.0021	0.4472	0.4472	-0.0631	-0.2275	-0.2131	-0.0234
MATH	5	574147	0	C-G	1	32612	0.4058	0.1906	0.405	0.1658	0.2367	0.002	0.2772	0.0017	0.2779	-0.2196	-0.1268	-0.0338
MATH	5	706353	0	C-G	2	32586	0.4457	0.1372	0.3127	0.4444	0.103	0.0028	0.3996	-0.2238	-0.1675	0.4006	-0.1379	-0.0476
MATH	5	715770	0	C-G	1	32638	0.8246	0.0611	0.8236	0.0567	0.0574	0.0012	0.3554	-0.2032	0.3564	-0.1538	-0.2171	-0.0313
MATH	5	715773	0	C-G	2	32647	0.8446	0.0189	0.8439	0.0715	0.0648	0.0009	0.4531	-0.1524	0.4529	-0.297	-0.2704	-0.0176
MATH	5	497786	0	D-M	2	32609	0.3262	0.269	0.3255	0.2297	0.1737	0.0021	0.4606	-0.2584	0.4604	-0.2279	-0.0118	-0.0173
MATH	5	566040	0	D-M	2	32590	0.2586	0.1821	0.2686	0.2887	0.2579	0.0027	0.3407	-0.0213	-0.0888	-0.2199	0.3412	-0.0403
MATH	5	715777	0	D-M	1	32576	0.588	0.5862	0.2131	0.1252	0.0724	0.0031	0.5475	0.5485	-0.2924	-0.2494	-0.2516	-0.0481
MATH	5	715909	0	D-M	2	32637	0.724	0.0499	0.1037	0.1221	0.7231	0.0012	0.4413	-0.2506	-0.247	-0.2043	0.4416	-0.0251
MATH	5	715913	0	D-M	1	32616	0.7677	0.0263	0.173	0.7663	0.0325	0.0019	0.4998	-0.1673	-0.4254	0.5006	-0.1273	-0.0367
MATH	5	715915	0	D-M	2	32633	0.5172	0.1309	0.2674	0.5165	0.0839	0.0013	0.5274	-0.3273	-0.2583	0.5276	-0.1366	-0.0292
MATH	5	408598	1	A-F	1	8186	0.313	0.1288	0.4419	0.1153	0.3125	0.0015	0.4995	-0.149	-0.2255	-0.2156	0.4997	-0.0231
MATH	5	662459	1	A-F	2	8185	0.3425	0.1631	0.3419	0.3115	0.1819	0.0016	0.3327	-0.0639	0.3332	-0.1277	-0.192	-0.0316
MATH	5	709943	1	A-T	2	8186	0.6416	0.0856	0.6406	0.1742	0.0981	0.0015	0.4349	-0.1624	0.4347	-0.2698	-0.203	-0.0115
MATH	5	743934	1	A-T	1	8072	0.5747	0.1278	0.1578	0.5659	0.1331	0.0154	0.4077	-0.1674	-0.1931	0.4114	-0.2018	-0.0738
MATH	5	300524	1	B-O	2	8180	0.4504	0.2147	0.2251	0.4494	0.1087	0.0022	0.4552	-0.2402	-0.1369	0.4557	-0.2238	-0.0258
MATH	5	737099	1	C-G	2	8174	0.3897	0.3885	0.3434	0.0886	0.1766	0.0029	0.2246	0.2255	-0.0125	-0.0925	-0.1989	-0.0341
MATH	5	657756	1	D-M	1	8173	0.2108	0.2302	0.2495	0.2102	0.3071	0.003	-0.0236	-0.1222	-0.1349	-0.0226	0.2621	-0.035
MATH	5	743951	1	D-M	1	8176	0.6048	0.2427	0.0847	0.0667	0.6032	0.0027	0.5293	-0.3713	-0.2003	-0.1712	0.529	-0.0214
MATH	5	662452	2	A-F	2	3012	0.6139	0.124	0.1645	0.6131	0.0971	0.0013	0.4832	-0.342	-0.2466	0.4841	-0.1021	-0.0382
MATH	5	737321	2	A-F	1	2991	0.3591	0.3561	0.1512	0.2129	0.2716	0.0083	0.4897	0.4899	-0.1841	-0.1063	-0.2706	-0.0528
MATH	5	743939	2	A-F	2	3011	0.721	0.7198	0.1028	0.1094	0.0663	0.0017	0.5382	0.5375	-0.3039	-0.2951	-0.227	-0.0115
MATH	5	314903	2	A-T	1	3011	0.6725	0.6714	0.0985	0.1671	0.0613	0.0017	0.443	0.4416	-0.2044	-0.2361	-0.2437	0.0004
MATH	5	711448	2	B-O	2	3013	0.5636	0.0786	0.2331	0.563	0.1243	0.001	0.3851	-0.2123	-0.1874	0.3846	-0.1654	0.0053
MATH	5	737098	2	C-G	1	3014	0.7452	0.0461	0.1727	0.0358	0.7447	0.0007	0.4747	-0.2322	-0.309	-0.2217	0.4746	-0.0094
MATH	5	740965	2	C-G	2	3013	0.4929	0.1164	0.4924	0.1472	0.243	0.001	0.4438	-0.1651	0.4442	-0.2629	-0.1755	-0.0235
MATH	5	740999	2	D-M	1	3010	0.5159	0.0494	0.1257	0.308	0.5149	0.002	0.5612	-0.1308	-0.3132	-0.317	0.5622	-0.0543
MATH	5	408579	3	A-F	1	3018	0.607	0.0936	0.1306	0.1679	0.6056	0.0023	0.5283	-0.239	-0.2306	-0.295	0.5269	0.0015
MATH	5	740958	3	A-F	2	3022	0.4193	0.163	0.2896	0.4188	0.1276	0.001	0.3213	-0.0927	-0.2048	0.3218	-0.0922	-0.0274

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	5	743935	3	A-F	1	2993	0.6916	0.0433	0.1223	0.1395	0.6843	0.0106	0.3477	-0.1213	-0.1679	-0.2215	0.3525	-0.0723
MATH	5	314500	3	A-T	1	3021	0.8626	0.0245	0.0863	0.8615	0.0264	0.0013	0.4073	-0.1692	-0.3066	0.4044	-0.1733	0.01
MATH	5	737325	3	A-T	2	3019	0.4455	0.4446	0.162	0.2767	0.1147	0.002	0.2966	0.2974	-0.2031	-0.0589	-0.1416	-0.0327
MATH	5	743943	3	B-O	2	3023	0.2808	0.204	0.3686	0.1461	0.2807	0.0007	0.3584	-0.2501	-0.0924	-0.0433	0.3585	-0.0153
MATH	5	653732	3	C-G	2	3017	0.4736	0.2063	0.4724	0.1821	0.1365	0.0026	0.3518	-0.0491	0.3518	-0.2579	-0.1599	-0.026
MATH	5	743949	3	D-M	2	3022	0.5139	0.1355	0.2648	0.5134	0.0853	0.001	0.4783	-0.2334	-0.2526	0.4787	-0.1683	-0.0274
MATH	5	303073	4	A-F	2	3078	0.6118	0.0652	0.2267	0.6108	0.0957	0.0016	0.5466	-0.1914	-0.3759	0.5474	-0.206	-0.0418
MATH	5	711368	4	A-F	1	3079	0.5817	0.1476	0.1657	0.1044	0.5809	0.0013	0.5275	-0.184	-0.3301	-0.2359	0.5262	0.0147
MATH	5	709945	4	A-T	1	3080	0.7104	0.1252	0.1174	0.7097	0.0467	0.001	0.4816	-0.2485	-0.2947	0.4821	-0.193	-0.032
MATH	5	737317	4	A-T	1	3046	0.7554	0.0584	0.0921	0.0911	0.7464	0.012	0.4911	-0.2706	-0.2507	-0.2445	0.4909	-0.0669
MATH	5	740959	4	B-O	2	3077	0.3373	0.1589	0.3983	0.1041	0.3367	0.0019	0.4606	-0.3038	-0.0881	-0.2031	0.4607	-0.0338
MATH	5	740960	4	B-O	2	3079	0.5602	0.0928	0.5595	0.2637	0.0827	0.0013	0.2726	-0.2768	0.2731	-0.0363	-0.1396	-0.0232
MATH	5	303009	4	C-G	2	3081	0.4726	0.4723	0.1528	0.2679	0.1064	0.0006	0.3176	0.3181	-0.1086	-0.1541	-0.164	-0.0339
MATH	5	303022	4	D-M	2	3076	0.406	0.132	0.2306	0.23	0.4051	0.0023	0.5612	-0.2437	-0.272	-0.1845	0.5611	-0.0148
MATH	5	743937	5	A-F	2	3054	0.6618	0.1302	0.6609	0.1324	0.0752	0.0013	0.4591	-0.1857	0.4587	-0.2358	-0.2823	-0.0081
MATH	5	743940	5	A-F	1	3032	0.4278	0.1736	0.1658	0.2279	0.4241	0.0085	0.3577	-0.2253	-0.2757	0.043	0.3621	-0.0992
MATH	5	301877	5	A-T	1	3050	0.8367	0.033	0.0595	0.0703	0.8345	0.0026	0.4205	-0.1853	-0.2387	-0.254	0.4218	-0.0431
MATH	5	622921	5	A-T	2	3054	0.1526	0.1524	0.2142	0.4307	0.2014	0.0013	0.1391	0.1394	-0.1193	-0.0086	0.0099	-0.0238
MATH	5	653730	5	B-O	1	3052	0.8001	0.1481	0.0258	0.7986	0.0255	0.002	0.1657	-0.0652	-0.1358	0.1667	-0.1347	-0.0201
MATH	5	313326	5	C-G	1	3056	0.7628	0.7623	0.0612	0.0445	0.1315	0.0007	0.4564	0.4574	-0.2907	-0.2409	-0.22	-0.042
MATH	5	408825	5	D-M	1	3054	0.5341	0.1916	0.5334	0.0831	0.1906	0.0013	0.3426	-0.3184	0.343	-0.2209	0.0404	-0.0197
MATH	5	741000	5	D-M	2	3055	0.3748	0.1236	0.1684	0.3326	0.3744	0.001	0.1222	-0.0875	-0.1534	0.0588	0.1228	-0.0309
MATH	5	662449	6	A-F	2	3103	0.5343	0.0567	0.2853	0.1233	0.5338	0.001	0.5356	-0.1292	-0.4303	-0.1284	0.5361	-0.0336
MATH	5	710023	6	A-F	1	3100	0.7065	0.0551	0.7051	0.1829	0.0551	0.0019	0.4065	-0.2137	0.4075	-0.2786	-0.1211	-0.0409
MATH	5	743938	6	A-F	1	3075	0.3808	0.0612	0.377	0.4675	0.0844	0.01	0.5111	-0.1275	0.5107	-0.3668	-0.0976	-0.0688
MATH	5	314762	6	A-T	2	3100	0.62	0.6188	0.2073	0.1156	0.0563	0.0019	0.4892	0.488	-0.2328	-0.2752	-0.2365	-0.0016
MATH	5	314767	6	B-O	2	3096	0.7206	0.1233	0.076	0.7183	0.0792	0.0032	0.4937	-0.2446	-0.2796	0.4951	-0.2422	-0.05
MATH	5	737096	6	B-O	1	3102	0.538	0.5373	0.1165	0.3014	0.0435	0.0013	0.2927	0.2934	-0.3222	-0.014	-0.1742	-0.0255
MATH	5	743945	6	C-G	1	3105	0.7977	0.1777	0.7975	0.0184	0.0061	0.0003	0.3717	-0.3036	0.372	-0.1824	-0.1114	-0.0156

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	5	653735	6	D-M	2	3103	0.1589	0.1597	0.4549	0.2257	0.1587	0.001	0.1471	-0.1438	0.1081	-0.1303	0.1472	-0.0157
MATH	5	301853	7	A-F	1	3099	0.7254	0.1029	0.1312	0.7249	0.0403	0.0006	0.4822	-0.2518	-0.304	0.482	-0.1827	-0.0056
MATH	5	662451	7	A-F	2	3095	0.1635	0.4147	0.2199	0.2003	0.1632	0.0019	0.1546	0.0313	-0.1194	-0.0534	0.1552	-0.0441
MATH	5	709858	7	A-T	2	3094	0.6719	0.0722	0.1087	0.6704	0.1464	0.0023	0.5191	-0.1987	-0.2306	0.5194	-0.3382	-0.0288
MATH	5	737318	7	A-T	1	3070	0.6762	0.0887	0.6695	0.1561	0.0758	0.01	0.4474	-0.0769	0.4524	-0.2831	-0.3005	-0.0873
MATH	5	737324	7	A-T	1	3097	0.4172	0.4166	0.2593	0.1683	0.1545	0.0013	0.4687	0.4687	-0.232	-0.2412	-0.1063	-0.0209
MATH	5	743941	7	B-O	2	3094	0.3087	0.2467	0.2996	0.1435	0.308	0.0023	0.4096	-0.2232	-0.024	-0.2318	0.4092	-0.0086
MATH	5	765982	7	C-G	2	3097	0.248	0.2477	0.4653	0.1625	0.1232	0.0013	0.1655	0.1657	0.1379	-0.2213	-0.1773	-0.012
MATH	5	394394	7	D-M	2	3095	0.6165	0.0929	0.6153	0.1574	0.1325	0.0019	0.475	-0.0768	0.4746	-0.3109	-0.2798	-0.011
MATH	5	737320	8	A-F	1	2999	0.4125	0.0705	0.4057	0.1892	0.3181	0.0164	0.5276	-0.1281	0.5264	-0.0911	-0.3897	-0.0667
MATH	5	738188	8	A-F	2	3041	0.3265	0.3257	0.3231	0.288	0.0607	0.0026	0.119	0.1205	-0.1252	0.0804	-0.1327	-0.0519
MATH	5	408631	8	A-T	1	3044	0.7622	0.0216	0.0649	0.7609	0.1509	0.0016	0.3606	-0.1081	-0.2026	0.3622	-0.2432	-0.0446
MATH	5	738186	8	A-T	2	3046	0.6707	0.6701	0.0849	0.0863	0.1578	0.001	0.5385	0.5392	-0.2671	-0.2538	-0.2922	-0.0405
MATH	5	737097	8	B-O	2	3039	0.5591	0.2316	0.5572	0.1486	0.0594	0.0033	0.4949	-0.2039	0.4946	-0.2769	-0.2518	-0.0302
MATH	5	740963	8	C-G	2	3044	0.4143	0.2168	0.1089	0.2591	0.4136	0.0016	0.4383	-0.1975	-0.2015	-0.1585	0.4393	-0.0676
MATH	5	740998	8	C-G	2	3045	0.4125	0.1922	0.2358	0.4119	0.1587	0.0013	0.186	-0.0768	-0.0511	0.1867	-0.106	-0.0338
MATH	5	741003	8	D-M	2	3044	0.4258	0.0856	0.2542	0.2335	0.4251	0.0016	0.527	-0.1821	-0.3412	-0.1402	0.527	-0.0424
MATH	5	300474	9	A-F	1	3040	0.6951	0.0917	0.0691	0.144	0.6948	0.0003	0.4853	-0.1339	-0.2895	-0.3169	0.4854	-0.0096
MATH	5	653729	9	A-T	2	3039	0.3429	0.2354	0.3427	0.3124	0.1088	0.0007	0.1863	-0.1191	0.1865	0.0213	-0.1524	-0.0147
MATH	5	659941	9	A-T	2	3039	0.4682	0.1033	0.2828	0.1453	0.4679	0.0007	0.5206	-0.2317	-0.325	-0.1203	0.5207	-0.0206
MATH	5	737319	9	A-T	1	3022	0.7273	0.7228	0.095	0.1049	0.071	0.0062	0.4552	0.4593	-0.2111	-0.3408	-0.1295	-0.0761
MATH	5	743942	9	B-O	2	3037	0.3912	0.3907	0.3939	0.1029	0.1111	0.0013	0.376	0.3761	-0.1601	-0.1258	-0.2115	-0.015
MATH	5	740962	9	C-G	2	3039	0.3682	0.0934	0.4666	0.368	0.0714	0.0007	0.3433	-0.2205	-0.1541	0.3432	-0.0948	-0.003
MATH	5	314506	9	D-M	1	3039	0.7002	0.0924	0.1549	0.6998	0.0523	0.0007	0.5455	-0.293	-0.315	0.5453	-0.2289	-0.0065
MATH	5	743950	9	D-M	2	3035	0.5028	0.1516	0.5018	0.2006	0.144	0.002	0.3976	-0.2097	0.3984	-0.2417	-0.0728	-0.037
MATH	6	412555	0	A-N	2	39053	0.6731	0.6721	0.0955	0.1244	0.1066	0.0016	0.5083	0.5087	-0.2633	-0.3052	-0.1933	-0.0274
MATH	6	479690	0	A-N	1	38873	0.7433	0.7388	0.1641	0.0598	0.0312	0.0062	0.4933	0.4955	-0.3756	-0.1729	-0.1878	-0.0627
MATH	6	491046	0	A-N	1	38830	0.5827	0.2428	0.1281	0.5784	0.0433	0.0073	0.5221	-0.349	-0.2036	0.5235	-0.1753	-0.0603
MATH	6	574777	0	A-N	2	38985	0.4363	0.0953	0.4349	0.2903	0.1762	0.0033	0.408	-0.1453	0.4087	-0.3013	-0.0549	-0.0392

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	6	575149	0	A-N	2	38954	0.4107	0.087	0.409	0.1427	0.3572	0.0041	0.3595	-0.108	0.3609	-0.2018	-0.1528	-0.0506
MATH	6	617644	0	A-N	1	38866	0.6422	0.1575	0.6381	0.1646	0.0335	0.0063	0.4187	-0.3167	0.4207	-0.1475	-0.1548	-0.0537
MATH	6	652192	0	A-N	1	39022	0.443	0.2092	0.1479	0.1987	0.4419	0.0024	0.4869	-0.1694	-0.2519	-0.2057	0.4873	-0.0323
MATH	6	312500	0	A-R	2	39017	0.4922	0.1627	0.2707	0.491	0.0732	0.0025	0.492	-0.0806	-0.3411	0.4926	-0.2422	-0.0375
MATH	6	412895	0	A-R	2	39017	0.5166	0.2443	0.5154	0.1589	0.0789	0.0025	0.5327	-0.26	0.5333	-0.2567	-0.2188	-0.0391
MATH	6	478716	0	A-R	2	39006	0.5469	0.0467	0.1002	0.5454	0.3049	0.0028	0.4375	-0.203	-0.2847	0.4385	-0.1909	-0.04
MATH	6	575151	0	A-R	1	39034	0.7828	0.059	0.7812	0.1048	0.053	0.002	0.3828	-0.1856	0.3828	-0.2522	-0.1622	-0.0209
MATH	6	614778	0	A-R	1	39049	0.848	0.8466	0.0437	0.0485	0.0595	0.0017	0.4194	0.4198	-0.246	-0.253	-0.1923	-0.0285
MATH	6	622370	0	A-R	1	38997	0.4411	0.151	0.1941	0.212	0.4398	0.003	0.5468	-0.1125	-0.2534	-0.3158	0.5471	-0.0367
MATH	6	653194	0	A-R	1	39006	0.6012	0.5995	0.0815	0.1189	0.1973	0.0028	0.4075	0.4087	-0.2098	-0.2046	-0.187	-0.0415
MATH	6	657501	0	A-R	2	38997	0.4624	0.2182	0.1011	0.2166	0.4611	0.003	0.5085	-0.0776	-0.2679	-0.3366	0.5091	-0.0427
MATH	6	711379	0	A-R	2	39022	0.4347	0.2756	0.1428	0.1455	0.4337	0.0024	0.4473	-0.1676	-0.3013	-0.1142	0.4474	-0.0244
MATH	6	490026	0	B-E	2	39005	0.3866	0.3855	0.2556	0.2074	0.1487	0.0028	0.4841	0.4843	-0.2473	-0.1628	-0.169	-0.0325
MATH	6	574784	0	B-E	2	39031	0.3326	0.1743	0.3319	0.2924	0.1993	0.0021	0.3295	-0.0428	0.3299	-0.2759	-0.0308	-0.0282
MATH	6	624649	0	B-E	2	39019	0.2744	0.2737	0.2531	0.3003	0.1705	0.0024	0.3759	0.3758	-0.0157	-0.206	-0.1739	-0.0187
MATH	6	654994	0	B-E	1	39039	0.6017	0.1214	0.1535	0.6006	0.1226	0.0019	0.4918	-0.149	-0.206	0.4925	-0.3558	-0.0365
MATH	6	657503	0	B-E	1	39005	0.5724	0.0518	0.3155	0.5708	0.0591	0.0028	0.4391	-0.1855	-0.2831	0.4399	-0.1826	-0.0375
MATH	6	657504	0	B-E	2	39002	0.5378	0.5362	0.1674	0.176	0.1174	0.0029	0.5096	0.5099	-0.2675	-0.222	-0.2117	-0.0328
MATH	6	663836	0	B-E	2	39013	0.7072	0.1088	0.7054	0.0963	0.0869	0.0026	0.5082	-0.2055	0.5094	-0.2796	-0.2962	-0.0455
MATH	6	706361	0	B-E	1	39050	0.5436	0.5427	0.1742	0.1572	0.1243	0.0016	0.6083	0.6083	-0.2729	-0.3211	-0.2476	-0.0244
MATH	6	711451	0	B-E	2	39015	0.4814	0.1498	0.1897	0.1778	0.4802	0.0025	0.6121	-0.2389	-0.2865	-0.2796	0.612	-0.0249
MATH	6	713650	0	B-E	2	39027	0.551	0.1608	0.1538	0.5497	0.1335	0.0022	0.5523	-0.2735	-0.351	0.5528	-0.1361	-0.0349
MATH	6	496953	0	C-G	1	39033	0.5468	0.5457	0.1807	0.2051	0.0664	0.0021	0.6314	0.6313	-0.3482	-0.326	-0.1904	-0.0289
MATH	6	574849	0	C-G	1	39060	0.4531	0.4525	0.2903	0.1656	0.0902	0.0014	0.4807	0.4812	-0.2684	-0.1853	-0.1657	-0.035
MATH	6	614784	0	C-G	1	39076	0.6295	0.1027	0.6289	0.1464	0.121	0.001	0.3825	-0.186	0.3826	-0.2678	-0.1018	-0.0169
MATH	6	654782	0	C-G	1	39039	0.5315	0.1308	0.1344	0.2024	0.5305	0.0019	0.6133	-0.2922	-0.2079	-0.3367	0.6135	-0.0333
MATH	6	663839	0	C-G	1	39041	0.9454	0.0115	0.9436	0.014	0.029	0.0019	0.2494	-0.1094	0.251	-0.135	-0.1724	-0.0332
MATH	6	713400	0	C-G	1	39016	0.3755	0.1022	0.1432	0.3775	0.3745	0.0025	0.609	-0.2685	-0.2253	-0.2743	0.6091	-0.0314
MATH	6	715778	0	C-G	2	39030	0.5351	0.2854	0.534	0.0924	0.0861	0.0021	0.6204	-0.4663	0.6208	-0.1949	-0.1455	-0.0402

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	6	715779	0	C-G	1	39038	0.6885	0.0788	0.1326	0.6871	0.0996	0.0019	0.4824	-0.248	-0.3505	0.483	-0.123	-0.0335
MATH	6	413106	0	D-S	2	38982	0.3632	0.185	0.362	0.3588	0.0908	0.0034	0.3211	-0.0922	0.3219	-0.1284	-0.1918	-0.0378
MATH	6	500237	0	D-S	2	39025	0.5489	0.2862	0.108	0.5477	0.0558	0.0023	0.458	-0.1997	-0.2926	0.4584	-0.1988	-0.0306
MATH	6	622368	0	D-S	2	39016	0.3288	0.3279	0.2639	0.2457	0.16	0.0025	0.3137	0.3143	-0.1938	-0.0448	-0.1122	-0.0345
MATH	6	624654	0	D-S	2	39029	0.5678	0.1756	0.1063	0.5666	0.1493	0.0022	0.4359	-0.2515	-0.134	0.4363	-0.2184	-0.0288
MATH	6	654998	0	D-S	2	38981	0.4832	0.1467	0.2524	0.116	0.4815	0.0034	0.4489	-0.2369	-0.2132	-0.1428	0.4497	-0.0435
MATH	6	663840	0	D-S	2	38991	0.5225	0.0957	0.1685	0.5209	0.2118	0.0031	0.2672	-0.1397	-0.1363	0.2684	-0.098	-0.0341
MATH	6	738179	1	A-N	1	9075	0.5152	0.1484	0.1523	0.5091	0.1784	0.0118	0.3453	-0.0049	-0.2079	0.349	-0.2378	-0.0652
MATH	6	624473	1	A-R	2	9164	0.3126	0.104	0.3681	0.312	0.2139	0.0021	0.243	-0.1465	-0.1298	0.2429	-0.0118	-0.0085
MATH	6	740936	1	A-R	2	9166	0.4069	0.143	0.4062	0.337	0.1119	0.0019	0.3189	-0.2597	0.3193	0.0432	-0.2703	-0.0247
MATH	6	740940	1	B-E	2	9154	0.4055	0.1723	0.2954	0.1249	0.4042	0.0032	0.541	-0.2111	-0.223	-0.2499	0.541	-0.0252
MATH	6	740942	1	B-E	2	9149	0.4789	0.4771	0.2073	0.2057	0.1062	0.0037	0.539	0.5394	-0.1928	-0.3208	-0.1939	-0.0304
MATH	6	745972	1	C-G	2	9169	0.3357	0.3352	0.2561	0.261	0.1461	0.0015	0.4863	0.4866	-0.0815	-0.2534	-0.2316	-0.0271
MATH	6	411365	1	D-S	1	9159	0.3567	0.3558	0.2706	0.2141	0.1569	0.0026	0.3976	0.3973	-0.1625	-0.1897	-0.1089	-0.0118
MATH	6	654783	1	D-S	2	9163	0.2901	0.117	0.2894	0.2113	0.3802	0.0022	0.1057	-0.1508	0.1063	-0.0922	0.0804	-0.0246
MATH	6	412894	2	A-N	1	3746	0.7811	0.0858	0.0901	0.0426	0.7799	0.0016	0.5185	-0.3035	-0.2922	-0.2231	0.5193	-0.0356
MATH	6	743919	2	A-N	1	3714	0.5027	0.093	0.1762	0.2231	0.4976	0.0101	0.5685	-0.1902	-0.2838	-0.2732	0.5705	-0.0816
MATH	6	745960	2	A-R	2	3751	0.366	0.0469	0.3659	0.0978	0.4891	0.0003	0.3481	-0.1852	0.3481	-0.2893	-0.0852	0.0017
MATH	6	413108	2	B-E	2	3745	0.5199	0.1383	0.2361	0.5189	0.1047	0.0019	0.3055	-0.0827	-0.1845	0.3062	-0.1463	-0.0291
MATH	6	745964	2	B-E	2	3747	0.368	0.1623	0.3521	0.1167	0.3675	0.0013	0.4168	-0.2112	-0.0873	-0.2495	0.4173	-0.041
MATH	6	740945	2	C-G	1	3746	0.5702	0.0299	0.1351	0.5693	0.2641	0.0016	0.5669	-0.1859	-0.4044	0.5673	-0.2489	-0.0315
MATH	6	740949	2	D-S	2	3746	0.3449	0.3443	0.2209	0.1804	0.2527	0.0016	0.5334	0.5339	-0.0882	-0.2611	-0.2642	-0.0465
MATH	6	745975	2	D-S	2	3745	0.518	0.5171	0.1978	0.1061	0.1772	0.0019	0.4344	0.4345	-0.1925	-0.1982	-0.2055	-0.0216
MATH	6	269606	3	A-N	2	3703	0.3473	0.0425	0.2469	0.3613	0.3463	0.003	0.357	-0.1653	-0.2305	-0.0733	0.3575	-0.0387
MATH	6	738177	3	A-N	1	3677	0.4438	0.4394	0.1427	0.2302	0.1777	0.01	0.4535	0.4543	-0.1614	-0.2481	-0.1531	-0.0611
MATH	6	711374	3	A-R	1	3709	0.5748	0.0942	0.2886	0.574	0.0417	0.0013	0.4837	-0.3079	-0.2384	0.4846	-0.2003	-0.0436
MATH	6	300400	3	B-E	2	3709	0.4672	0.4666	0.2184	0.1478	0.1659	0.0013	0.3922	0.3923	-0.2395	-0.2495	-0.0194	-0.0275
MATH	6	711450	3	B-E	1	3706	0.3276	0.395	0.1489	0.1271	0.3269	0.0022	0.1036	0.1199	-0.0385	-0.2786	0.104	-0.0197
MATH	6	745970	3	C-G	2	3706	0.4978	0.1306	0.4968	0.2359	0.1346	0.0022	0.5203	-0.3196	0.5201	-0.152	-0.254	-0.0248

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	6	622371	3	D-S	2	3707	0.44	0.1298	0.1424	0.2868	0.4391	0.0019	0.4764	-0.1396	-0.2331	-0.2372	0.4761	-0.0153
MATH	6	745977	3	D-S	1	3707	0.6296	0.1064	0.2049	0.6284	0.0584	0.0019	0.5135	-0.2472	-0.2887	0.5136	-0.2318	-0.0245
MATH	6	709921	4	A-N	2	3703	0.785	0.0699	0.7842	0.0836	0.0612	0.0011	0.4893	-0.2267	0.4895	-0.2981	-0.2514	-0.0238
MATH	6	743923	4	A-N	1	3676	0.5403	0.0879	0.2128	0.5357	0.1551	0.0084	0.4343	-0.2188	-0.3224	0.4353	-0.0515	-0.0497
MATH	6	736747	4	A-R	2	3698	0.6804	0.1084	0.0963	0.6787	0.1141	0.0024	0.4908	-0.2489	-0.2563	0.4929	-0.2332	-0.0618
MATH	6	740938	4	A-R	2	3701	0.5571	0.1066	0.0696	0.266	0.5562	0.0016	0.5371	-0.3276	-0.2049	-0.2549	0.5363	-0.0147
MATH	6	624650	4	B-E	2	3704	0.4592	0.1441	0.4589	0.2458	0.1505	0.0008	0.3956	-0.178	0.396	-0.228	-0.0999	-0.0332
MATH	6	740947	4	C-G	2	3695	0.5978	0.1387	0.5959	0.1508	0.1114	0.0032	0.3734	-0.2045	0.3752	-0.2544	-0.0613	-0.0547
MATH	6	301841	4	D-S	2	3699	0.3171	0.3062	0.2136	0.3164	0.1616	0.0022	0.2656	0.0145	-0.1935	0.2661	-0.1351	-0.0296
MATH	6	740951	4	D-S	2	3701	0.4102	0.4095	0.2223	0.2708	0.0958	0.0016	0.3036	0.3049	-0.2333	-0.0172	-0.1451	-0.0632
MATH	6	411367	5	A-N	1	3728	0.4445	0.1223	0.4444	0.3451	0.088	0.0003	0.4179	-0.0825	0.4181	-0.2486	-0.2188	-0.034
MATH	6	738180	5	A-N	1	3695	0.3778	0.1295	0.3065	0.1805	0.3744	0.0091	0.3824	-0.0999	-0.3563	0.0455	0.3834	-0.055
MATH	6	401964	5	A-R	1	3721	0.4085	0.1132	0.4076	0.4543	0.0228	0.0021	0.3454	-0.118	0.3465	-0.2159	-0.1542	-0.0507
MATH	6	745962	5	B-E	1	3725	0.8392	0.0177	0.1062	0.0367	0.8383	0.0011	0.4775	-0.1836	-0.3545	-0.2208	0.4783	-0.0351
MATH	6	745967	5	B-E	2	3722	0.5672	0.1228	0.0904	0.5661	0.2188	0.0019	0.3214	-0.1806	-0.2537	0.3215	-0.0644	-0.017
MATH	6	413110	5	C-G	2	3725	0.3042	0.2794	0.3038	0.221	0.1947	0.0011	0.1606	0.0569	0.1611	-0.134	-0.1086	-0.0323
MATH	6	740950	5	D-S	2	3723	0.412	0.1392	0.336	0.1118	0.4114	0.0016	0.3367	-0.1128	-0.1446	-0.1817	0.3374	-0.0354
MATH	6	745979	5	D-S	2	3720	0.3707	0.3698	0.2794	0.2411	0.1073	0.0024	0.4047	0.4049	-0.1746	-0.1782	-0.127	-0.0329
MATH	6	411364	6	A-N	1	3755	0.5819	0.3208	0.0495	0.0474	0.5813	0.0011	0.379	-0.1853	-0.2416	-0.2235	0.3791	-0.0206
MATH	6	743924	6	A-N	1	3732	0.8138	0.0476	0.8079	0.0976	0.0396	0.0072	0.4555	-0.1956	0.4596	-0.3222	-0.1918	-0.0751
MATH	6	710027	6	A-R	2	3753	0.8249	0.0979	0.0423	0.8236	0.0346	0.0016	0.3678	-0.1839	-0.2315	0.3688	-0.2084	-0.0304
MATH	6	300481	6	B-E	2	3756	0.5314	0.1524	0.531	0.1562	0.1596	0.0008	0.3315	-0.1825	0.3322	-0.1074	-0.1644	-0.0338
MATH	6	314874	6	B-E	2	3753	0.6123	0.0564	0.2501	0.6113	0.0806	0.0016	0.2267	-0.1217	-0.1046	0.2284	-0.1329	-0.0443
MATH	6	745965	6	B-E	2	3754	0.6004	0.0875	0.5996	0.1742	0.1373	0.0013	0.4817	-0.2271	0.4812	-0.2236	-0.2514	-0.0068
MATH	6	715782	6	C-G	1	3757	0.4778	0.099	0.3615	0.0615	0.4775	0.0005	0.6455	-0.1885	-0.4799	-0.1458	0.6458	-0.0296
MATH	6	713405	6	D-S	2	3755	0.2799	0.2796	0.4554	0.1516	0.1123	0.0011	0.2281	0.2281	0.1022	-0.3016	-0.1421	-0.0071
MATH	6	617213	7	A-N	1	3700	0.5854	0.1788	0.1531	0.5807	0.0794	0.008	0.4909	-0.2371	-0.2718	0.4947	-0.1746	-0.0919
MATH	6	412072	7	A-R	2	3726	0.3736	0.141	0.3732	0.3405	0.1442	0.0011	0.3513	-0.101	0.3518	-0.118	-0.2218	-0.0362
MATH	6	622366	7	B-E	2	3725	0.2838	0.2635	0.2177	0.2834	0.234	0.0013	0.0829	0.0651	-0.0801	0.0832	-0.0768	-0.0163

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	6	713651	7	B-E	2	3722	0.4027	0.4019	0.1563	0.2815	0.1582	0.0021	0.4717	0.4717	-0.1269	-0.3404	-0.085	-0.0231
MATH	6	746037	7	B-E	1	3719	0.4899	0.0836	0.3633	0.4885	0.0617	0.0029	0.3784	-0.2327	-0.1339	0.3789	-0.2452	-0.0288
MATH	6	654781	7	C-G	1	3720	0.6626	0.6609	0.0979	0.1115	0.1271	0.0027	0.5898	0.5901	-0.2889	-0.2368	-0.3511	-0.0393
MATH	6	740946	7	C-G	1	3727	0.6187	0.6182	0.0673	0.1102	0.2035	0.0008	0.5219	0.5223	-0.2368	-0.2322	-0.3003	-0.0281
MATH	6	745976	7	D-S	2	3724	0.6243	0.0424	0.1072	0.2255	0.6233	0.0016	0.471	-0.2004	-0.2827	-0.238	0.4715	-0.0293
MATH	6	738178	8	A-N	1	3725	0.3643	0.2564	0.2058	0.3613	0.1683	0.0083	0.2901	-0.0715	-0.2003	0.2924	-0.0604	-0.0632
MATH	6	745961	8	A-R	2	3751	0.2685	0.3456	0.2681	0.11	0.275	0.0013	0.1718	0.2512	0.1725	-0.2405	-0.2669	-0.0413
MATH	6	711381	8	B-E	2	3749	0.0846	0.2173	0.6163	0.0801	0.0844	0.0019	-0.0068	-0.1261	0.2337	-0.2202	-0.0068	0.0004
MATH	6	713649	8	B-E	2	3749	0.5687	0.2279	0.5676	0.168	0.0346	0.0019	0.3505	-0.1003	0.3505	-0.2686	-0.166	-0.0179
MATH	6	740941	8	B-E	2	3750	0.3733	0.238	0.1605	0.3727	0.2271	0.0016	0.3127	-0.025	-0.2548	0.3133	-0.1098	-0.0329
MATH	6	713652	8	C-G	2	3752	0.3499	0.353	0.2133	0.3496	0.0831	0.0011	0.223	0.0585	-0.2332	0.2232	-0.1388	-0.0174
MATH	6	614776	8	D-S	2	3748	0.3052	0.3046	0.389	0.1531	0.1512	0.0021	0.3269	0.3259	-0.1373	-0.0841	-0.149	0.0131
MATH	6	740948	8	D-S	2	3750	0.4741	0.4734	0.2391	0.1462	0.1398	0.0016	0.4685	0.469	-0.2781	-0.1054	-0.2217	-0.0363
MATH	6	743922	9	A-N	1	3754	0.8202	0.0307	0.0869	0.0608	0.8137	0.0079	0.3816	-0.1794	-0.2153	-0.2207	0.3828	-0.0534
MATH	6	736746	9	A-R	2	3772	0.5321	0.1247	0.1829	0.1588	0.5304	0.0032	0.4964	-0.1706	-0.3194	-0.1822	0.4958	-0.0183
MATH	6	740937	9	A-R	1	3778	0.765	0.0827	0.1023	0.7637	0.0497	0.0016	0.4941	-0.2614	-0.294	0.495	-0.2197	-0.036
MATH	6	269609	9	B-E	2	3777	0.48	0.4791	0.1374	0.3227	0.0589	0.0018	0.5189	0.5184	-0.3154	-0.2011	-0.2355	-0.0211
MATH	6	745968	9	B-E	2	3774	0.4481	0.347	0.1139	0.4469	0.0896	0.0026	0.3342	-0.0562	-0.275	0.3342	-0.1784	-0.0208
MATH	6	412067	9	C-G	2	3782	0.3242	0.0579	0.1958	0.324	0.4218	0.0005	0.3046	-0.127	-0.309	0.3048	0.0204	-0.0181
MATH	6	417166	9	D-S	2	3772	0.3879	0.3866	0.1728	0.3282	0.1091	0.0032	0.4148	0.4151	-0.1422	-0.2023	-0.1657	-0.03
MATH	6	736795	9	D-S	2	3778	0.3923	0.2468	0.3916	0.199	0.1609	0.0016	0.2493	0.048	0.2497	-0.2359	-0.1289	-0.0257
MATH	7	319329	0	A-N	1	38939	0.2787	0.2767	0.3646	0.2057	0.1457	0.0072	0.2853	0.2869	-0.1403	-0.1326	-0.0066	-0.0577
MATH	7	335226	0	A-N	1	39076	0.6678	0.1637	0.6653	0.0446	0.1228	0.0037	0.4447	-0.3384	0.4462	-0.1854	-0.1348	-0.0468
MATH	7	477761	0	A-N	1	39133	0.7542	0.7525	0.0643	0.0941	0.0868	0.0023	0.5339	0.5338	-0.2379	-0.3001	-0.2948	-0.0293
MATH	7	565849	0	A-N	2	39084	0.441	0.2559	0.1786	0.4394	0.1225	0.0035	0.3372	-0.0417	-0.2432	0.338	-0.1659	-0.0348
MATH	7	615280	0	A-N	1	39125	0.5252	0.16	0.0844	0.2293	0.5239	0.0025	0.4928	-0.211	-0.2336	-0.2433	0.4935	-0.0391
MATH	7	659595	0	A-N	1	39116	0.362	0.1111	0.4482	0.361	0.0769	0.0027	0.4933	-0.1401	-0.3022	0.4933	-0.1548	-0.0267
MATH	7	709909	0	A-N	2	39116	0.6542	0.1626	0.6524	0.1177	0.0645	0.0027	0.4446	-0.2894	0.4458	-0.2037	-0.1534	-0.0412
MATH	7	711510	0	A-N	1	39136	0.5985	0.1707	0.1752	0.0547	0.5972	0.0022	0.568	-0.2922	-0.3079	-0.2222	0.5674	-0.0167

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	7	335233	0	A-R	2	39121	0.3891	0.3308	0.2093	0.3881	0.0692	0.0026	0.4367	-0.1923	-0.1966	0.4368	-0.162	-0.0248
MATH	7	413355	0	A-R	1	39112	0.4016	0.0599	0.4004	0.1709	0.3659	0.0028	0.4398	-0.1176	0.44	-0.2627	-0.1812	-0.0294
MATH	7	567230	0	A-R	2	39116	0.7036	0.7017	0.1125	0.1048	0.0783	0.0027	0.5611	0.5616	-0.2953	-0.3016	-0.2578	-0.0385
MATH	7	575220	0	A-R	2	39138	0.5257	0.2221	0.5245	0.1441	0.1071	0.0021	0.3833	-0.2039	0.3841	-0.2411	-0.0675	-0.0335
MATH	7	617919	0	A-R	2	39084	0.3509	0.3023	0.137	0.2075	0.3497	0.0035	0.4344	-0.0969	-0.2319	-0.1999	0.4348	-0.0343
MATH	7	617925	0	A-R	1	39108	0.4722	0.4709	0.1473	0.2416	0.1374	0.0029	0.4709	0.471	-0.1191	-0.2829	-0.2042	-0.0279
MATH	7	630491	0	A-R	2	39114	0.4251	0.2483	0.1855	0.424	0.1395	0.0028	0.2702	-0.0362	-0.1282	0.2707	-0.1934	-0.0249
MATH	7	709907	0	A-R	2	39111	0.4768	0.3151	0.4755	0.1588	0.0477	0.0028	0.4013	-0.2897	0.4022	-0.0986	-0.1319	-0.0397
MATH	7	711391	0	A-R	2	39103	0.3093	0.3084	0.2258	0.3061	0.1567	0.003	0.4862	0.4863	-0.1146	-0.2388	-0.1785	-0.0312
MATH	7	711514	0	A-R	2	39144	0.8451	0.8434	0.066	0.0549	0.0336	0.002	0.4404	0.4401	-0.2747	-0.2449	-0.1931	-0.0248
MATH	7	404813	0	B-E	2	39089	0.5455	0.1794	0.5436	0.1862	0.0874	0.0034	0.4921	-0.2748	0.4928	-0.2418	-0.1542	-0.0405
MATH	7	493996	0	B-E	2	39157	0.5999	0.0753	0.5989	0.2054	0.1187	0.0017	0.4464	-0.1049	0.4466	-0.2894	-0.2271	-0.0201
MATH	7	503046	0	B-E	1	39111	0.595	0.0699	0.1627	0.1713	0.5933	0.0028	0.5753	-0.251	-0.3136	-0.2685	0.5756	-0.0349
MATH	7	565851	0	B-E	2	39055	0.4889	0.4868	0.1717	0.1654	0.1718	0.0043	0.5613	0.562	-0.2715	-0.2906	-0.1791	-0.0456
MATH	7	617258	0	B-E	1	39024	0.5587	0.1885	0.177	0.5558	0.0736	0.005	0.5134	-0.3314	-0.2329	0.5142	-0.1287	-0.0485
MATH	7	711393	0	B-E	1	39070	0.3826	0.1794	0.2298	0.2058	0.3811	0.0039	0.4297	-0.1773	-0.1817	-0.1543	0.4298	-0.0302
MATH	7	711517	0	B-E	2	39046	0.3074	0.1545	0.2165	0.306	0.3185	0.0045	0.3516	-0.1514	-0.2377	0.3523	-0.0147	-0.0431
MATH	7	713657	0	B-E	2	39110	0.5558	0.0817	0.5543	0.2967	0.0644	0.0029	0.5818	-0.2234	0.5819	-0.364	-0.2441	-0.034
MATH	7	713660	0	B-E	2	39116	0.2995	0.2333	0.2123	0.253	0.2987	0.0027	0.2553	-0.1061	-0.1697	-0.0036	0.2556	-0.0216
MATH	7	496123	0	C-G	2	39063	0.3557	0.1343	0.1722	0.3542	0.3353	0.0041	0.293	0.0069	-0.2377	0.2941	-0.1071	-0.0425
MATH	7	567235	0	C-G	1	39103	0.4211	0.0986	0.1644	0.314	0.4199	0.003	0.4206	-0.2736	-0.239	-0.0766	0.4213	-0.0396
MATH	7	575224	0	C-G	2	39080	0.5192	0.1077	0.1864	0.5173	0.1849	0.0036	0.3607	-0.2014	-0.1379	0.3613	-0.161	-0.0318
MATH	7	576068	0	C-G	2	39108	0.5856	0.1232	0.1715	0.5839	0.1186	0.0029	0.3703	-0.1243	-0.2368	0.3712	-0.1577	-0.0352
MATH	7	613069	0	C-G	2	39120	0.4289	0.3901	0.4278	0.1115	0.068	0.0026	0.3693	-0.2143	0.3699	-0.1989	-0.0562	-0.034
MATH	7	706370	0	C-G	2	39154	0.6617	0.124	0.1447	0.6605	0.069	0.0017	0.5934	-0.3212	-0.3827	0.5938	-0.1551	-0.0325
MATH	7	709902	0	C-G	1	39153	0.5431	0.2862	0.1514	0.5421	0.0185	0.0018	0.5262	-0.34	-0.2525	0.5265	-0.1256	-0.0292
MATH	7	709903	0	C-G	1	39111	0.3688	0.1556	0.153	0.3209	0.3678	0.0028	0.4104	-0.1617	-0.2841	-0.0758	0.4109	-0.0354
MATH	7	715806	0	C-G	2	39131	0.4819	0.2996	0.1715	0.4808	0.0458	0.0023	0.458	-0.2435	-0.2588	0.4582	-0.0883	-0.0285
MATH	7	399256	0	D-S	2	39100	0.3812	0.38	0.2521	0.2656	0.0992	0.0031	0.5356	0.5358	-0.2201	-0.2498	-0.1749	-0.0342

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	7	480396	0	D-S	1	39157	0.6721	0.0956	0.671	0.1017	0.1301	0.0017	0.4219	-0.1326	0.4219	-0.2751	-0.2243	-0.0165
MATH	7	500379	0	D-S	2	39137	0.5502	0.2104	0.549	0.1249	0.1135	0.0022	0.4275	-0.1628	0.4281	-0.2827	-0.1629	-0.033
MATH	7	713416	0	D-S	1	39122	0.4674	0.4662	0.2791	0.1934	0.0586	0.0025	0.5497	0.55	-0.2346	-0.3217	-0.1714	-0.0357
MATH	7	745983	1	A-N	2	8385	0.5449	0.5385	0.1988	0.1086	0.1424	0.0117	0.3448	0.3492	-0.1179	-0.1954	-0.1686	-0.0681
MATH	7	401995	1	A-R	2	8451	0.334	0.1872	0.3327	0.3505	0.1256	0.0039	0.2389	-0.0171	0.2394	-0.0502	-0.2435	-0.0237
MATH	7	740972	1	A-R	2	8465	0.3583	0.1379	0.2845	0.2178	0.3575	0.0022	0.4449	-0.1764	-0.2283	-0.1176	0.4449	-0.0179
MATH	7	296709	1	B-E	2	8464	0.3366	0.3358	0.3194	0.2106	0.1318	0.0024	0.2357	0.2355	-0.0911	-0.1583	-0.0112	-0.0082
MATH	7	655930	1	B-E	2	8468	0.445	0.2469	0.4441	0.1888	0.1182	0.0019	0.3596	-0.189	0.36	-0.1305	-0.1406	-0.0213
MATH	7	658386	1	C-G	2	8463	0.37	0.1587	0.2348	0.369	0.235	0.0025	0.0989	-0.0368	-0.0042	0.1001	-0.0737	-0.0363
MATH	7	737109	1	C-G	2	8447	0.4165	0.0433	0.3238	0.4147	0.2139	0.0044	0.2083	-0.007	-0.1069	0.209	-0.1217	-0.0248
MATH	7	706374	1	D-S	1	8463	0.5435	0.1169	0.5422	0.1455	0.193	0.0025	0.2156	-0.0772	0.2167	-0.0983	-0.1191	-0.0302
MATH	7	737103	2	A-N	2	3826	0.7206	0.067	0.0934	0.7155	0.1171	0.007	0.4022	-0.1778	-0.2162	0.4018	-0.2207	-0.0357
MATH	7	632641	2	A-R	2	3847	0.8919	0.0197	0.0548	0.8905	0.0335	0.0016	0.3511	-0.1392	-0.2311	0.3535	-0.2042	-0.044
MATH	7	740995	2	A-R	2	3847	0.6434	0.0651	0.1171	0.1739	0.6424	0.0016	0.4768	-0.1907	-0.2227	-0.2874	0.4776	-0.034
MATH	7	656010	2	B-E	2	3849	0.5349	0.5344	0.3063	0.095	0.0633	0.001	0.4719	0.4726	-0.2276	-0.2585	-0.2204	-0.0415
MATH	7	737107	2	B-E	2	3842	0.6731	0.1337	0.1456	0.6712	0.0467	0.0029	0.4775	-0.2643	-0.2981	0.4765	-0.1325	-0.0156
MATH	7	413358	2	C-G	2	3844	0.3434	0.0921	0.3426	0.429	0.1339	0.0023	0.2155	0.0762	0.2163	-0.1446	-0.1513	-0.0336
MATH	7	715809	2	D-S	2	3845	0.3014	0.3091	0.1581	0.23	0.3008	0.0021	0.2183	0.1323	-0.2333	-0.1782	0.2189	-0.0326
MATH	7	741022	2	D-S	2	3844	0.2981	0.1036	0.2974	0.3462	0.2505	0.0023	0.3158	-0.0301	0.3157	-0.1398	-0.1568	-0.0138
MATH	7	737104	3	A-N	2	3812	0.5582	0.0621	0.0812	0.2978	0.5574	0.0016	0.5352	-0.1923	-0.2266	-0.3428	0.5352	-0.0194
MATH	7	745984	3	A-N	2	3785	0.4188	0.1425	0.1629	0.2708	0.4151	0.0086	0.4421	-0.1154	-0.2847	-0.1498	0.4446	-0.0763
MATH	7	740973	3	A-R	2	3813	0.6058	0.1689	0.1192	0.1056	0.605	0.0013	0.5826	-0.3121	-0.271	-0.2578	0.5831	-0.0307
MATH	7	740994	3	A-R	2	3807	0.4526	0.4513	0.149	0.3017	0.0951	0.0029	0.2341	0.2344	-0.1191	-0.104	-0.0867	-0.02
MATH	7	741008	3	B-E	2	3810	0.3832	0.2302	0.248	0.3824	0.1372	0.0021	0.2264	0.0368	-0.1863	0.2267	-0.1295	-0.0139
MATH	7	745996	3	B-E	2	3808	0.4903	0.1933	0.2053	0.1097	0.489	0.0026	0.5338	-0.1352	-0.3231	-0.2588	0.5343	-0.0452
MATH	7	741017	3	C-G	2	3807	0.5427	0.0956	0.2336	0.5411	0.1268	0.0029	0.4256	-0.197	-0.2103	0.4269	-0.1895	-0.0513
MATH	7	413361	3	D-S	2	3810	0.4816	0.0872	0.4806	0.2818	0.1482	0.0021	0.3826	-0.1163	0.3832	-0.1924	-0.1983	-0.0354
MATH	7	301881	4	A-N	2	3858	0.4272	0.1012	0.4265	0.3175	0.1532	0.0016	0.3531	-0.1024	0.354	-0.1705	-0.1751	-0.0446
MATH	7	745981	4	A-N	2	3835	0.6274	0.6227	0.0691	0.0652	0.2355	0.0075	0.3596	0.3599	-0.1713	-0.1636	-0.2065	-0.0342

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	7	303013	4	A-R	2	3854	0.5623	0.1804	0.1579	0.5608	0.0983	0.0026	0.531	-0.2659	-0.2648	0.5317	-0.2114	-0.0412
MATH	7	741009	4	B-E	2	3858	0.661	0.0859	0.6599	0.1791	0.0735	0.0016	0.4319	-0.1656	0.4323	-0.2606	-0.22	-0.0279
MATH	7	745994	4	B-E	2	3858	0.7167	0.7156	0.1377	0.097	0.0481	0.0016	0.5277	0.5289	-0.3121	-0.283	-0.2124	-0.0469
MATH	7	303084	4	C-G	2	3861	0.3437	0.3918	0.1475	0.1165	0.3434	0.0008	0.414	-0.0358	-0.3076	-0.2177	0.4138	-0.0038
MATH	7	745999	4	C-G	2	3858	0.5759	0.0833	0.5751	0.1102	0.2298	0.0016	0.4922	-0.2364	0.4931	-0.2524	-0.2321	-0.0435
MATH	7	405356	4	D-S	2	3856	0.4681	0.1154	0.3238	0.4671	0.0916	0.0021	0.4735	-0.2645	-0.2428	0.4745	-0.1256	-0.0514
MATH	7	740967	5	A-N	2	3796	0.3411	0.119	0.3045	0.3379	0.2291	0.0094	0.1059	-0.1571	-0.0361	0.1089	0.0503	-0.0534
MATH	7	300461	5	A-R	2	3821	0.4572	0.4559	0.1498	0.215	0.1764	0.0029	0.5625	0.5623	-0.2834	-0.2294	-0.2182	-0.0283
MATH	7	745988	5	A-R	2	3822	0.6206	0.0793	0.1294	0.1696	0.619	0.0026	0.5934	-0.2707	-0.3305	-0.2727	0.5933	-0.0323
MATH	7	711394	5	B-E	2	3823	0.3199	0.3192	0.2273	0.3223	0.1289	0.0023	0.2292	0.2297	-0.1032	-0.0843	-0.0684	-0.0311
MATH	7	777278	5	B-E	2	3822	0.4304	0.2581	0.215	0.4293	0.095	0.0026	0.4137	-0.1665	-0.2119	0.4152	-0.1447	-0.0623
MATH	7	741015	5	C-G	2	3822	0.3959	0.2576	0.3948	0.22	0.125	0.0026	0.1762	-0.0116	0.1772	-0.2079	0.0192	-0.0341
MATH	7	741018	5	C-G	2	3826	0.3957	0.1083	0.2158	0.2792	0.3951	0.0016	0.4112	-0.2473	-0.2579	-0.0377	0.4116	-0.0348
MATH	7	741023	5	D-S	2	3824	0.7335	0.0522	0.0725	0.732	0.1412	0.0021	0.4592	-0.244	-0.2171	0.4606	-0.2623	-0.0459
MATH	7	740969	6	A-N	2	3821	0.3345	0.2168	0.2385	0.2033	0.331	0.0104	0.4445	-0.0812	-0.2612	-0.1452	0.4455	-0.0631
MATH	7	745985	6	A-R	2	3854	0.7117	0.7104	0.1323	0.0943	0.0611	0.0018	0.553	0.5536	-0.3338	-0.2637	-0.2484	-0.0331
MATH	7	745986	6	A-R	2	3855	0.5694	0.1052	0.1285	0.5685	0.1963	0.0016	0.4001	-0.1751	-0.2126	0.4014	-0.1811	-0.0512
MATH	7	413356	6	B-E	2	3855	0.4324	0.1443	0.2471	0.4318	0.1753	0.0016	0.3114	-0.034	-0.2268	0.312	-0.1147	-0.0294
MATH	7	741011	6	B-E	2	3850	0.661	0.6592	0.1699	0.0974	0.0707	0.0028	0.482	0.4817	-0.2023	-0.2761	-0.2706	-0.0213
MATH	7	737110	6	C-G	2	3854	0.631	0.1129	0.1958	0.6299	0.0596	0.0018	0.4706	-0.2465	-0.3032	0.4714	-0.117	-0.0379
MATH	7	737111	6	C-G	2	3841	0.3327	0.2142	0.331	0.2264	0.2233	0.0052	0.4439	-0.1612	0.445	-0.2567	-0.0763	-0.0563
MATH	7	715811	6	D-S	1	3849	0.544	0.0997	0.186	0.1689	0.5423	0.0031	0.6105	-0.2694	-0.3278	-0.2493	0.6115	-0.0541
MATH	7	412772	7	A-N	1	3834	0.5589	0.1038	0.1478	0.1883	0.5575	0.0026	0.555	-0.1425	-0.3493	-0.2716	0.556	-0.0499
MATH	7	740966	7	A-N	2	3824	0.3033	0.3824	0.1134	0.3018	0.1972	0.0052	0.4959	-0.0525	-0.2003	0.4965	-0.3399	-0.0503
MATH	7	266614	7	A-R	2	3839	0.459	0.2094	0.4584	0.2331	0.0978	0.0013	0.3509	-0.1678	0.3506	-0.1859	-0.0929	-0.0067
MATH	7	740974	7	A-R	2	3840	0.5443	0.5437	0.185	0.1329	0.1374	0.001	0.493	0.4932	-0.2796	-0.1132	-0.2848	-0.0188
MATH	7	706368	7	B-E	1	3843	0.6157	0.0463	0.1881	0.1498	0.6155	0.0003	0.55	-0.2128	-0.325	-0.2678	0.5503	-0.0243
MATH	7	737108	7	B-E	2	3837	0.2906	0.2901	0.1928	0.3442	0.1712	0.0018	0.3313	0.3314	-0.1125	-0.1766	-0.0571	-0.0133
MATH	7	706372	7	C-G	2	3835	0.2777	0.2771	0.315	0.2581	0.1475	0.0023	0.0669	0.0673	0.0539	-0.0605	-0.0784	-0.018

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	7	303097	7	D-S	2	3837	0.4845	0.1935	0.4836	0.2393	0.0817	0.0018	0.2687	-0.0475	0.2689	-0.1599	-0.1699	-0.0197
MATH	7	740971	8	A-N	2	3824	0.233	0.2311	0.5258	0.1888	0.0462	0.008	0.2709	0.2731	0.0097	-0.2385	-0.0932	-0.0795
MATH	7	301882	8	A-R	2	3847	0.4507	0.2817	0.4498	0.2236	0.0428	0.0021	0.4145	-0.1518	0.4144	-0.2292	-0.2058	-0.0157
MATH	7	740975	8	A-R	2	3847	0.6213	0.0433	0.2636	0.62	0.0711	0.0021	0.4842	-0.1742	-0.3041	0.484	-0.2512	-0.0203
MATH	7	300418	8	B-E	2	3847	0.4424	0.4415	0.2246	0.2143	0.1175	0.0021	0.3787	0.3792	-0.1629	-0.2119	-0.0996	-0.0289
MATH	7	745993	8	B-E	2	3847	0.5235	0.0672	0.1476	0.2607	0.5224	0.0021	0.5464	-0.2288	-0.28	-0.2619	0.5463	-0.0284
MATH	7	741020	8	C-G	2	3850	0.4182	0.241	0.4176	0.249	0.0911	0.0013	0.3785	-0.2086	0.3789	-0.0888	-0.2026	-0.0265
MATH	7	706373	8	D-S	1	3847	0.7377	0.0524	0.0791	0.7362	0.1302	0.0021	0.398	-0.1913	-0.251	0.3983	-0.1905	-0.0233
MATH	7	741024	8	D-S	2	3854	0.5675	0.1302	0.5673	0.1743	0.1279	0.0003	0.4852	-0.1517	0.4853	-0.2874	-0.2402	-0.007
MATH	7	745980	9	A-N	2	3777	0.5719	0.0525	0.116	0.2558	0.5668	0.0089	0.5252	-0.2107	-0.2114	-0.3186	0.529	-0.0897
MATH	7	706367	9	A-R	2	3809	0.6038	0.0866	0.6035	0.1603	0.149	0.0005	0.5426	-0.2161	0.5425	-0.331	-0.2327	-0.0133
MATH	7	737106	9	A-R	2	3803	0.4825	0.1349	0.2663	0.4815	0.1152	0.0021	0.4583	-0.203	-0.2207	0.4586	-0.1914	-0.0251
MATH	7	301885	9	B-E	2	3805	0.4859	0.0622	0.4852	0.3994	0.0517	0.0016	0.4857	-0.2253	0.4865	-0.2768	-0.2324	-0.0429
MATH	7	741007	9	B-E	2	3803	0.5217	0.5206	0.1483	0.2238	0.1052	0.0021	0.5347	0.535	-0.2455	-0.2741	-0.209	-0.0367
MATH	7	319292	9	C-G	2	3802	0.4153	0.1761	0.1871	0.4143	0.2202	0.0024	0.2379	0.0173	-0.2177	0.2388	-0.0913	-0.0304
MATH	7	745998	9	C-G	2	3806	0.4285	0.1078	0.232	0.2309	0.428	0.0013	0.4573	-0.1781	-0.2157	-0.1871	0.4579	-0.0405
MATH	7	715816	9	D-S	2	3800	0.1587	0.2566	0.2661	0.3162	0.1582	0.0029	0.1136	0.2654	-0.2075	-0.1385	0.1141	-0.0276
MATH	8	335243	0	A-N	1	39554	0.6096	0.1846	0.608	0.1127	0.0921	0.0026	0.4933	-0.2093	0.4944	-0.2866	-0.2329	-0.0426
MATH	8	416599	0	A-N	2	39581	0.7058	0.066	0.1283	0.0992	0.7045	0.002	0.4453	-0.2018	-0.2593	-0.2188	0.4453	-0.0203
MATH	8	575467	0	A-N	1	39544	0.5125	0.0987	0.511	0.1849	0.2025	0.0029	0.3631	-0.1423	0.364	-0.1165	-0.2297	-0.0369
MATH	8	617260	0	A-N	1	39476	0.3995	0.2026	0.3976	0.1809	0.2143	0.0046	0.3824	-0.1601	0.3833	-0.125	-0.1762	-0.0418
MATH	8	314876	0	B-E	2	39491	0.5002	0.134	0.498	0.3203	0.0434	0.0042	0.393	-0.0995	0.3941	-0.2605	-0.1906	-0.0426
MATH	8	415801	0	B-E	2	39547	0.4212	0.1119	0.2522	0.2131	0.42	0.0028	0.5139	-0.2194	-0.1726	-0.2637	0.5141	-0.0304
MATH	8	489553	0	B-E	1	39523	0.3104	0.3093	0.3599	0.1463	0.181	0.0034	0.503	0.5036	-0.1511	-0.1912	-0.2336	-0.0469
MATH	8	503513	0	B-E	2	39557	0.6366	0.1104	0.635	0.1818	0.0703	0.0026	0.4402	-0.1399	0.4406	-0.2924	-0.2112	-0.0304
MATH	8	574468	0	B-E	1	39550	0.4219	0.2129	0.4208	0.2371	0.1265	0.0027	0.3788	0.0009	0.3793	-0.2837	-0.1966	-0.0319
MATH	8	574587	0	B-E	1	39540	0.359	0.2215	0.3579	0.2318	0.1858	0.003	0.3229	-0.0483	0.3236	-0.2581	-0.0624	-0.0341
MATH	8	574948	0	B-E	1	39571	0.6255	0.6241	0.1205	0.1539	0.0992	0.0022	0.4256	0.4261	-0.2824	-0.1943	-0.1435	-0.03
MATH	8	574949	0	B-E	2	39562	0.3337	0.1091	0.3329	0.3545	0.2011	0.0024	0.3113	-0.1897	0.3119	-0.0522	-0.1524	-0.0365

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	8	615384	0	B-E	2	39491	0.4091	0.1651	0.167	0.4074	0.2563	0.0042	0.3513	-0.14	-0.2049	0.3524	-0.0964	-0.041
MATH	8	617261	0	B-E	1	39470	0.3734	0.1137	0.4438	0.3716	0.0661	0.0048	0.4251	-0.1658	-0.2097	0.4259	-0.1844	-0.0464
MATH	8	621934	0	B-E	1	39524	0.4213	0.4198	0.2379	0.2622	0.0767	0.0034	0.4644	0.4651	-0.2306	-0.1762	-0.1925	-0.0444
MATH	8	651117	0	B-E	1	39570	0.4212	0.2384	0.1548	0.1842	0.4203	0.0022	0.4872	-0.2692	-0.1462	-0.1843	0.4876	-0.0345
MATH	8	658902	0	B-E	1	39587	0.5343	0.5334	0.1234	0.1636	0.1778	0.0018	0.5927	0.5931	-0.2176	-0.3307	-0.2629	-0.0356
MATH	8	706379	0	B-E	2	39571	0.5901	0.1155	0.1522	0.5887	0.1414	0.0022	0.4946	-0.2007	-0.2788	0.495	-0.2232	-0.0325
MATH	8	709939	0	B-E	2	39588	0.6672	0.666	0.0916	0.1886	0.052	0.0018	0.4504	0.4511	-0.0786	-0.3807	-0.1793	-0.0331
MATH	8	711523	0	B-E	2	39560	0.5257	0.1485	0.1706	0.5244	0.154	0.0025	0.4644	-0.1992	-0.2938	0.4648	-0.1363	-0.0315
MATH	8	502450	0	B-F	2	39534	0.5359	0.1319	0.189	0.5343	0.1417	0.0032	0.4305	-0.1925	-0.2386	0.4316	-0.1558	-0.0434
MATH	8	565843	0	B-F	2	39565	0.6183	0.1532	0.6168	0.0926	0.1351	0.0024	0.4426	-0.1771	0.4435	-0.2526	-0.2249	-0.036
MATH	8	569261	0	B-F	2	39565	0.8212	0.032	0.1269	0.8192	0.0195	0.0024	0.4368	-0.156	-0.3576	0.438	-0.1453	-0.0399
MATH	8	574959	0	B-F	1	39512	0.2959	0.2948	0.3308	0.2258	0.1448	0.0037	0.3865	0.387	-0.1527	-0.1102	-0.1597	-0.0383
MATH	8	711408	0	B-F	1	39550	0.5763	0.0836	0.1516	0.5747	0.1874	0.0027	0.3812	-0.1599	-0.1938	0.382	-0.1879	-0.0329
MATH	8	713670	0	B-F	2	39551	0.4736	0.4724	0.1804	0.183	0.1615	0.0027	0.5541	0.554	-0.2439	-0.2961	-0.1816	-0.0285
MATH	8	713672	0	B-F	1	39538	0.6218	0.2035	0.1041	0.0694	0.6199	0.0031	0.37	-0.1333	-0.2555	-0.1824	0.371	-0.0366
MATH	8	412789	0	C-G	2	39570	0.7228	0.0568	0.0646	0.1552	0.7212	0.0022	0.489	-0.1997	-0.2515	-0.3032	0.49	-0.04
MATH	8	416554	0	C-G	2	39531	0.392	0.2644	0.1459	0.3908	0.1956	0.0032	0.3867	-0.3143	-0.2014	0.3874	0.0578	-0.0388
MATH	8	494640	0	C-G	2	39506	0.3383	0.337	0.1949	0.3113	0.1529	0.0039	0.39	0.39	-0.0679	-0.1917	-0.1866	-0.0243
MATH	8	569267	0	C-G	1	39587	0.7295	0.0961	0.1011	0.0728	0.7282	0.0018	0.4531	-0.1915	-0.2758	-0.2347	0.4536	-0.0294
MATH	8	662581	0	C-G	2	39527	0.594	0.1269	0.592	0.1852	0.0925	0.0033	0.4589	-0.2199	0.4603	-0.241	-0.1953	-0.0489
MATH	8	706383	0	C-G	2	39538	0.3229	0.3464	0.3219	0.0661	0.2626	0.0031	0.5067	-0.3255	0.5068	-0.1053	-0.1227	-0.0328
MATH	8	713421	0	C-G	2	39529	0.4382	0.2042	0.238	0.4368	0.1177	0.0033	0.4348	-0.2127	-0.1881	0.4356	-0.1481	-0.0428
MATH	8	713679	0	C-G	2	39565	0.6356	0.1048	0.1203	0.6341	0.1384	0.0024	0.4549	-0.1831	-0.2047	0.4561	-0.275	-0.0426
MATH	8	715819	0	C-G	1	39555	0.5682	0.1287	0.1901	0.1118	0.5667	0.0026	0.5827	-0.2934	-0.2611	-0.274	0.5831	-0.0362
MATH	8	618010	0	D-S	1	39590	0.5986	0.1511	0.1829	0.5976	0.0667	0.0017	0.4686	-0.2554	-0.2025	0.4692	-0.2362	-0.033
MATH	8	623657	0	D-S	2	39567	0.6115	0.0506	0.2344	0.1025	0.6101	0.0023	0.5015	-0.2182	-0.2478	-0.2976	0.5023	-0.0388
MATH	8	625331	0	D-S	2	39529	0.4767	0.1413	0.2175	0.1627	0.4752	0.0033	0.5536	-0.1586	-0.3109	-0.246	0.5542	-0.0426
MATH	8	658908	0	D-S	2	39533	0.3087	0.2365	0.3077	0.1413	0.3113	0.0032	0.2755	-0.081	0.2758	-0.1998	-0.0475	-0.023
MATH	8	740976	1	B-E	2	7948	0.3138	0.1279	0.1475	0.4039	0.3106	0.0101	0.3948	-0.1622	-0.2157	-0.0974	0.3957	-0.0471

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	8	747542	1	B-E	2	8004	0.3055	0.1105	0.3532	0.2287	0.3045	0.0031	0.3628	-0.1758	-0.0903	-0.1598	0.3631	-0.0308
MATH	8	747545	1	B-E	2	8005	0.4665	0.1082	0.4651	0.2309	0.1928	0.003	0.3344	-0.1705	0.3356	-0.2035	-0.0671	-0.0408
MATH	8	740985	1	B-F	2	8001	0.2346	0.1544	0.2338	0.3709	0.2374	0.0035	0.0821	-0.1269	0.0832	-0.1125	0.1581	-0.0392
MATH	8	747549	1	B-F	2	8010	0.3004	0.2001	0.2318	0.266	0.2997	0.0024	0.3981	-0.188	-0.0395	-0.2019	0.3985	-0.0299
MATH	8	278589	1	C-G	2	8003	0.2438	0.1527	0.2124	0.243	0.3887	0.0032	0.4028	-0.1519	-0.099	0.4029	-0.1564	-0.0256
MATH	8	740987	1	C-G	2	8001	0.3123	0.2005	0.2674	0.2173	0.3112	0.0035	0.4963	-0.1967	-0.1895	-0.1588	0.4962	-0.0277
MATH	8	623656	1	D-S	2	8014	0.2599	0.1935	0.3205	0.2247	0.2594	0.0019	0.1978	-0.0099	0.0077	-0.2055	0.1979	-0.0154
MATH	8	301823	2	A-N	1	3960	0.3851	0.3726	0.2038	0.3842	0.037	0.0023	0.3866	-0.3528	0.0125	0.3872	-0.1121	-0.0332
MATH	8	300399	2	B-E	2	3961	0.4198	0.419	0.1801	0.2383	0.1605	0.002	0.4597	0.4596	-0.1582	-0.3114	-0.0884	-0.0187
MATH	8	661386	2	B-E	2	3963	0.3177	0.1305	0.2759	0.2749	0.3172	0.0015	0.3749	-0.1471	-0.1197	-0.1569	0.3755	-0.0424
MATH	8	747538	2	B-E	2	3939	0.4082	0.4051	0.1925	0.2832	0.1116	0.0076	0.4967	0.4966	-0.1998	-0.2936	-0.0918	-0.0445
MATH	8	713418	2	B-F	2	3963	0.7633	0.0748	0.1051	0.7622	0.0564	0.0015	0.4714	-0.2582	-0.2677	0.4719	-0.216	-0.0264
MATH	8	747548	2	B-F	2	3964	0.3264	0.2091	0.326	0.1902	0.2734	0.0013	0.3207	-0.0892	0.3208	-0.2959	0.0057	-0.013
MATH	8	713423	2	C-G	2	3966	0.616	0.6155	0.1716	0.1703	0.0418	0.0008	0.4927	0.4933	-0.3159	-0.2305	-0.166	-0.0357
MATH	8	658640	2	D-S	2	3951	0.3923	0.095	0.3905	0.2945	0.2154	0.0045	0.1819	-0.1448	0.1837	-0.1189	0.0243	-0.0444
MATH	8	269587	3	B-E	1	3959	0.6433	0.1109	0.1711	0.6417	0.0738	0.0025	0.4961	-0.2129	-0.3347	0.4976	-0.1646	-0.0534
MATH	8	736758	3	B-E	2	3961	0.663	0.0579	0.6616	0.196	0.0824	0.002	0.5144	-0.1971	0.5155	-0.3224	-0.2465	-0.0465
MATH	8	740978	3	B-E	2	3951	0.166	0.2683	0.3056	0.2562	0.1653	0.0045	0.3451	-0.1227	-0.0365	-0.1237	0.3457	-0.0478
MATH	8	736759	3	B-F	2	3961	0.5203	0.1121	0.2336	0.5193	0.133	0.002	0.365	-0.1997	-0.135	0.3662	-0.1788	-0.046
MATH	8	740986	3	B-F	2	3960	0.6616	0.1461	0.0622	0.1293	0.6601	0.0023	0.4262	-0.1246	-0.2164	-0.3103	0.427	-0.0391
MATH	8	319264	3	C-G	2	3962	0.2928	0.2923	0.1859	0.36	0.16	0.0018	0.3339	0.3341	-0.1729	-0.0588	-0.1514	-0.0218
MATH	8	713682	3	C-G	2	3962	0.5061	0.1809	0.5052	0.2509	0.0612	0.0018	0.2745	-0.1674	0.2761	-0.1247	-0.0719	-0.0546
MATH	8	747564	3	D-S	2	3959	0.1647	0.2822	0.2172	0.3338	0.1643	0.0025	-0.036	0.1578	-0.1528	0.014	-0.0353	-0.0308
MATH	8	617836	4	A-N	1	3897	0.6215	0.1631	0.1145	0.6163	0.0977	0.0084	0.2568	-0.0761	-0.1064	0.2613	-0.1994	-0.0643
MATH	8	740956	4	A-N	1	3919	0.5221	0.5206	0.1331	0.1433	0.2003	0.0028	0.425	0.4252	-0.1463	-0.2229	-0.2077	-0.0281
MATH	8	658634	4	B-E	2	3927	0.2256	0.2257	0.3122	0.2254	0.2359	0.0008	0.0907	0.0376	-0.1263	0.0905	0.0112	0.0066
MATH	8	740980	4	B-E	2	3923	0.6051	0.1254	0.17	0.6041	0.0987	0.0018	0.5217	-0.2186	-0.2846	0.5227	-0.2499	-0.0423
MATH	8	740983	4	B-F	1	3926	0.4277	0.0789	0.2799	0.4272	0.213	0.001	0.4393	-0.1645	-0.2148	0.4391	-0.1862	-0.0062
MATH	8	740984	4	B-F	2	3917	0.3944	0.1137	0.1746	0.3153	0.3931	0.0033	0.447	-0.1561	-0.2288	-0.1722	0.4473	-0.036

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	8	747558	4	C-G	2	3926	0.7667	0.0718	0.7659	0.1061	0.0552	0.001	0.3936	-0.1543	0.3929	-0.3138	-0.1307	-0.0013
MATH	8	740992	4	D-S	2	3916	0.4234	0.1394	0.4219	0.1868	0.2483	0.0036	0.2984	-0.1006	0.3002	-0.234	-0.044	-0.0531
MATH	8	740952	5	A-N	1	3948	0.6431	0.1944	0.6418	0.092	0.0698	0.002	0.551	-0.3558	0.552	-0.2358	-0.2111	-0.0425
MATH	8	747534	5	A-N	2	3926	0.5041	0.0953	0.1431	0.2538	0.5003	0.0076	0.4894	-0.177	-0.2285	-0.2475	0.4918	-0.0716
MATH	8	398629	5	B-E	2	3947	0.4885	0.2174	0.4874	0.184	0.1089	0.0023	0.4651	-0.2711	0.4655	-0.237	-0.0883	-0.0316
MATH	8	747544	5	B-E	2	3950	0.5835	0.1807	0.0996	0.5827	0.1355	0.0015	0.4477	-0.2048	-0.2278	0.4482	-0.213	-0.029
MATH	8	416595	5	B-F	2	3946	0.281	0.2803	0.1641	0.3734	0.1797	0.0025	0.2949	0.2955	-0.1395	-0.0866	-0.0977	-0.0324
MATH	8	314846	5	C-G	2	3950	0.2787	0.137	0.3739	0.2093	0.2783	0.0015	0.3486	-0.216	0.0315	-0.2376	0.3487	-0.0148
MATH	8	747559	5	C-G	2	3944	0.4921	0.1092	0.4906	0.1115	0.2856	0.003	0.4176	-0.1699	0.4184	-0.236	-0.1767	-0.0374
MATH	8	747562	5	D-S	1	3950	0.5038	0.503	0.0465	0.3964	0.0526	0.0015	0.2935	0.2936	-0.1924	-0.1132	-0.226	-0.0114
MATH	8	747531	6	A-N	1	3937	0.6033	0.1138	0.6017	0.1254	0.1566	0.0025	0.3926	-0.1703	0.3909	-0.2586	-0.1431	0.0071
MATH	8	736756	6	B-E	2	3941	0.4083	0.0912	0.2425	0.4077	0.2572	0.0015	0.3906	-0.1555	-0.0977	0.3903	-0.2401	-0.0057
MATH	8	740979	6	B-E	2	3944	0.2769	0.1677	0.2767	0.2739	0.281	0.0008	0.1264	-0.1187	0.1269	-0.1672	0.1408	-0.0408
MATH	8	747540	6	B-E	2	3922	0.5625	0.5589	0.2012	0.1604	0.0732	0.0063	0.4491	0.45	-0.2504	-0.181	-0.2025	-0.0492
MATH	8	399395	6	B-F	2	3943	0.4405	0.1705	0.115	0.4401	0.2734	0.001	0.3588	-0.0819	-0.1835	0.3592	-0.1982	-0.0192
MATH	8	747547	6	B-F	2	3940	0.1734	0.173	0.2926	0.206	0.3266	0.0018	0.1073	0.1078	-0.0491	-0.1302	0.0755	-0.0276
MATH	8	747557	6	C-G	2	3944	0.108	0.1079	0.207	0.3205	0.3638	0.0008	-0.0154	-0.0152	-0.0783	0.0569	0.022	-0.024
MATH	8	416555	6	D-S	2	3936	0.6822	0.1031	0.1551	0.0588	0.6803	0.0028	0.3309	-0.1585	-0.1596	-0.1998	0.3329	-0.0445
MATH	8	736754	7	A-N	1	3933	0.2202	0.0959	0.3368	0.3434	0.2191	0.0048	0.1259	-0.1258	0.148	-0.1752	0.1268	-0.0314
MATH	8	740953	7	A-N	2	3921	0.4394	0.2748	0.1298	0.436	0.1516	0.0078	0.3919	-0.3483	-0.1583	0.3945	0.0547	-0.0742
MATH	8	736757	7	B-E	2	3934	0.3551	0.2146	0.1351	0.3535	0.2923	0.0046	0.1863	-0.1253	-0.1242	0.1879	0.0152	-0.0422
MATH	8	747546	7	B-E	2	3945	0.4423	0.4415	0.1344	0.3148	0.1075	0.0018	0.4419	0.4427	-0.2856	-0.1247	-0.2024	-0.0431
MATH	8	736760	7	B-F	2	3939	0.5633	0.1556	0.5615	0.2222	0.0574	0.0033	0.4494	-0.187	0.4512	-0.2633	-0.187	-0.055
MATH	8	747551	7	B-F	1	3944	0.6836	0.0782	0.1078	0.6822	0.1298	0.002	0.5306	-0.2549	-0.3243	0.5318	-0.2278	-0.0461
MATH	8	713677	7	C-G	2	3944	0.3139	0.3133	0.2576	0.2599	0.1673	0.002	0.3153	0.3147	-0.085	-0.1352	-0.1324	-0.0018
MATH	8	416292	7	D-S	2	3948	0.518	0.2786	0.5175	0.1384	0.0645	0.001	0.332	-0.0545	0.3328	-0.2297	-0.2498	-0.0357
MATH	8	416549	8	A-N	1	3953	0.4073	0.4067	0.1207	0.3794	0.0917	0.0015	0.2749	0.2756	-0.2783	0.0587	-0.249	-0.0334
MATH	8	747535	8	A-N	2	3940	0.5822	0.1311	0.5794	0.1523	0.1324	0.0048	0.518	-0.2718	0.518	-0.2554	-0.206	-0.0349
MATH	8	296704	8	B-E	1	3947	0.4259	0.2046	0.2281	0.4246	0.1397	0.003	0.3458	-0.1296	-0.2127	0.3472	-0.0788	-0.0504

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
MATH	8	747543	8	B-E	2	3955	0.5712	0.1041	0.5706	0.1452	0.1791	0.001	0.4681	-0.0616	0.4686	-0.3125	-0.2662	-0.0307
MATH	8	747550	8	B-F	2	3946	0.3066	0.1223	0.418	0.1508	0.3056	0.0033	0.2599	-0.2047	0.0483	-0.209	0.2607	-0.036
MATH	8	740989	8	C-G	2	3950	0.6078	0.1394	0.6065	0.1543	0.0975	0.0023	0.4234	-0.1599	0.4243	-0.2448	-0.2082	-0.0356
MATH	8	416597	8	D-S	2	3951	0.4571	0.1101	0.2018	0.4562	0.2299	0.002	0.2449	-0.3062	-0.144	0.2462	0.0784	-0.0434
MATH	8	740993	8	D-S	2	3955	0.5654	0.5648	0.2266	0.1503	0.0573	0.001	0.5199	0.5202	-0.2925	-0.2622	-0.1763	-0.0252
MATH	8	651124	9	A-N	2	3944	0.4414	0.441	0.1011	0.2647	0.1922	0.001	0.5087	0.5088	-0.2227	-0.2771	-0.1595	-0.013
MATH	8	303008	9	B-E	1	3939	0.4839	0.4828	0.2254	0.1213	0.1682	0.0023	0.5118	0.5123	-0.1363	-0.3097	-0.2571	-0.0365
MATH	8	404824	9	B-E	2	3944	0.6567	0.0679	0.0904	0.656	0.1847	0.001	0.4459	-0.1884	-0.1166	0.4464	-0.3361	-0.0254
MATH	8	740977	9	B-E	2	3926	0.2002	0.2541	0.1109	0.4303	0.1991	0.0056	0.3662	-0.3447	-0.1146	0.0882	0.3667	-0.0549
MATH	8	278063	9	B-F	2	3944	0.3981	0.0995	0.4157	0.3977	0.0861	0.001	0.2516	-0.2456	0.0391	0.252	-0.2436	-0.0226
MATH	8	399394	9	B-F	1	3946	0.4209	0.1461	0.1429	0.2898	0.4207	0.0005	0.4397	-0.1718	-0.1655	-0.216	0.44	-0.0287
MATH	8	740988	9	C-G	2	3941	0.4276	0.0993	0.4268	0.2794	0.1928	0.0018	0.3329	-0.0603	0.3333	-0.138	-0.2128	-0.0229
MATH	8	715826	9	D-S	2	3941	0.1543	0.2254	0.154	0.2639	0.3549	0.0018	0.07	0.179	0.0707	-0.2167	-0.0059	-0.0469
SCIENCE	4	494830	0	A	2	32676	0.7515	0.0479	0.1082	0.7507	0.0922	0.001	0.3211	-0.2259	-0.2107	0.3214	-0.0857	-0.0189
SCIENCE	4	566208	0	A	2	32660	0.7725	0.7713	0.0748	0.0876	0.0648	0.0015	0.5131	0.513	-0.2994	-0.2657	-0.2466	-0.0223
SCIENCE	4	574826	0	A	2	32648	0.4541	0.0569	0.0534	0.4532	0.4346	0.0019	0.4366	-0.2595	-0.2472	0.4368	-0.2033	-0.022
SCIENCE	4	574828	0	A	2	32662	0.6597	0.0659	0.1869	0.0871	0.6587	0.0014	0.5474	-0.2097	-0.3083	-0.3068	0.5473	-0.0214
SCIENCE	4	574831	0	A	2	32653	0.6339	0.0995	0.1245	0.1415	0.6329	0.0017	0.5485	-0.1921	-0.2759	-0.329	0.5487	-0.0305
SCIENCE	4	574835	0	A	2	32655	0.7475	0.0888	0.7462	0.0853	0.078	0.0017	0.5018	-0.2527	0.5019	-0.3058	-0.2237	-0.028
SCIENCE	4	574837	0	A	2	32661	0.8089	0.0645	0.0624	0.8077	0.064	0.0015	0.3753	-0.1278	-0.2652	0.3762	-0.2107	-0.0316
SCIENCE	4	576378	0	A	2	32652	0.6679	0.1009	0.0758	0.6667	0.1548	0.0017	0.4912	-0.2663	-0.3197	0.491	-0.1819	-0.0202
SCIENCE	4	617348	0	A	2	32617	0.4241	0.0885	0.1921	0.2937	0.4229	0.0028	0.2957	-0.1846	-0.1139	-0.1049	0.2958	-0.0195
SCIENCE	4	620948	0	A	2	32640	0.4504	0.1467	0.4494	0.1775	0.2243	0.0021	0.3429	-0.2033	0.3433	-0.2117	-0.04	-0.0275
SCIENCE	4	620971	0	A	2	32633	0.6113	0.103	0.6099	0.2201	0.0647	0.0023	0.309	-0.178	0.3103	-0.1354	-0.1593	-0.041
SCIENCE	4	621088	0	A	2	32627	0.3907	0.3173	0.1113	0.3898	0.1791	0.0025	0.3173	-0.1152	-0.1715	0.3179	-0.1193	-0.0344
SCIENCE	4	622825	0	A	3	32669	0.4877	0.1744	0.1254	0.4871	0.2119	0.0012	0.4278	-0.1766	-0.2889	0.428	-0.1236	-0.0212
SCIENCE	4	653788	0	A	2	32624	0.4443	0.1415	0.4431	0.2271	0.1857	0.0026	0.2944	-0.1092	0.2956	-0.1447	-0.1179	-0.0455
SCIENCE	4	657813	0	A	2	32617	0.5409	0.1548	0.1152	0.1878	0.5394	0.0028	0.3506	-0.0596	-0.1799	-0.2407	0.352	-0.0453
SCIENCE	4	657819	0	A	2	32649	0.5038	0.5029	0.1654	0.2073	0.1225	0.0018	0.3849	0.3854	-0.2494	-0.1591	-0.1039	-0.0347

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
SCIENCE	4	657980	0	A	2	32663	0.7059	0.1036	0.7049	0.0917	0.0984	0.0014	0.5327	-0.2747	0.533	-0.2562	-0.2833	-0.0285
SCIENCE	4	657989	0	A	3	32653	0.5283	0.1194	0.1516	0.1999	0.5274	0.0017	0.4253	-0.1543	-0.2062	-0.2188	0.4254	-0.022
SCIENCE	4	728285	0	A	3	32648	0.5401	0.1298	0.1648	0.5391	0.1644	0.0019	0.3657	-0.1823	-0.2932	0.3659	-0.0307	-0.0222
SCIENCE	4	728288	0	A	2	32662	0.5303	0.5296	0.3049	0.094	0.0701	0.0014	0.2612	0.2617	-0.0859	-0.2078	-0.116	-0.0216
SCIENCE	4	336960	0	B	2	32627	0.3987	0.2578	0.1397	0.3977	0.2024	0.0025	0.2973	-0.0295	-0.1489	0.2982	-0.1975	-0.0414
SCIENCE	4	498446	0	B	2	32630	0.6571	0.0683	0.6555	0.1306	0.1432	0.0024	0.3922	-0.2217	0.3934	-0.2112	-0.165	-0.0419
SCIENCE	4	617539	0	B	2	32654	0.573	0.5721	0.1439	0.1216	0.1608	0.0017	0.3234	0.3238	-0.1975	-0.1593	-0.1032	-0.0228
SCIENCE	4	618935	0	B	2	32653	0.4283	0.2235	0.1447	0.4276	0.2025	0.0017	0.3252	-0.0887	-0.2537	0.3256	-0.0842	-0.0242
SCIENCE	4	622360	0	B	1	32653	0.3785	0.1184	0.112	0.39	0.3779	0.0017	0.3073	-0.1292	-0.213	-0.0795	0.308	-0.0399
SCIENCE	4	661154	0	B	2	32637	0.382	0.4322	0.0709	0.3811	0.1135	0.0022	0.2775	0.0259	-0.2695	0.2781	-0.2434	-0.0318
SCIENCE	4	496502	0	C	2	32670	0.8624	0.8614	0.0414	0.0615	0.0346	0.0012	0.4511	0.4509	-0.2607	-0.2684	-0.2118	-0.0212
SCIENCE	4	579926	0	C	2	32638	0.471	0.1347	0.2813	0.47	0.1119	0.0022	0.3927	-0.242	-0.1055	0.3931	-0.2054	-0.0298
SCIENCE	4	624012	0	C	2	32659	0.5316	0.2002	0.5308	0.0904	0.177	0.0015	0.4132	-0.0656	0.4133	-0.2747	-0.263	-0.0217
SCIENCE	4	624015	0	C	2	32660	0.5456	0.2667	0.1	0.0871	0.5447	0.0015	0.4463	-0.2384	-0.1649	-0.2362	0.4466	-0.0228
SCIENCE	4	661168	0	C	2	32676	0.3737	0.3029	0.3733	0.1905	0.1323	0.001	0.355	-0.1729	0.3552	-0.1413	-0.1067	-0.0229
SCIENCE	4	661200	0	C	2	32627	0.6493	0.6477	0.1066	0.1815	0.0617	0.0025	0.3999	0.4008	-0.2333	-0.1745	-0.2091	-0.0374
SCIENCE	4	410858	0	D	2	32652	0.672	0.1517	0.6708	0.093	0.0828	0.0017	0.4611	-0.1952	0.4614	-0.2539	-0.2608	-0.0286
SCIENCE	4	479245	0	D	2	32653	0.4088	0.369	0.4081	0.1368	0.0843	0.0017	0.2724	0.0731	0.2727	-0.2733	-0.268	-0.0213
SCIENCE	4	565986	0	D	2	32597	0.4298	0.223	0.1038	0.2415	0.4283	0.0034	0.3985	-0.1353	-0.2621	-0.1381	0.399	-0.0356
SCIENCE	4	623205	0	D	2	32668	0.642	0.0995	0.225	0.0331	0.6412	0.0013	0.48	-0.1968	-0.3043	-0.2432	0.4801	-0.0223
SCIENCE	4	623870	0	D	2	32643	0.4346	0.4337	0.1705	0.1007	0.293	0.002	0.308	0.3084	-0.1357	-0.2288	-0.0697	-0.0275
SCIENCE	4	661187	0	D	2	32648	0.3445	0.3439	0.0676	0.429	0.1576	0.0019	0.3185	0.3187	-0.2355	-0.049	-0.1841	-0.0203
SCIENCE	4	741106	1	1	2	7625	0.4859	0.1737	0.1459	0.4844	0.1928	0.0031	0.3238	-0.0934	-0.1854	0.3241	-0.1519	-0.0213
SCIENCE	4	747967	1	1	3	7616	0.2499	0.0775	0.2488	0.5031	0.1663	0.0043	-0.043	-0.1819	-0.0424	0.1748	-0.0526	-0.0134
SCIENCE	4	747964	1	2	3	7629	0.3594	0.1583	0.2394	0.3585	0.2412	0.0026	0.2778	-0.0768	-0.124	0.2778	-0.1201	-0.0172
SCIENCE	4	747965	1	3	2	7624	0.3414	0.2183	0.2646	0.1735	0.3403	0.0033	0.0697	0.0711	-0.0162	-0.1443	0.0701	-0.0145
SCIENCE	4	743569	1	4	2	7591	0.3129	0.1828	0.2943	0.2049	0.3105	0.0076	0.2092	-0.0634	0.0163	-0.1891	0.211	-0.0488
SCIENCE	4	743643	1	4	3	7625	0.2506	0.2498	0.2288	0.2544	0.2638	0.0031	0.1417	0.1423	-0.1218	-0.0849	0.0635	-0.026
SCIENCE	4	739394	2	1	2	2279	0.5279	0.0556	0.1612	0.5269	0.2545	0.0018	0.3449	-0.2508	-0.1753	0.345	-0.1126	-0.0314

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
SCIENCE	4	747962	2	1	2	2279	0.5665	0.1682	0.1691	0.0955	0.5655	0.0018	0.361	-0.137	-0.1225	-0.2762	0.3609	-0.0133
SCIENCE	4	747968	2	1	2	2275	0.4492	0.4477	0.1323	0.24	0.1765	0.0035	0.3643	0.3632	-0.2162	-0.1389	-0.1251	-0.006
SCIENCE	4	737133	2	2	2	2279	0.6415	0.1827	0.0771	0.0981	0.6404	0.0018	0.41	-0.1606	-0.2628	-0.2168	0.4082	0.018
SCIENCE	4	747966	2	4	2	2279	0.7477	0.1261	0.0591	0.7464	0.0666	0.0018	0.4608	-0.2628	-0.1783	0.4593	-0.2832	0.0012
SCIENCE	4	739445	2	5	2	2275	0.6312	0.629	0.1064	0.1875	0.0736	0.0035	0.474	0.4722	-0.2242	-0.2567	-0.2247	-0.0026
SCIENCE	4	737129	3	1	2	2275	0.9262	0.9237	0.0189	0.0298	0.025	0.0026	0.3968	0.3946	-0.208	-0.2465	-0.2128	-0.0259
SCIENCE	4	748337	3	1	2	2275	0.2031	0.2034	0.1635	0.2025	0.4279	0.0026	-0.0651	-0.0727	-0.2488	-0.0649	0.298	-0.0017
SCIENCE	4	748339	3	1	2	2279	0.4936	0.1131	0.1543	0.2385	0.4932	0.0009	0.4152	-0.1679	-0.1959	-0.195	0.4152	-0.0183
SCIENCE	4	741115	3	2	2	2276	0.5127	0.1758	0.1333	0.1771	0.5116	0.0022	0.3862	-0.0969	-0.2746	-0.1646	0.3838	0.0246
SCIENCE	4	748343	3	3	2	2276	0.4297	0.2043	0.4288	0.1854	0.1793	0.0022	0.2787	0.0127	0.278	-0.2263	-0.1427	-0.0008
SCIENCE	4	739450	3	5	3	2278	0.6541	0.0789	0.0728	0.6532	0.1938	0.0013	0.3103	-0.1737	-0.1739	0.312	-0.1382	-0.0518
SCIENCE	4	748338	4	1	2	2261	0.4719	0.2497	0.135	0.142	0.4707	0.0026	0.3879	-0.0846	-0.2255	-0.2257	0.3875	-0.0186
SCIENCE	4	748341	4	2	2	2257	0.6841	0.0701	0.1487	0.6811	0.0957	0.0044	0.3961	-0.1128	-0.2683	0.3949	-0.198	-0.0233
SCIENCE	4	739404	4	3	3	2265	0.3558	0.3555	0.3961	0.1632	0.0843	0.0009	0.1031	0.1037	0.1093	-0.2023	-0.0983	-0.0359
SCIENCE	4	748344	4	3	2	2261	0.4113	0.1354	0.4102	0.2929	0.1588	0.0026	0.3524	-0.0753	0.3535	-0.1227	-0.2445	-0.0574
SCIENCE	4	743568	4	4	2	2263	0.5007	0.1015	0.2519	0.1451	0.4998	0.0018	0.4076	-0.2058	-0.1397	-0.2293	0.4068	0.0026
SCIENCE	4	739452	4	5	2	2263	0.7353	0.041	0.101	0.1222	0.734	0.0018	0.4977	-0.2402	-0.3118	-0.2363	0.4964	-0.0081
SCIENCE	4	748330	5	1	3	2290	0.5856	0.5838	0.1502	0.1698	0.0932	0.003	0.4339	0.4342	-0.2122	-0.2436	-0.1547	-0.0321
SCIENCE	4	737163	5	3	2	2291	0.6879	0.0675	0.6861	0.098	0.1458	0.0026	0.4576	-0.1928	0.458	-0.2938	-0.2117	-0.0425
SCIENCE	4	739399	5	3	2	2293	0.5604	0.1245	0.5594	0.2107	0.1036	0.0017	0.4442	-0.1286	0.4444	-0.2273	-0.2777	-0.0194
SCIENCE	4	748335	5	3	2	2290	0.4092	0.2085	0.2024	0.4079	0.1781	0.003	0.3177	-0.225	-0.2074	0.3172	0.0503	-0.0072
SCIENCE	4	739449	5	5	3	2292	0.4394	0.192	0.2281	0.4384	0.1393	0.0022	0.2257	-0.0587	-0.1385	0.2267	-0.0857	-0.0341
SCIENCE	4	748336	5	5	1	2282	0.3716	0.185	0.1741	0.2651	0.3692	0.0065	0.3418	-0.0627	-0.2506	-0.0955	0.3427	-0.0475
SCIENCE	4	748328	6	1	2	2278	0.3867	0.3856	0.3133	0.2293	0.0687	0.0031	0.3136	0.313	-0.1112	-0.1163	-0.2025	-0.0114
SCIENCE	4	748329	6	1	2	2282	0.4562	0.2298	0.1637	0.1497	0.4556	0.0013	0.4073	-0.1626	-0.2433	-0.1221	0.4075	-0.0257
SCIENCE	4	748331	6	1	2	2274	0.6266	0.0551	0.1046	0.2118	0.6236	0.0048	0.5016	-0.2574	-0.3335	-0.1957	0.5008	-0.027
SCIENCE	4	739430	6	2	2	2279	0.1931	0.1527	0.4031	0.249	0.1926	0.0026	0.0057	-0.1585	0.2361	-0.1343	0.0075	-0.0722
SCIENCE	4	739411	6	3	2	2283	0.4284	0.2105	0.1982	0.1624	0.428	0.0009	0.3949	-0.1728	-0.0875	-0.2435	0.3947	-0.0058
SCIENCE	4	743580	6	5	3	2281	0.6747	0.1392	0.6735	0.1199	0.0656	0.0018	0.3948	-0.2091	0.3955	-0.2198	-0.1636	-0.0285

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
SCIENCE	4	740632	7	1	2	2277	0.3957	0.176	0.1286	0.3953	0.2993	0.0009	0.2904	-0.2405	-0.2688	0.291	0.0882	-0.0371
SCIENCE	4	740635	7	1	2	2272	0.5946	0.5928	0.1312	0.1549	0.118	0.0031	0.3607	0.3593	-0.2233	-0.223	-0.0639	0.0035
SCIENCE	4	741121	7	2	2	2270	0.6652	0.0882	0.1259	0.6626	0.1194	0.0039	0.4372	-0.2123	-0.2645	0.4374	-0.1746	-0.0357
SCIENCE	4	739398	7	3	3	2277	0.5916	0.0768	0.591	0.1268	0.2045	0.0009	0.4063	-0.1658	0.4065	-0.2802	-0.1533	-0.0205
SCIENCE	4	740640	7	3	2	2267	0.3701	0.3681	0.1957	0.2672	0.1637	0.0053	0.3569	0.3563	-0.149	-0.1354	-0.1398	-0.0149
SCIENCE	4	739441	7	5	2	2279	0.5169	0.115	0.2273	0.5169	0.1409		0.4028	-0.1941	-0.2191	0.4028	-0.1366	
SCIENCE	4	740634	8	1	2	2251	0.4305	0.2425	0.1228	0.203	0.4295	0.0022	0.2059	0.1097	-0.1545	-0.2445	0.205	0.013
SCIENCE	4	740636	8	1	2	2252	0.4019	0.1374	0.4012	0.3005	0.1591	0.0018	0.1313	-0.194	0.132	0.0037	0.0043	-0.0294
SCIENCE	4	740637	8	1	2	2253	0.4354	0.4348	0.1826	0.219	0.1622	0.0013	0.2941	0.2943	-0.1086	-0.1419	-0.121	-0.0176
SCIENCE	4	739420	8	2	2	2252	0.4867	0.4858	0.1707	0.1764	0.1653	0.0018	0.4718	0.4718	-0.1596	-0.2458	-0.2183	-0.0234
SCIENCE	4	737138	8	3	2	2247	0.5176	0.2017	0.0878	0.5155	0.191	0.004	0.2205	-0.1457	-0.1554	0.2236	-0.0136	-0.0629
SCIENCE	4	743576	8	5	3	2254	0.5022	0.1534	0.1582	0.1857	0.5018	0.0009	0.4018	-0.1347	-0.1673	-0.2327	0.4025	-0.04
SCIENCE	4	737161	9	1	2	2282	0.5535	0.1044	0.2097	0.1311	0.5518	0.0031	0.4262	-0.2133	-0.207	-0.1823	0.4249	-0.005
SCIENCE	4	747012	9	1	2	2284	0.715	0.0848	0.0826	0.7134	0.1171	0.0022	0.4638	-0.2181	-0.2068	0.4653	-0.2816	-0.0467
SCIENCE	4	747014	9	1	2	2281	0.5204	0.1787	0.1263	0.173	0.5186	0.0035	0.4477	-0.1421	-0.2506	-0.2231	0.448	-0.0303
SCIENCE	4	739426	9	2	2	2282	0.5337	0.1673	0.5321	0.1027	0.1948	0.0031	0.3365	-0.169	0.3359	-0.2844	-0.0453	-0.005
SCIENCE	4	747018	9	3	2	2278	0.5755	0.055	0.5727	0.284	0.0834	0.0048	0.4165	-0.2437	0.4145	-0.2442	-0.1421	-0.0005
SCIENCE	4	743579	9	5	3	2284	0.4243	0.1512	0.2337	0.4233	0.1896	0.0022	0.2884	-0.2063	-0.1275	0.2882	-0.0363	-0.0068
SCIENCE	4	743526	10	1	2	2272	0.7077	0.1161	0.1214	0.7074	0.0546	0.0004	0.4761	-0.2619	-0.2901	0.4754	-0.1667	0.0121
SCIENCE	4	747013	10	1	2	2271	0.3104	0.2195	0.3102	0.2314	0.238	0.0009	0.2759	-0.0917	0.276	-0.0687	-0.142	-0.0099
SCIENCE	4	739419	10	2	2	2270	0.3564	0.187	0.3559	0.2609	0.1949	0.0013	0.1953	0.0096	0.1961	-0.1648	-0.0599	-0.0424
SCIENCE	4	747015	10	2	2	2267	0.4191	0.2024	0.2591	0.4179	0.1179	0.0026	0.2127	-0.203	-0.0698	0.2127	0.0233	-0.0054
SCIENCE	4	739401	10	3	2	2271	0.6028	0.1139	0.1703	0.1126	0.6023	0.0009	0.4171	-0.1511	-0.1839	-0.2744	0.4172	-0.0099
SCIENCE	4	747019	10	3	3	2271	0.4782	0.1672	0.1192	0.2349	0.4778	0.0009	0.4152	-0.1632	-0.2841	-0.1282	0.4146	0.0087
SCIENCE	4	741104	11	1	2	2304	0.7031	0.1157	0.7022	0.0858	0.0949	0.0013	0.4581	-0.2176	0.458	-0.29	-0.1977	-0.0168
SCIENCE	4	746577	11	1	2	2303	0.3335	0.2427	0.3329	0.2518	0.1708	0.0017	0.0187	0.0414	0.0179	0.0552	-0.1361	0.0244
SCIENCE	4	746580	11	1	2	4543	0.4629	0.2178	0.4622	0.1558	0.1626	0.0015	0.2781	-0.0817	0.2775	-0.2375	-0.0503	0.0012
SCIENCE	4	746581	11	1	2	2299	0.4224	0.1855	0.13	0.2601	0.4209	0.0035	0.4019	-0.2153	-0.3157	-0.0185	0.4002	0.007
SCIENCE	4	737134	11	2	2	2301	0.6119	0.6103	0.0867	0.1834	0.117	0.0026	0.435	0.4337	-0.2259	-0.2109	-0.2053	-0.0063

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
SCIENCE	4	739402	11	3	3	2306	0.366	0.3658	0.1283	0.1933	0.3121	0.0004	0.3296	0.3296	-0.2039	-0.2799	0.0432	-0.0049
SCIENCE	4	746579	12	1	3	2237	0.312	0.2153	0.2367	0.2341	0.3112	0.0027	0.1701	-0.0549	-0.0371	-0.0907	0.1711	-0.0481
SCIENCE	4	739423	12	2	2	2237	0.4421	0.2078	0.1115	0.4409	0.2372	0.0027	0.259	-0.0534	-0.2447	0.2593	-0.069	-0.0134
SCIENCE	4	739400	12	3	2	2239	0.3234	0.1266	0.4106	0.1382	0.3228	0.0018	0.1984	-0.1846	0.0985	-0.2301	0.1986	-0.0133
SCIENCE	4	746584	12	3	2	2233	0.4729	0.4708	0.107	0.2171	0.2006	0.0045	0.3845	0.3829	-0.1981	-0.2775	-0.0406	0.012
SCIENCE	4	739440	12	5	2	2240	0.4482	0.4476	0.1694	0.1302	0.2514	0.0013	0.3908	0.3909	-0.2137	-0.245	-0.0723	-0.0108
SCIENCE	8	401720	0	A	2	44861	0.3473	0.1266	0.2203	0.3045	0.3465	0.002	0.3562	-0.1916	-0.1949	-0.0518	0.3566	-0.03
SCIENCE	8	410883	0	A	2	44866	0.6552	0.654	0.081	0.1224	0.1408	0.0019	0.5224	0.5226	-0.2829	-0.341	-0.1681	-0.0277
SCIENCE	8	412150	0	A	2	44846	0.3961	0.12	0.292	0.3952	0.1906	0.0024	0.2829	-0.1093	-0.0343	0.2834	-0.2192	-0.0283
SCIENCE	8	494525	0	A	2	44883	0.4833	0.2209	0.1357	0.1593	0.4825	0.0015	0.3942	-0.1334	-0.2038	-0.1933	0.3948	-0.0355
SCIENCE	8	617345	0	A	2	44878	0.4475	0.4467	0.1611	0.12	0.2705	0.0016	0.4532	0.4536	-0.3339	-0.3123	0	-0.0317
SCIENCE	8	622822	0	A	2	44807	0.6039	0.1079	0.602	0.1698	0.1171	0.0032	0.5352	-0.2167	0.536	-0.3154	-0.2303	-0.0472
SCIENCE	8	622838	0	A	2	44874	0.6399	0.1577	0.1226	0.6387	0.0793	0.0017	0.3873	-0.2166	-0.173	0.3879	-0.1829	-0.0305
SCIENCE	8	623139	0	A	2	44868	0.6132	0.0737	0.6121	0.1666	0.1457	0.0019	0.5454	-0.2435	0.5457	-0.3468	-0.2029	-0.0339
SCIENCE	8	657833	0	A	2	44882	0.5861	0.1187	0.157	0.1376	0.5852	0.0016	0.4777	-0.1859	-0.1807	-0.3146	0.4784	-0.0384
SCIENCE	8	657836	0	A	2	44823	0.6287	0.0745	0.6268	0.0737	0.2221	0.0029	0.526	-0.2908	0.5272	-0.2962	-0.2372	-0.0496
SCIENCE	8	657837	0	A	2	44853	0.5871	0.0863	0.5858	0.124	0.2017	0.0022	0.4511	-0.2436	0.4521	-0.2671	-0.1603	-0.0406
SCIENCE	8	657839	0	A	2	44856	0.6705	0.669	0.0913	0.1539	0.0836	0.0021	0.5871	0.5876	-0.2411	-0.3325	-0.3079	-0.0399
SCIENCE	8	657843	0	A	2	44871	0.7262	0.0577	0.1066	0.109	0.7249	0.0018	0.551	-0.2116	-0.2805	-0.3495	0.5513	-0.0334
SCIENCE	8	657847	0	A	2	44876	0.3978	0.3971	0.1074	0.3216	0.1722	0.0017	0.3444	0.345	-0.2897	-0.1334	-0.0409	-0.0331
SCIENCE	8	657855	0	A	2	44852	0.6885	0.1163	0.1107	0.687	0.0837	0.0022	0.3204	-0.1123	-0.1547	0.3217	-0.2271	-0.0371
SCIENCE	8	658045	0	A	2	44827	0.6543	0.127	0.0958	0.1219	0.6525	0.0028	0.4498	-0.098	-0.2346	-0.3395	0.45	-0.0294
SCIENCE	8	661146	0	A	2	44746	0.5584	0.1404	0.5559	0.1573	0.1418	0.0046	0.4803	-0.1639	0.4806	-0.3021	-0.198	-0.0411
SCIENCE	8	661147	0	A	2	44839	0.5814	0.0757	0.2361	0.5799	0.1058	0.0025	0.4135	-0.2063	-0.1939	0.4144	-0.2137	-0.0382
SCIENCE	8	661148	0	A	2	44805	0.5974	0.1125	0.1227	0.1661	0.5954	0.0033	0.4598	-0.1288	-0.24	-0.2808	0.4601	-0.0334
SCIENCE	8	701295	0	A	2	44886	0.3837	0.1876	0.2151	0.2127	0.3831	0.0015	0.2929	-0.0464	-0.1148	-0.1865	0.2932	-0.0256
SCIENCE	8	498031	0	B	2	44852	0.6086	0.0359	0.6072	0.2157	0.139	0.0022	0.427	-0.2231	0.4275	-0.1667	-0.2814	-0.0289
SCIENCE	8	617343	0	B	2	44866	0.5557	0.5546	0.2632	0.091	0.0893	0.0019	0.4697	0.4703	-0.2442	-0.2919	-0.1423	-0.0386
SCIENCE	8	623868	0	B	2	44874	0.7341	0.0575	0.0648	0.1431	0.7328	0.0017	0.5211	-0.2173	-0.2246	-0.3527	0.5217	-0.0346

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
SCIENCE	8	653703	0	B	2	44887	0.6787	0.0793	0.6777	0.1334	0.1081	0.0014	0.5462	-0.2303	0.5463	-0.3361	-0.2505	-0.0263
SCIENCE	8	303367	0	C	2	44846	0.6167	0.1148	0.1295	0.6152	0.1381	0.0024	0.4733	-0.2339	-0.2311	0.4738	-0.2224	-0.034
SCIENCE	8	303678	0	C	2	44841	0.5784	0.577	0.1655	0.1748	0.0803	0.0025	0.4739	0.4744	-0.2496	-0.2627	-0.1481	-0.0321
SCIENCE	8	411601	0	C	2	44874	0.3854	0.272	0.2078	0.3847	0.1338	0.0017	0.2831	-0.073	-0.138	0.2838	-0.1411	-0.0378
SCIENCE	8	565993	0	C	2	44870	0.6762	0.0714	0.6749	0.1785	0.0734	0.0018	0.4202	-0.1885	0.4209	-0.2577	-0.1863	-0.0314
SCIENCE	8	574822	0	C	3	44869	0.4779	0.1381	0.1333	0.477	0.2498	0.0018	0.3089	-0.0847	-0.2105	0.3096	-0.1212	-0.0329
SCIENCE	8	623843	0	C	2	44857	0.4601	0.2626	0.1096	0.4591	0.1666	0.0021	0.356	-0.0498	-0.2725	0.3566	-0.1855	-0.0334
SCIENCE	8	623847	0	C	3	44866	0.389	0.2798	0.3882	0.0907	0.2393	0.0019	0.472	-0.1321	0.4724	-0.2469	-0.2306	-0.0373
SCIENCE	8	661151	0	C	2	44785	0.3985	0.397	0.2461	0.1943	0.1589	0.0037	0.3279	0.3288	-0.1612	-0.1428	-0.0888	-0.0405
SCIENCE	8	301242	0	D	2	44854	0.5241	0.1149	0.5229	0.1855	0.1745	0.0022	0.3755	-0.1218	0.3764	-0.229	-0.1536	-0.0391
SCIENCE	8	339836	0	D	2	44880	0.4595	0.4587	0.1124	0.3496	0.0777	0.0016	0.3911	0.3914	-0.2832	-0.0965	-0.2189	-0.0246
SCIENCE	8	623141	0	D	2	44872	0.5862	0.5852	0.1375	0.1507	0.1248	0.0018	0.3055	0.3063	-0.1115	-0.2815	-0.0319	-0.0299
SCIENCE	8	623150	0	D	2	44860	0.4716	0.1207	0.1328	0.2738	0.4706	0.002	0.4713	-0.239	-0.2288	-0.1755	0.4719	-0.0399
SCIENCE	8	623844	0	D	2	44905	0.5052	0.5047	0.2261	0.0934	0.1747	0.001	0.3467	0.347	-0.2175	-0.1626	-0.0908	-0.0212
SCIENCE	8	653706	0	D	2	44922	0.7803	0.0597	0.097	0.7798	0.0629	0.0007	0.4102	-0.2708	-0.2199	0.4104	-0.1663	-0.018
SCIENCE	8	739454	1	1	2	7766	0.32	0.1914	0.1922	0.2919	0.3179	0.0067	0.181	0.0135	-0.1104	-0.0976	0.1817	-0.0247
SCIENCE	8	739455	1	1	2	7771	0.4849	0.0904	0.2044	0.2172	0.482	0.006	0.4212	-0.2099	-0.1232	-0.2386	0.421	-0.0274
SCIENCE	8	743545	1	2	2	7800	0.2854	0.177	0.2609	0.2847	0.275	0.0023	0.0279	-0.1882	-0.1038	0.0287	0.2369	-0.0278
SCIENCE	8	749421	1	2	2	7802	0.4495	0.1177	0.2168	0.4486	0.2149	0.002	0.2435	-0.1588	-0.2134	0.2446	0.0466	-0.0368
SCIENCE	8	739458	1	3	2	11139	0.6829	0.1094	0.133	0.6807	0.0737	0.0032	0.3775	-0.1357	-0.2189	0.3781	-0.2212	-0.0315
SCIENCE	8	749424	1	4	2	7798	0.2902	0.2497	0.186	0.2723	0.2895	0.0026	0.0689	0.2589	-0.1855	-0.1562	0.0702	-0.0423
SCIENCE	8	739460	1	5	2	11142	0.4498	0.4485	0.1728	0.2228	0.1529	0.003	0.4812	0.4806	-0.1959	-0.1599	-0.2711	-0.0154
SCIENCE	8	741090	1	5	2	7802	0.438	0.1352	0.1905	0.2352	0.4371	0.002	0.3909	-0.1414	-0.0755	-0.2706	0.3915	-0.0315
SCIENCE	8	739453	2	1	2	3349	0.7172	0.0667	0.7155	0.1379	0.0775	0.0024	0.5212	-0.198	0.5205	-0.3155	-0.2833	-0.0187
SCIENCE	8	743531	2	1	2	3352	0.5316	0.1495	0.5308	0.1984	0.1197	0.0015	0.3471	-0.1837	0.3479	-0.1404	-0.1556	-0.0415
SCIENCE	8	739456	2	2	2	3354	0.5063	0.2014	0.1585	0.1335	0.5058	0.0009	0.5731	-0.3008	-0.2188	-0.252	0.5728	-0.0048
SCIENCE	8	749422	2	2	2	3350	0.3872	0.1195	0.3864	0.1749	0.3172	0.0021	0.2496	-0.1497	0.2507	-0.271	0.0678	-0.0469
SCIENCE	8	743555	2	3	2	3354	0.4994	0.2264	0.1683	0.499	0.1055	0.0009	0.3276	-0.1392	-0.1037	0.3281	-0.2155	-0.0276
SCIENCE	8	743566	2	3	2	3348	0.6541	0.6524	0.1448	0.1022	0.098	0.0027	0.5165	0.5159	-0.2959	-0.278	-0.1899	-0.018

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
SCIENCE	8	748367	3	1	2	3355	0.1928	0.1701	0.2498	0.3854	0.1924	0.0024	-0.0232	-0.1693	-0.0515	0.195	-0.0232	0.0034
SCIENCE	8	748370	3	1	2	3350	0.3991	0.234	0.3976	0.1757	0.1888	0.0039	0.1113	0.1387	0.1126	-0.1496	-0.14	-0.034
SCIENCE	8	743551	3	2	2	3361	0.3835	0.3158	0.1635	0.1368	0.3833	0.0006	0.3787	0.0175	-0.2745	-0.2629	0.3789	-0.0209
SCIENCE	8	741078	3	3	2	3357	0.6166	0.1154	0.0788	0.6155	0.1885	0.0018	0.4842	-0.2029	-0.2404	0.4846	-0.268	-0.0314
SCIENCE	8	743559	3	3	3	3355	0.5723	0.1534	0.5709	0.1219	0.1514	0.0024	0.3405	-0.1503	0.3417	-0.1139	-0.2109	-0.0431
SCIENCE	8	748372	3	3	2	3353	0.6004	0.1035	0.1799	0.1151	0.5986	0.003	0.5328	-0.236	-0.2627	-0.2712	0.5324	-0.0306
SCIENCE	8	748374	3	4	3	3353	0.3191	0.1344	0.2239	0.3182	0.3205	0.003	0.0724	-0.187	-0.1472	0.0732	0.1982	-0.0269
SCIENCE	8	741084	3	5	2	3359	0.4617	0.4612	0.218	0.1787	0.1409	0.0012	0.3715	0.3719	-0.0759	-0.2701	-0.143	-0.0245
SCIENCE	8	748368	4	1	2	3365	0.3584	0.2032	0.3572	0.1875	0.2488	0.0033	0.1953	-0.178	0.1955	-0.1503	0.0867	-0.0154
SCIENCE	8	748369	4	1	3	3369	0.2446	0.2441	0.396	0.2539	0.104	0.0021	0.2071	0.2074	0.024	-0.062	-0.238	-0.0259
SCIENCE	8	743550	4	2	2	3373	0.6045	0.1306	0.154	0.604	0.1105	0.0009	0.3933	-0.2186	-0.2099	0.3935	-0.1356	-0.0181
SCIENCE	8	748373	4	3	2	3367	0.5242	0.0788	0.2103	0.1854	0.5228	0.0027	0.5252	-0.205	-0.2283	-0.2911	0.5241	-0.008
SCIENCE	8	741087	4	5	2	3371	0.3735	0.1783	0.0889	0.3729	0.3584	0.0015	0.0225	0.091	-0.1833	0.0234	0.0151	-0.033
SCIENCE	8	741089	4	5	2	3369	0.5847	0.0702	0.0823	0.2618	0.5835	0.0021	0.3879	-0.1975	-0.2815	-0.1427	0.3876	-0.0104
SCIENCE	8	743586	4	5	2	3371	0.3942	0.1472	0.3937	0.2983	0.1594	0.0015	0.1555	-0.1356	0.1558	0.0749	-0.1688	-0.0154
SCIENCE	8	748375	4	5	2	3366	0.4872	0.1558	0.2127	0.4858	0.1428	0.003	0.3009	-0.1987	-0.0886	0.2994	-0.1204	0.0143
SCIENCE	8	748539	5	1	2	3383	0.1954	0.2594	0.3154	0.2275	0.1948	0.0029	0.1496	0.1437	-0.1423	-0.1312	0.15	-0.023
SCIENCE	8	748540	5	1	3	3385	0.5492	0.092	0.1612	0.1966	0.5479	0.0024	0.4788	-0.1892	-0.1816	-0.289	0.4801	-0.0536
SCIENCE	8	737136	5	2	2	3384	0.3644	0.4881	0.3634	0.0905	0.0554	0.0027	0.2663	-0.0177	0.2672	-0.2743	-0.1701	-0.04
SCIENCE	8	737141	5	3	2	3391	0.685	0.0737	0.6846	0.1323	0.1088	0.0006	0.5234	-0.2727	0.524	-0.2412	-0.288	-0.0331
SCIENCE	8	748542	5	3	2	3387	0.3029	0.1954	0.2626	0.3024	0.2378	0.0018	0.1554	-0.2019	-0.0344	0.1556	0.057	-0.0123
SCIENCE	8	737144	5	4	3	3384	0.6921	0.0925	0.1306	0.6902	0.084	0.0027	0.4829	-0.1675	-0.2908	0.4849	-0.2691	-0.0592
SCIENCE	8	743591	5	5	2	3383	0.6938	0.0504	0.1515	0.1034	0.6917	0.0029	0.4451	-0.1868	-0.2017	-0.2966	0.4468	-0.0515
SCIENCE	8	748545	5	5	2	3378	0.5879	0.5853	0.2042	0.1114	0.0946	0.0044	0.4763	0.4747	-0.2472	-0.2386	-0.1978	-0.019
SCIENCE	8	737157	6	1	2	3317	0.4266	0.3425	0.1706	0.4258	0.0593	0.0018	0.1041	0.1892	-0.2631	0.1059	-0.1728	-0.0562
SCIENCE	8	743536	6	1	2	3320	0.8051	0.8044	0.0512	0.1086	0.0349	0.0009	0.397	0.3973	-0.2312	-0.2168	-0.2104	-0.0189
SCIENCE	8	748538	6	1	2	3317	0.5704	0.0743	0.164	0.5694	0.1905	0.0018	0.3807	-0.2155	-0.1415	0.3817	-0.2	-0.0365
SCIENCE	8	737140	6	3	2	3319	0.505	0.3057	0.1231	0.5044	0.0656	0.0012	0.2605	-0.041	-0.1971	0.2613	-0.185	-0.035
SCIENCE	8	743565	6	3	2	3316	0.3549	0.2383	0.2735	0.3542	0.1318	0.0021	0.0886	-0.0319	-0.0039	0.09	-0.0757	-0.046

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
SCIENCE	8	748541	6	3	2	3317	0.448	0.207	0.2308	0.4472	0.1132	0.0018	0.2251	-0.1305	-0.1775	0.2251	0.0513	-0.0119
SCIENCE	8	748544	6	5	2	3317	0.7685	0.0807	0.7671	0.0858	0.0647	0.0018	0.4585	-0.2526	0.4593	-0.2501	-0.2191	-0.0337
SCIENCE	8	748546	6	5	3	3316	0.4931	0.1393	0.195	0.1715	0.492	0.0021	0.5019	-0.2087	-0.2297	-0.2306	0.502	-0.0173
SCIENCE	8	743534	7	1	2	3359	0.4519	0.4512	0.1528	0.2369	0.1576	0.0015	0.3944	0.3951	-0.1761	-0.1476	-0.1891	-0.0405
SCIENCE	8	743593	7	1	2	3358	0.5798	0.1269	0.1249	0.1677	0.5788	0.0018	0.3505	-0.1281	-0.1052	-0.2559	0.3494	0.0123
SCIENCE	8	743594	7	1	2	3349	0.7202	0.0657	0.717	0.052	0.1608	0.0045	0.3868	-0.0544	0.3859	-0.2363	-0.2899	-0.0209
SCIENCE	8	737135	7	2	2	3358	0.4768	0.4759	0.2259	0.2066	0.0898	0.0018	0.4571	0.4569	-0.161	-0.2225	-0.2459	-0.0125
SCIENCE	8	743597	7	2	3	3360	0.5223	0.1801	0.5217	0.1787	0.1183	0.0012	0.402	-0.166	0.4018	-0.2697	-0.1036	-0.0033
SCIENCE	8	741074	7	3	2	3357	0.3992	0.1219	0.2363	0.2414	0.3983	0.0021	0.3473	-0.2279	-0.1286	-0.0928	0.3478	-0.0309
SCIENCE	8	741083	7	3	2	3354	0.3772	0.376	0.2803	0.1192	0.2215	0.003	0.2143	0.2147	-0.1115	-0.2012	0.0305	-0.026
SCIENCE	8	743598	7	3	2	3358	0.374	0.3734	0.209	0.2108	0.2051	0.0018	0.3118	0.3118	-0.1897	-0.18	0.0008	-0.0146
SCIENCE	8	743595	8	1	2	3359	0.6032	0.0574	0.6021	0.1863	0.1525	0.0018	0.5089	-0.1509	0.5088	-0.3496	-0.2125	-0.0347
SCIENCE	8	743552	8	2	2	3356	0.3939	0.2954	0.1634	0.3929	0.1456	0.0027	0.052	0.1364	-0.1947	0.0528	-0.0422	-0.0226
SCIENCE	8	743596	8	2	2	3351	0.467	0.1406	0.1251	0.4651	0.2651	0.0042	0.2099	-0.1791	-0.2021	0.2115	0.0603	-0.0466
SCIENCE	8	743600	8	2	2	3354	0.3351	0.334	0.1376	0.3108	0.2143	0.0033	0.2809	0.2824	-0.2211	-0.0057	-0.1239	-0.062
SCIENCE	8	741076	8	3	2	3359	0.5787	0.0535	0.5777	0.2324	0.1346	0.0018	0.3906	-0.1632	0.3914	-0.1889	-0.2196	-0.0447
SCIENCE	8	743599	8	3	2	3351	0.2086	0.2077	0.3263	0.2892	0.1727	0.0042	0.0723	0.0748	-0.1091	0.0262	0.0385	-0.0874
SCIENCE	8	743582	8	5	2	3362	0.3974	0.397	0.3215	0.1724	0.1082	0.0009	0.3302	0.3302	0.0507	-0.2651	-0.2719	-0.0225
SCIENCE	8	743592	8	5	3	3361	0.319	0.0868	0.1403	0.3186	0.4532	0.0012	0.1648	-0.183	-0.2568	0.1657	0.131	-0.0508
SCIENCE	8	743535	9	1	3	3374	0.4911	0.1509	0.2707	0.4902	0.0864	0.0018	0.3325	-0.1936	-0.1328	0.333	-0.1322	-0.0235
SCIENCE	8	748347	9	1	2	3377	0.3094	0.1689	0.3456	0.1754	0.3092	0.0009	0.3263	-0.1866	-0.0452	-0.1554	0.3263	-0.0096
SCIENCE	8	748349	9	1	3	3360	0.5018	0.1536	0.4988	0.1997	0.142	0.0059	0.3505	-0.1861	0.3525	-0.2	-0.0699	-0.0624
SCIENCE	8	741080	9	3	2	3374	0.4191	0.1979	0.1698	0.4183	0.2121	0.0018	0.2253	-0.1491	-0.1452	0.2264	0.0096	-0.0404
SCIENCE	8	748353	9	3	2	3359	0.3087	0.1512	0.3068	0.2503	0.2855	0.0062	0.1706	-0.0682	0.1723	-0.0648	-0.0509	-0.0504
SCIENCE	8	748354	9	3	3	3366	0.3063	0.305	0.2944	0.1678	0.2287	0.0041	0.1911	0.1915	-0.0963	-0.088	-0.0237	-0.0222
SCIENCE	8	737148	9	5	2	3376	0.6964	0.0598	0.6956	0.1	0.1435	0.0012	0.4754	-0.1506	0.4763	-0.3039	-0.2594	-0.0396
SCIENCE	8	743587	9	5	2	6767	0.7138	0.0349	0.0696	0.7122	0.1811	0.0022	0.4254	-0.2008	-0.278	0.4268	-0.217	-0.0437
SCIENCE	8	748346	10	1	2	3390	0.5274	0.0894	0.2349	0.1467	0.5256	0.0035	0.4613	-0.2361	-0.1688	-0.2524	0.4624	-0.0457
SCIENCE	8	748348	10	1	2	3385	0.3332	0.1784	0.177	0.3316	0.3081	0.005	-0.095	-0.0244	-0.1221	-0.0944	0.2182	-0.0055

Content	Grade	PubID	Form	Stand	Depth	N	PValue	P(A)	P(B)	P(C)	P(D)	P(OMIT)	PtBis	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Corr (OMIT)
SCIENCE	8	743542	10	2	2	3393	0.4562	0.1499	0.455	0.0647	0.3277	0.0026	0.1646	-0.2932	0.1656	-0.0624	0.0831	-0.0277
SCIENCE	8	748351	10	2	2	3389	0.3862	0.3848	0.1673	0.2287	0.2155	0.0038	0.2075	0.208	-0.1866	-0.0583	-0.014	-0.0213
SCIENCE	8	748352	10	2	2	3396	0.5271	0.1493	0.1432	0.5262	0.1796	0.0018	0.3294	-0.0578	-0.2332	0.3296	-0.1603	-0.0179
SCIENCE	8	743554	10	3	2	3397	0.7392	0.0817	0.0673	0.7381	0.1114	0.0015	0.4061	-0.2465	-0.2833	0.4072	-0.1245	-0.036
SCIENCE	8	743561	10	3	2	3394	0.2737	0.174	0.3333	0.2172	0.2731	0.0024	0.227	-0.135	0.1024	-0.2353	0.2275	-0.0296
SCIENCE	8	745597	11	1	2	3396	0.409	0.1655	0.4077	0.1233	0.3003	0.0032	0.2222	-0.1367	0.2237	-0.2251	0.0379	-0.044
SCIENCE	8	743549	11	2	2	3402	0.6452	0.0611	0.0367	0.2565	0.6443	0.0015	0.4762	-0.1739	-0.2131	-0.3325	0.4767	-0.034
SCIENCE	8	745696	11	2	2	3397	0.4422	0.4409	0.1899	0.1368	0.2295	0.0029	0.1719	0.1726	-0.0809	-0.1176	-0.0294	-0.0225
SCIENCE	8	743557	11	3	2	3399	0.4519	0.4508	0.216	0.1694	0.1614	0.0023	0.4528	0.4538	-0.1271	-0.3135	-0.1435	-0.0636
SCIENCE	8	743562	11	3	2	3400	0.3826	0.4682	0.3819	0.0904	0.0575	0.0021	0.1632	0.1627	0.1633	-0.3329	-0.2775	-0.011
SCIENCE	8	745600	11	3	2	3397	0.5037	0.1488	0.1685	0.1776	0.5022	0.0029	0.2853	-0.0235	-0.1705	-0.1844	0.284	0.0119
SCIENCE	8	737143	11	4	2	3401	0.6595	0.0426	0.1415	0.6584	0.1559	0.0018	0.4342	-0.1875	-0.1229	0.4358	-0.3405	-0.0594
SCIENCE	8	745604	11	5	2	3395	0.5782	0.1371	0.5762	0.1145	0.1688	0.0035	0.3914	-0.2415	0.3928	-0.2643	-0.0648	-0.0443
SCIENCE	8	743532	12	1	2	3400	0.6888	0.124	0.1016	0.0852	0.688	0.0012	0.401	-0.1247	-0.2514	-0.2439	0.4017	-0.0284
SCIENCE	8	745596	12	1	2	3392	0.4458	0.1813	0.1683	0.4442	0.2027	0.0035	0.2535	-0.0749	-0.1679	0.2526	-0.0845	0.002
SCIENCE	8	743548	12	2	2	3403	0.6585	0.6583	0.1783	0.0978	0.0652	0.0003	0.4757	0.4759	-0.229	-0.232	-0.2787	-0.0176
SCIENCE	8	745599	12	2	2	3392	0.5531	0.2039	0.1639	0.5511	0.0776	0.0035	0.4332	-0.1742	-0.253	0.4339	-0.1854	-0.0398
SCIENCE	8	741082	12	3	2	3397	0.2508	0.2503	0.1645	0.3766	0.2065	0.0021	0.1149	0.1148	-0.153	0.0137	0.0012	-0.0034
SCIENCE	8	745601	12	3	2	3384	0.3434	0.3414	0.3108	0.1354	0.2065	0.0059	0.3823	0.3826	-0.1703	-0.2297	-0.051	-0.0441
SCIENCE	8	745602	12	3	3	3401	0.3461	0.1777	0.2027	0.2729	0.3458	0.0009	0.3901	-0.1623	-0.1655	-0.1267	0.3904	-0.0226
SCIENCE	8	743533	12	5	3	3397	0.6732	0.1354	0.1246	0.6719	0.0661	0.0021	0.4492	-0.1656	-0.314	0.4495	-0.1991	-0.0279

Evidence-Based Selected-Response Paper/Pencil Item Statistics

Column Heading	Definition
Content	Content Area
Grade	Grade
PubID	Item ID
Form	Form Number
Stand	Standard
Depth	Depth of Knowledge
N	N
Mean	Mean Score
P(0)	Proportion 0 Points
P(1)	Proportion 1 Point
P(2)	Proportion 2 Points
P(3)	Proportion 3 Points
P(OMIT)	Proportion Omits
PtBis	Point Biserial
Corr(0)	Correlation 0 Points
Corr(1)	Correlation 1 Point
Corr(2)	Correlation 2 Points
Corr(3)	Correlation 3 Points
Corr(OMIT)	Correlation Omits
Final	IRT Difficulty Estimate
Final Err	IRT Difficulty Error
Infit	Infit Standardized
Infit-MS	Infit Mean Square
Outfit	Outfit Standardized
Outfit-MS	Outfit Mean Square
M/F	Male/Female DIF Code
W/B	White/Black DIF Code
W/H	White/Hispanic DIF Code

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(OMIT)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr (OMIT)	Final	Final Err	Infit	Infit-MS	Outfit	Outfit-MS	M/F	W/B	W/H
ELA	3	660242	0	A-K	3	86460	1.4605	0.1562	0.3637	0.3261	0.1427	0.0112	0.5561	-0.2773	-0.318	0.2491	0.4195	-0.0929	0.7037	0.0292	9.9012	1.15	9.9011	1.1425	A-	A-	A+
ELA	3	710676	0	A-K	1	86179	1.2201	0.1677	0.4333	0.3846		0.0145	0.6027	-0.4811	-0.1046	0.5067		-0.1252	-0.207	0.0315	-2.449	0.9698	-2.239	0.9711	A-	A-	A-
ELA	3	625449	0	B-K	3	86687	1.4422	0.1297	0.4237	0.3079	0.1301	0.0086	0.4802	-0.2143	-0.2648	0.1633	0.406	-0.098	0.6769	0.0307	9.9012	1.2034	9.9012	1.2067	A+	A+	A+
ELA	3	663190	0	B-K	2	86625	0.661	0.5128	0.3009	0.1769		0.0094	0.41	-0.2837	-0.0304	0.4302		-0.0876	1.3237	0.0233	9.9012	1.1795	9.9013	1.331	A+	A-	A+
ELA	3	737077	1	A-K	3	9716	0.9522	0.3016	0.4404	0.254		0.0039	0.4277	-0.3608	0.0323	0.3488		-0.0366	0.5634	0.0729	4.0012	1.1518	4.1812	1.1646	A-	A+	A-
ELA	3	737078	1	A-K	2	9717	1.6927	0.1116	0.274	0.4193	0.1912	0.0038	0.5516	-0.3246	-0.3305	0.2213	0.3665	-0.0599	0.2524	0.0963	0.171	1.0061	-0.069	0.9969	A+	A-	A+
ELA	3	743442	2	A-K	3	9672	0.5424	0.5787	0.2917	0.1238		0.0059	-0.015	0.1249	-0.2313	0.1482		-0.0699	1.6139	0.0692	9.9017	1.6953	9.9021	2.0719	A-	A+	A+
ELA	3	743445	2	A-K	2	9620	1.8251	0.0878	0.2819	0.3346	0.2845	0.0112	0.6121	-0.3033	-0.3808	0.0749	0.5063	-0.0628	-0.0157	0.1135	-0.689	0.973	-1.189	0.9525	A+	A-	A-
ELA	3	743418	3	A-K	2	9699	2.0132	0.086	0.1927	0.3397	0.3777	0.0039	0.6199	-0.317	-0.3956	-0.0215	0.5318	-0.0439	-0.2871	0.1186	-4.1092	0.84	-3.7192	0.8417	A-	A-	B-
ELA	3	743420	3	A-K	2	9695	1.3675	0.1824	0.265	0.5483		0.0043	0.5995	-0.4143	-0.3142	0.6088		-0.0661	-0.3359	0.0906	-4.2692	0.8355	-3.1892	0.8209	A+	A-	A-
ELA	3	744007	4	A-K	2	9600	1.0889	0.2334	0.4385	0.3216		0.0065	0.4193	-0.3148	-0.0754	0.3766		-0.0668	0.2849	0.0794	2.6511	1.0971	2.6211	1.1011	A+	A+	A+
ELA	3	744094	4	A-K	3	9637	1.8888	0.0756	0.221	0.4392	0.2614	0.0027	0.5699	-0.3181	-0.3484	0.0921	0.424	-0.0644	-0.0975	0.1239	-1.5591	0.9378	-1.8391	0.9267	A+	A-	A-
ELA	3	745844	5	A-K	2	9624	0.9647	0.3323	0.3586	0.2974		0.0118	0.3655	-0.2611	-0.0724	0.3599		-0.063	0.6003	0.0732	7.2613	1.28	7.6413	1.3381	A+	A-	A+
ELA	3	745849	5	A-K	2	9675	1.5214	0.1026	0.4145	0.3321	0.1443	0.0066	0.4441	-0.3121	-0.154	0.1306	0.3226	-0.0532	0.4395	0.1058	2.7111	1.1099	2.8611	1.117	A+	A-	A-
ELA	3	747207	6	B-K	3	9727	1.6492	0.082	0.3191	0.4596	0.1342	0.005	0.4091	-0.2753	-0.2137	0.2022	0.2304	-0.0591	0.2777	0.1155	4.3212	1.1833	4.5312	1.1926	A-	A-	A-
ELA	3	747209	6	B-K	3	9718	0.9448	0.3719	0.305	0.3171		0.0059	0.4857	-0.362	-0.1014	0.4848		-0.0514	0.6495	0.0716	2.0911	1.075	2.3311	1.1028	A+	A+	A+
ELA	3	747249	7	B-K	2	9652	1.0661	0.3006	0.3274	0.3664		0.0056	0.407	-0.2798	-0.1499	0.419		-0.0433	0.4108	0.0743	5.1112	1.1903	4.4512	1.2	A-	A-	A+
ELA	3	747251	7	B-K	3	9672	1.6073	0.1235	0.3113	0.3947	0.167	0.0035	0.5484	-0.304	-0.3154	0.21	0.3945	-0.0633	0.4339	0.097	-0.899	0.9649	-1.099	0.9575	A-	A-	A-
ELA	3	747172	8	B-K	3	9664	1.9631	0.0722	0.1956	0.4248	0.3033	0.004	0.5701	-0.3115	-0.3498	0.0367	0.444	-0.0449	-0.2043	0.1247	-3.5591	0.8612	-3.3391	0.8668	A+	A-	A-
ELA	3	747175	8	B-K	3	9637	0.9417	0.2894	0.4723	0.2315		0.0068	0.2395	-0.1609	-0.0406	0.2328		-0.0601	0.6916	0.074	9.5514	1.3854	9.9014	1.4127	A+	A+	A+
ELA	3	745226	9	B-K	2	9574	1.7093	0.1027	0.3313	0.3116	0.2479	0.0064	0.5499	-0.2998	-0.2963	0.0785	0.4597	-0.0547	0.1751	0.1044	-1.279	0.9509	-1.3791	0.9454	A-	A-	A-
ELA	3	745232	9	B-K	3	9571	1.0973	0.3043	0.2881	0.4009		0.0067	0.4794	-0.3281	-0.203	0.5049		-0.0553	0.3329	0.0759	2.0711	1.076	3.6312	1.174	A-	A-	A-
ELA	4	660259	0	A-K	3	87999	0.9041	0.3833	0.3248	0.2878		0.0041	0.4607	-0.3415	-0.0781	0.4571		-0.0682	0.893	0.0205	9.9013	1.2933	9.9014	1.4374	A+	A+	A+
ELA	4	661072	0	A-K	3	87937	1.7275	0.1515	0.2432	0.3257	0.2749	0.0048	0.6394	-0.383	-0.3425	0.135	0.5101	-0.097	0.2958	0.0269	9.9012	1.1603	9.9012	1.1621	A+	A+	A+
ELA	4	663145	0	B-C	3	88057	1.0764	0.2704	0.3796	0.3466		0.0034	0.4441	-0.2843	-0.1833	0.4619		-0.0775	0.2613	0.0225	9.9013	1.3256	9.9016	1.5718	A-	A-	A+
ELA	4	711551	0	B-C	2	87811	1.5902	0.1482	0.2827	0.3911	0.1718	0.0062	0.5099	-0.2757	-0.2792	0.1668	0.3982	-0.1011	0.3965	0.0274	9.9013	1.2895	9.9013	1.329	A-	A-	A+
ELA	4	663150	0	B-K	3	88063	1.1361	0.2696	0.4215	0.2057	0.0998	0.0034	0.4226	-0.1895	-0.2083	0.1891	0.3829	-0.0726	1.0836	0.0223	9.9015	1.4723	9.9015	1.5194	A-	A-	A+
ELA	4	711547	0	B-K	3	87800	1.2298	0.2044	0.3564	0.4328		0.0063	0.5685	-0.4282	-0.1665	0.5263		-0.1049	-0.3014	0.0261	7.1111	1.0804	9.9011	1.1451	A-	A+	A+
ELA	4	743468	1	A-K	2	9814	1.7348	0.1245	0.2775	0.3326	0.2621	0.0033	0.5828	-0.335	-0.3159	0.1014	0.4727	-0.0636	0.0526	0.0806	2.1711	1.0739	2.1011	1.0742	A-	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(OMIT)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr (OMIT)	Final	Final Err	Infit	Infit-MS	Outfit	Outfit-MS	M/F	W/B	W/H
ELA	4	743470	1	A-K	3	9800	0.6651	0.4861	0.3565	0.1528		0.0047	0.2288	-0.173	0.0241	0.217		-0.0459	1.1338	0.0602	9.9016	1.5847	9.9019	1.8728	A+	A-	A-
ELA	4	747373	2	A-K	3	9781	1.3725	0.1173	0.4594	0.3542	0.0675	0.0017	0.2958	-0.216	-0.1056	0.1818	0.1464	-0.0378	0.7436	0.0866	9.8514	1.381	9.9014	1.3944	A+	A-	A-
ELA	4	747378	2	A-K	2	9743	0.2754	0.7813	0.1524	0.0607		0.0056	-0.0277	0.0876	-0.1382	0.0736		-0.0554	2.2932	0.0699	7.0214	1.3963	9.9031	3.1113	A+	A-	A-
ELA	4	744017	3	A-K	2	9784	1.4714	0.1943	0.3297	0.2801	0.1919	0.004	0.4037	-0.1461	-0.2853	0.0905	0.3935	-0.0588	0.5549	0.0744	9.9015	1.4731	9.9016	1.6283	A-	A-	A-
ELA	4	744019	3	A-K	3	9802	1.5041	0.1587	0.1774	0.6617		0.0021	0.5307	-0.3877	-0.2994	0.5454		-0.0435	-0.5956	0.0815	1.3211	1.0509	1.4011	1.0988	A+	A+	A+
ELA	4	744202	4	A-K	2	9760	1.7239	0.1426	0.2531	0.3379	0.263	0.0034	0.5544	-0.2876	-0.3291	0.0788	0.4774	-0.0659	0.1458	0.0838	1.6611	1.0565	2.2811	1.083	A-	A-	A-
ELA	4	744207	4	A-K	2	9768	0.9722	0.3263	0.3727	0.2985		0.0026	0.3626	-0.3095	0.0153	0.3069		-0.0544	0.5733	0.0638	8.0413	1.2681	9.0614	1.3536	A+	A+	A-
ELA	4	745887	5	B-K	3	9783	1.7255	0.0911	0.3103	0.3751	0.2192	0.0043	0.6425	-0.3334	-0.4096	0.1932	0.4747	-0.0692	0.0346	0.0984	-4.1591	0.8657	-3.6491	0.88	A-	A-	A-
ELA	4	745889	5	B-K	2	9793	1.0262	0.3559	0.2587	0.3821		0.0033	0.5243	-0.4121	-0.1171	0.5177		-0.0522	0.3898	0.0654	3.3411	1.1101	4.4612	1.2109	A-	A-	A-
ELA	4	747184	6	B-K	3	9801	1.7424	0.0908	0.3018	0.3773	0.2266	0.0035	0.4883	-0.3018	-0.2315	0.073	0.3856	-0.0653	-0.0013	0.1003	4.8512	1.1708	6.5412	1.2381	A+	A-	A-
ELA	4	747325	6	B-K	3	9808	1.1827	0.327	0.1611	0.5092		0.0027	0.4565	-0.3486	-0.2143	0.4899		-0.05	0.1183	0.0679	7.1713	1.2586	7.3115	1.465	A-	A+	A-
ELA	4	745356	7	B-K	3	9740	1.4039	0.1304	0.4941	0.2093	0.1616	0.0047	0.4332	-0.217	-0.1967	0.0685	0.3966	-0.0355	0.5222	0.0824	6.2312	1.224	6.9213	1.2694	A-	A-	A-
ELA	4	745358	7	B-K	3	9772	1.424	0.1716	0.2321	0.5949		0.0014	0.5016	-0.3797	-0.2292	0.4913		-0.0341	-0.4997	0.0813	1.4311	1.0537	1.7311	1.1053	A+	A+	A+
ELA	4	743421	8	B-K	2	9754	1.7152	0.1547	0.2757	0.2617	0.302	0.0058	0.5518	-0.2268	-0.3901	0.0408	0.5252	-0.0362	0.1302	0.082	5.7312	1.2073	7.5513	1.3175	A-	A-	A-
ELA	4	743422	8	B-K	2	9794	1.2828	0.2435	0.2289	0.5258		0.0017	0.569	-0.4459	-0.2089	0.5622		-0.0368	-0.1196	0.0718	1.8911	1.0653	2.8512	1.1579	A+	A-	A-
ELA	4	744866	9	B-K	3	9821	1.5025	0.1836	0.3038	0.3359	0.1745	0.0022	0.517	-0.3051	-0.2548	0.1823	0.4004	-0.0606	0.5346	0.0782	3.7211	1.1287	4.2112	1.1514	A+	A-	A-
ELA	4	744921	9	B-K	2	9805	0.9695	0.3839	0.2587	0.3536		0.0039	0.3971	-0.255	-0.2013	0.4508		-0.0536	0.5531	0.0641	6.5012	1.2156	7.2813	1.3482	A-	A-	A-
ELA	5	712269	0	A-C	3	85696	1.2804	0.1885	0.3397	0.4679		0.0038	0.5357	-0.4762	-0.0651	0.4423		-0.0584	-0.2772	0.0254	6.7311	1.0761	9.9012	1.2189	A+	A+	A+
ELA	5	711324	0	A-K	3	85747	1.0312	0.3279	0.3099	0.359		0.0032	0.5341	-0.4086	-0.1149	0.5192		-0.072	0.3507	0.0218	9.9012	1.1788	9.9013	1.3197	A+	A+	A+
ELA	5	712268	0	A-K	3	85866	1.9495	0.0663	0.1922	0.4652	0.2744	0.0019	0.6733	-0.3349	-0.4624	0.0855	0.5044	-0.0497	-0.2959	0.037	-9.0591	0.8962	-9.5391	0.89	A+	A-	A-
ELA	5	659284	0	B-C	2	85817	1.2888	0.2048	0.2999	0.4929		0.0024	0.6662	-0.4775	-0.2912	0.6582		-0.06	-0.1121	0.0241	-9.1391	0.9039	-7.5691	0.8964	A-	A+	A+
ELA	5	659208	0	B-K	3	85885	1.6607	0.0792	0.3559	0.3878	0.1755	0.0016	0.5921	-0.3292	-0.3499	0.2015	0.421	-0.0475	0.3249	0.0309	8.4711	1.0987	9.1811	1.1075	A+	A+	A+
ELA	5	712116	0	B-K	3	85632	1.0284	0.3927	0.299	0.1865	0.1172	0.0046	0.4213	-0.2201	-0.1672	0.1424	0.4142	-0.0692	1.1497	0.0212	9.9016	1.5821	9.9019	1.9253	A-	A-	A+
ELA	5	744024	1	A-C	3	9566	1.145	0.2193	0.4126	0.3636		0.0045	0.3968	-0.3801	0.0398	0.2904		-0.0302	0.0767	0.0666	4.3011	1.1403	5.4112	1.204	A+	A+	A+
ELA	5	744027	1	A-K	3	9594	1.7799	0.0685	0.2965	0.4198	0.2137	0.0016	0.5456	-0.2798	-0.3739	0.1789	0.3778	-0.0431	-0.0342	0.0909	-0.379	0.987	-0.469	0.9836	A+	A+	A+
ELA	5	743503	2	A-K	3	9548	1.604	0.1951	0.2599	0.2878	0.255	0.0021	0.4617	-0.1728	-0.3636	0.0766	0.4474	-0.0376	0.3111	0.076	9.9014	1.3718	9.8214	1.4207	A+	A+	A+
ELA	5	743506	2	A-K	3	9559	1.1051	0.3057	0.2826	0.4107		0.0009	0.3444	-0.2588	-0.1104	0.3453		-0.0309	0.2357	0.0664	9.9014	1.3774	9.9017	1.6845	A+	A+	A-
ELA	5	744180	3	A-K	3	9553	0.9307	0.3848	0.2974	0.3157		0.0021	0.3278	-0.2386	-0.0844	0.3371		-0.044	0.5922	0.0623	9.9014	1.3803	9.9016	1.6071	A+	A-	A-
ELA	5	744182	3	A-K	3	9564	1.2876	0.1703	0.4504	0.2991	0.0793	0.0009	0.3395	-0.2138	-0.1305	0.1875	0.2193	0.0073	0.8631	0.0757	9.9014	1.4116	9.9014	1.4377	A+	A-	A+

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(OMIT)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr (OMIT)	Final	Final Err	Infit	Infit-MS	Outfit	Outfit-MS	M/F	W/B	W/H
ELA	5	744666	4	A-K	2	9597	1.1492	0.2895	0.27	0.4384		0.0021	0.4051	-0.2851	-0.1803	0.4246		-0.0294	0.1663	0.0687	9.5313	1.3441	9.9016	1.5977	A+	A+	A+
ELA	5	744668	4	A-K	3	9595	1.3408	0.1662	0.3757	0.4055	0.0503	0.0023	0.418	-0.1901	-0.3171	0.3754	0.1919	-0.0403	0.9733	0.0801	7.0013	1.2595	7.4413	1.2858	A+	A-	A-
ELA	5	744038	5	A-K	3	9498	0.7605	0.3341	0.568	0.0952		0.0026	0.2151	-0.2204	0.1595	0.0908		-0.0325	1.3062	0.0619	9.5814	1.3599	9.9014	1.4198	A-	A+	A-
ELA	5	744039	5	A-K	3	9508	1.9164	0.0948	0.2405	0.3165	0.3466	0.0016	0.5727	-0.2875	-0.3178	-0.0743	0.5377	-0.032	-0.3037	0.1002	1.9411	1.0687	2.0111	1.0845	A+	A-	A-
ELA	5	744188	6	B-K	3	9549	1.6638	0.1208	0.0941	0.7835		0.0017	0.4956	-0.3705	-0.3263	0.5285		-0.0409	-1.019	0.0928	-0.139	0.9924	-0.049	0.9892	A+	A-	A+
ELA	5	744191	6	B-K	3	9544	1.6689	0.1469	0.2463	0.3949	0.2097	0.0022	0.5235	-0.3346	-0.2694	0.175	0.3717	-0.0497	0.2578	0.0838	4.9212	1.1759	5.8612	1.2202	A-	A-	A-
ELA	5	743448	7	B-K	3	9497	1.0638	0.3619	0.2075	0.4253		0.0053	0.468	-0.3237	-0.248	0.5203		-0.0154	0.3306	0.0667	7.8713	1.2854	8.8815	1.5329	A-	A+	A+
ELA	5	743449	7	B-K	3	9541	1.9271	0.0732	0.2717	0.3092	0.3452	0.0007	0.655	-0.3073	-0.4438	0.0282	0.5574	-0.0219	-0.3419	0.1043	-3.4591	0.8852	-1.129	0.9566	A-	A-	A-
ELA	5	743461	8	B-C	3	9504	0.6731	0.4709	0.382	0.1448		0.0023	0.2912	-0.2204	0.0298	0.2754		-0.0283	1.2908	0.0598	6.7012	1.2359	8.5714	1.3727	A+	A-	A+
ELA	5	743456	8	B-K	2	9519	1.4728	0.1245	0.4174	0.3178	0.1396	0.0007	0.399	-0.2432	-0.1671	0.1177	0.3126	-0.0162	0.4656	0.0846	8.4913	1.3132	9.2113	1.3449	A-	A-	A-
ELA	5	744095	9	B-C	3	9480	1.9949	0.0858	0.218	0.3099	0.3845	0.0018	0.5966	-0.2788	-0.362	-0.0956	0.5625	-0.0451	-0.3653	0.1027	-1.7591	0.9394	-2.1291	0.9155	A+	A-	A-
ELA	5	744048	9	B-K	3	9476	1.4483	0.1673	0.2159	0.6146		0.0022	0.5062	-0.3531	-0.2937	0.5223		-0.0328	-0.5033	0.0793	0.751	1.0272	4.6113	1.3039	A-	A-	A-
ELA	6	662381	0	A-K	3	78118	1.4057	0.2266	0.2288	0.4541	0.0888	0.0017	0.4826	-0.2741	-0.3072	0.3147	0.3148	-0.0595	1.1321	0.0228	9.9012	1.229	9.9013	1.3397	A+	A+	A-
ELA	6	712931	0	A-K	3	77930	1.2348	0.2134	0.3353	0.4472		0.0041	0.5618	-0.4698	-0.0976	0.4905		-0.0827	0.0016	0.0254	8.8811	1.0978	9.7411	1.1317	A+	A+	A+
ELA	6	712933	0	A-K	3	77940	1.3816	0.1316	0.4465	0.3242	0.0938	0.004	0.5567	-0.3669	-0.1767	0.2084	0.4106	-0.0853	0.7379	0.0295	6.3411	1.0736	7.5611	1.088	A-	A-	A-
ELA	6	711232	0	B-C	3	78002	1.6707	0.0805	0.3625	0.3586	0.1952	0.0032	0.5627	-0.2708	-0.3582	0.1654	0.4319	-0.0825	0.3463	0.0345	9.9011	1.1349	9.9011	1.1388	A+	A-	A+
ELA	6	710774	0	B-K	3	77947	1.0196	0.3484	0.2798	0.3679		0.0039	0.4675	-0.3405	-0.1491	0.4815		-0.0483	0.6839	0.0211	9.9013	1.2793	9.9014	1.4141	A-	A-	A-
ELA	6	711240	0	B-K	3	77996	0.8758	0.4248	0.271	0.301		0.0032	0.5824	-0.4378	-0.1147	0.5929		-0.0807	0.9128	0.0204	1.201	1.0122	5.2811	1.074	A-	A+	A+
ELA	6	744634	1	A-K	3	8730	0.9853	0.342	0.3288	0.3273		0.0018	0.2027	-0.0905	-0.1643	0.261		-0.0561	0.5766	0.0638	9.9016	1.5678	9.9018	1.8025	A+	A+	A+
ELA	6	744638	1	A-K	3	8740	1.8457	0.0763	0.2642	0.3963	0.2625	0.0007	0.5554	-0.3053	-0.2992	0.0182	0.4654	-0.0282	0.1441	0.094	0.421	1.0136	0.671	1.0225	A+	A-	A-
ELA	6	745215	2	A-K	2	8677	1.3838	0.171	0.418	0.2646	0.1447	0.0016	0.326	-0.2085	-0.0675	0.0043	0.3177	-0.0475	0.7713	0.0769	9.9014	1.3814	9.9015	1.4497	A+	A-	A-
ELA	6	745219	2	A-K	2	8674	0.778	0.4107	0.3983	0.189		0.002	0.2247	-0.1574	-0.0193	0.2264		-0.0391	1.1754	0.0595	9.9014	1.4119	9.9015	1.5343	A-	A+	A+
ELA	6	744214	3	A-K	3	8665	1.6541	0.1279	0.2917	0.3757	0.2024	0.0022	0.5346	-0.3164	-0.286	0.1603	0.399	-0.0493	0.4556	0.0869	1.8411	1.0623	2.6211	1.0916	A-	A-	A-
ELA	6	744217	3	A-K	3	8675	1.37	0.2054	0.2184	0.5751		0.001	0.4187	-0.2959	-0.2319	0.4379		-0.0357	-0.0367	0.0742	6.7212	1.2458	8.0215	1.5117	A-	A-	A-
ELA	6	744895	4	A-K	3	8674	1.0634	0.2921	0.3508	0.3554		0.0017	0.301	-0.2289	-0.0665	0.2865		-0.0326	0.5379	0.0653	8.9313	1.2944	9.9015	1.5081	A+	A+	A+
ELA	6	744899	4	A-K	3	8670	1.2045	0.3645	0.2421	0.2138	0.1774	0.0022	0.3746	-0.1167	-0.3405	0.1106	0.4141	-0.0315	1.0726	0.0646	9.9015	1.4879	9.9017	1.7468	A+	A-	A-
ELA	6	744657	5	A-K	3	8688	1.3162	0.2782	0.1269	0.5941		0.0008	0.4876	-0.3822	-0.257	0.5238		-0.014	0.0849	0.07	3.4311	1.1223	4.2713	1.3001	A+	A+	A+
ELA	6	744658	5	A-K	3	8679	1.5885	0.1382	0.2966	0.4009	0.1624	0.0018	0.4315	-0.2778	-0.2179	0.1891	0.2816	-0.0269	0.5192	0.0843	4.0111	1.1398	4.2912	1.1516	A+	A-	A+
ELA	6	743423	6	B-C	3	8683	0.636	0.5585	0.2449	0.195		0.0016	0.124	0.002	-0.2279	0.2477		-0.0283	1.4842	0.0608	9.9016	1.6095	9.9023	2.3261	A-	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(OMIT)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr (OMIT)	Final	Final Err	Infit	Infit-MS	Outfit	Outfit-MS	M/F	W/B	W/H
ELA	6	743424	6	B-K	3	8690	1.4479	0.2992	0.222	0.2093	0.2687	0.0008	0.5184	-0.2917	-0.2645	0.0317	0.522	-0.0294	0.7581	0.0683	8.3413	1.3105	9.9015	1.5468	A-	A-	A-
ELA	6	745345	7	B-K	3	8645	1.7328	0.1099	0.2742	0.3867	0.2273	0.0018	0.5024	-0.2731	-0.259	0.0441	0.432	-0.0367	0.2835	0.094	3.3111	1.1144	4.1111	1.1461	A-	A-	A+
ELA	6	745347	7	B-K	2	8644	1.2989	0.2719	0.1559	0.5703		0.002	0.5686	-0.4363	-0.2838	0.6039		-0.0423	0.0887	0.0694	-1.9991	0.9358	-0.519	0.9671	A-	A-	A-
ELA	6	745331	8	B-C	3	8698	0.9247	0.4418	0.1899	0.3666		0.0017	0.3681	-0.2661	-0.1607	0.4088		-0.0441	0.7955	0.0623	9.5913	1.3156	9.0115	1.4854	A+	A-	A-
ELA	6	745333	8	B-K	3	8695	1.2236	0.2711	0.3187	0.322	0.0861	0.0021	0.2073	-0.0385	-0.1887	0.0785	0.2524	-0.0535	1.2767	0.0666	9.9016	1.5639	9.9017	1.6887	A-	A-	A-
ELA	6	745822	9	B-K	3	8659	0.9466	0.2807	0.4901	0.2275		0.0017	0.3807	-0.279	-0.0363	0.3456		-0.0325	0.8025	0.0645	5.1612	1.1663	5.9312	1.199	A-	A-	A-
ELA	6	745823	9	B-K	2	8663	1.2519	0.3286	0.2657	0.2287	0.1757	0.0013	0.1348	0.0691	-0.2341	-0.0868	0.2843	-0.0218	1.0122	0.0656	9.902	1.9709	9.9023	2.3451	A+	A+	A-
ELA	7	625544	0	A-C	2	77649	1.1382	0.3373	0.1836	0.4749		0.0041	0.6356	-0.5067	-0.2068	0.6504		-0.0802	0.2801	0.0225	6.0911	1.0685	3.9211	1.0711	A+	A+	A+
ELA	7	623066	0	A-K	3	77824	1.1387	0.165	0.5297	0.3034		0.0019	0.4766	-0.4481	0.0319	0.3324		-0.056	0.4451	0.0236	6.1311	1.0664	8.2411	1.0912	A+	A+	A+
ELA	7	623070	0	A-K	2	77824	1.7644	0.0954	0.2485	0.45	0.2042	0.0019	0.5969	-0.324	-0.3751	0.175	0.4284	-0.0559	0.2872	0.0302	1.981	1.0226	2.031	1.0235	A+	A+	A+
ELA	7	662347	0	B-C	2	77739	1.6934	0.154	0.2129	0.4148	0.2153	0.003	0.6677	-0.3753	-0.3837	0.157	0.5337	-0.0766	0.2679	0.0285	-0.089	0.9989	1.041	1.0124	A-	A+	A+
ELA	7	662350	0	B-K	2	77731	0.8084	0.4492	0.2895	0.2582		0.0031	0.5195	-0.4296	0.0185	0.4785		-0.0742	1.0902	0.0205	9.9012	1.1689	9.9014	1.3617	A-	A+	A+
ELA	7	716186	0	B-K	3	77762	2.0507	0.1096	0.1655	0.2871	0.4352	0.0027	0.6883	-0.3513	-0.4688	-0.0418	0.6163	-0.0523	-0.0695	0.0298	-4.6091	0.9458	-6.0991	0.9142	A-	A-	A-
ELA	7	744891	1	A-C	3	8694	1.8254	0.1397	0.1497	0.4547	0.2547	0.0013	0.3653	-0.1015	-0.2844	-0.0873	0.4146	-0.0138	0.0969	0.0869	9.9016	1.5674	9.9018	1.7914	A+	A-	A+
ELA	7	744888	1	A-K	3	8676	1.1435	0.2791	0.2953	0.4222		0.0033	0.3745	-0.2244	-0.2296	0.4206		-0.0411	0.2399	0.0668	7.9713	1.277	9.9015	1.4993	A-	A-	A-
ELA	7	747194	2	A-K	3	8656	1.9517	0.0584	0.2166	0.4392	0.2852	0.0007	0.6182	-0.3029	-0.3996	0.0289	0.4922	-0.036	-0.2245	0.1196	-0.959	0.9662	-0.929	0.9662	A+	A-	A-
ELA	7	747196	2	A-K	3	8646	1.5003	0.1373	0.2242	0.6367		0.0018	0.547	-0.4245	-0.2435	0.5207		-0.0655	-0.5247	0.0854	-3.4191	0.8756	-2.3792	0.8492	A+	A+	A-
ELA	7	745208	3	A-K	3	8623	1.1036	0.3816	0.1296	0.4848		0.004	0.5468	-0.4359	-0.2343	0.586		-0.0387	0.4382	0.0671	4.6512	1.1684	4.7313	1.3422	A-	A-	A-
ELA	7	745209	3	A-K	3	8646	1.922	0.1528	0.1391	0.3399	0.3668	0.0014	0.5614	-0.343	-0.3064	-0.0137	0.4933	-0.0491	0.065	0.0832	3.6911	1.1375	3.4512	1.1632	A+	A-	A-
ELA	7	747229	4	A-K	3	8641	2.1285	0.0696	0.1304	0.4011	0.398	0.0008	0.592	-0.2784	-0.3949	-0.0953	0.5136	-0.0286	-0.343	0.1102	-3.4291	0.8771	-3.3891	0.8673	A+	A-	A-
ELA	7	747232	4	A-K	3	8626	0.9707	0.4757	0.0753	0.4465		0.0025	0.2264	-0.1384	-0.2941	0.2971		-0.0199	0.7154	0.0656	9.9018	1.7923	9.903	3.0068	A-	A-	A-
ELA	7	747149	5	B-K	3	8628	1.7965	0.1343	0.211	0.3783	0.2761	0.0003	0.5548	-0.254	-0.387	0.0536	0.4893	-0.0122	0.2188	0.0869	1.7611	1.0611	1.9711	1.0726	A-	A-	A-
ELA	7	747152	5	B-K	3	8621	0.9847	0.3827	0.2488	0.3674		0.0012	0.4648	-0.3677	-0.1014	0.4636		-0.0272	0.6966	0.064	6.2812	1.2146	8.1314	1.412	A-	A-	A+
ELA	7	744646	6	B-K	3	8666	1.4077	0.1778	0.3722	0.3143	0.1356	0.0002	0.4195	-0.255	-0.1559	0.1133	0.3516	-0.0094	0.7927	0.077	9.7414	1.3607	9.9014	1.3955	A-	A-	A-
ELA	7	744648	6	B-K	3	8652	1.0178	0.3346	0.3113	0.3523		0.0018	0.4444	-0.3258	-0.1251	0.4476		-0.0508	0.6239	0.0641	6.1912	1.2035	6.9313	1.2892	A-	A-	A-
ELA	7	744617	7	B-C	2	8649	0.8896	0.4248	0.26	0.3145		0.0007	0.3346	-0.2453	-0.0962	0.353		-0.0163	0.9054	0.0624	9.9014	1.4173	9.9016	1.6394	A+	A-	A-
ELA	7	744715	7	B-K	3	8640	1.973	0.0645	0.1882	0.4553	0.2902	0.0017	0.5958	-0.2696	-0.4026	0.0097	0.4858	-0.0419	-0.2066	0.1145	-1.7691	0.9379	-1.179	0.9572	A+	A-	A-
ELA	7	744873	8	B-K	2	8649	0.815	0.4114	0.3563	0.2273		0.0049	0.4628	-0.3343	-0.0528	0.4615		-0.0515	1.0642	0.0615	4.9812	1.1669	5.6212	1.2307	A-	A-	A+
ELA	7	744874	8	B-K	3	8681	1.3565	0.2042	0.364	0.3007	0.1298	0.0013	0.4205	-0.2333	-0.1846	0.1387	0.358	-0.0306	0.9147	0.0725	7.4513	1.27	8.5113	1.317	A-	A+	A-

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(OMIT)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr (OMIT)	Final	Final Err	Infit	Infit-MS	Outfit	Outfit-MS	M/F	W/B	W/H
ELA	7	747135	9	B-K	2	8608	1.1314	0.2056	0.4529	0.3363		0.0052	0.3946	-0.3241	-0.0383	0.3263		-0.0571	0.3498	0.0706	6.6512	1.2217	7.2113	1.2522	A+	A+	A+
ELA	7	747136	9	B-K	2	8634	1.2424	0.1576	0.4708	0.3392	0.0302	0.0022	0.2868	-0.2543	-0.0321	0.2106	0.065	-0.0462	1.3876	0.0778	9.2613	1.3498	9.5014	1.3597	A-	A-	A-
ELA	8	625573	0	A-C	2	76328	1.1487	0.2559	0.3367	0.4041		0.0033	0.5541	-0.4291	-0.1319	0.5179		-0.0802	0.001	0.0234	9.9012	1.1555	9.9012	1.226	A-	A+	A+
ELA	8	625572	0	A-K	3	76338	1.5399	0.1214	0.3569	0.3775	0.141	0.0032	0.5849	-0.3749	-0.2786	0.2652	0.3784	-0.0772	0.2114	0.0309	9.9012	1.1614	9.9012	1.1871	A-	A-	A-
ELA	8	712078	0	A-K	3	76406	1.5054	0.1316	0.2302	0.6359		0.0023	0.5566	-0.4712	-0.1843	0.4979		-0.0563	-0.7645	0.0293	-4.2691	0.9471	2.371	1.0482	A+	A+	A+
ELA	8	661121	0	B-C	2	76295	0.8048	0.4278	0.3351	0.2334		0.0037	0.3888	-0.2559	-0.0999	0.4214		-0.0737	0.9051	0.0204	9.9014	1.3982	9.9016	1.5683	A-	A+	A+
ELA	8	661131	0	B-K	2	76344	1.4384	0.1199	0.3634	0.4703	0.0433	0.0031	0.5059	-0.3433	-0.2661	0.4316	0.1377	-0.0701	0.7227	0.0301	9.9012	1.1684	9.9012	1.1703	A-	A+	A+
ELA	8	710689	0	B-K	3	76456	1.206	0.3218	0.3072	0.2114	0.158	0.0016	0.4399	-0.2261	-0.1772	0.0473	0.467	-0.0561	0.8775	0.022	9.9016	1.5975	9.9018	1.795	A-	A+	A+
ELA	8	745578	1	A-K	3	8617	1.0071	0.3132	0.3635	0.3203		0.003	0.544	-0.4465	-0.0317	0.4822		-0.0479	0.4316	0.0644	1.281	1.0409	1.7511	1.0654	A+	A+	A+
ELA	8	745580	1	A-K	3	8638	1.804	0.1156	0.186	0.4765	0.2213	0.0006	0.5951	-0.3111	-0.3916	0.1243	0.4594	-0.0385	-0.0669	0.0889	-0.179	0.9934	-0.389	0.9861	A+	A+	A-
ELA	8	745834	2	A-K	3	8490	1.0875	0.3076	0.3978	0.1924	0.1013	0.0008	0.2235	-0.0133	-0.2061	0.0258	0.3237	-0.0292	1.0102	0.065	9.9016	1.584	9.9017	1.7051	A+	A-	A-
ELA	8	745838	2	A-K	3	8484	0.9036	0.4439	0.2069	0.3477		0.0015	0.2449	-0.1359	-0.198	0.3125		-0.0281	0.6277	0.0627	9.9016	1.5956	9.902	2.0047	A+	A+	A+
ELA	8	747159	3	A-K	3	8504	1.4213	0.2201	0.1366	0.6401		0.0032	0.4179	-0.2646	-0.3604	0.4917		-0.0467	-0.4159	0.0751	6.0612	1.2431	9.9021	2.1406	A-	A+	A-
ELA	8	747162	3	A-K	3	8520	1.8859	0.1138	0.1595	0.4521	0.2732	0.0013	0.5472	-0.2775	-0.3498	0.019	0.465	-0.0122	-0.1335	0.0932	1.311	1.0468	2.3311	1.0884	A+	A-	A-
ELA	8	746416	4	A-K	3	8483	0.9293	0.3853	0.2977	0.3147		0.0022	0.4665	-0.3566	-0.0848	0.4617		-0.044	0.5891	0.0626	4.6511	1.149	5.4712	1.237	A+	A-	A-
ELA	8	746418	4	A-K	3	8498	1.6653	0.2745	0.1548	0.2009	0.3693	0.0005	0.4954	-0.2724	-0.2891	-0.0848	0.54	-0.0253	0.2381	0.0728	9.9015	1.4504	9.9017	1.7267	A-	B-	B-
ELA	8	737186	5	B-C	3	8461	1.0027	0.3657	0.2643	0.3684		0.0017	0.5096	-0.3812	-0.1536	0.5235		-0.0299	0.4708	0.0644	1.9811	1.0634	2.7411	1.1248	B-	A-	A-
ELA	8	737188	5	B-K	3	8454	1.7349	0.1108	0.289	0.3516	0.2461	0.0025	0.6353	-0.3402	-0.3856	0.1438	0.5001	-0.0504	-0.0067	0.0941	-3.8691	0.8749	-4.5292	0.8475	A-	A-	A-
ELA	8	745368	6	B-K	3	8450	1.1608	0.3244	0.188	0.4848		0.0027	0.5141	-0.4261	-0.1353	0.5097		-0.0453	0.1695	0.0676	3.9011	1.1327	5.1613	1.3138	A+	A+	A+
ELA	8	745370	6	B-K	2	8466	1.6455	0.1246	0.318	0.3436	0.213	0.0008	0.5653	-0.2665	-0.3475	0.1107	0.4849	-0.0449	0.1777	0.0883	2.5411	1.0872	2.4611	1.0881	A+	A-	A-
ELA	8	743425	7	B-K	3	8474	0.86	0.3995	0.3371	0.26		0.0034	0.4122	-0.3245	-0.0205	0.3877		-0.0245	0.8038	0.0619	7.0712	1.2363	9.9014	1.4427	A+	A-	A-
ELA	8	743426	7	B-K	3	8498	1.1611	0.1755	0.5779	0.1556	0.0904	0.0006	0.1923	-0.2075	0.129	-0.1283	0.2172	-0.0236	0.8701	0.0765	9.9016	1.6248	9.9017	1.7473	A-	A-	A-
ELA	8	744850	8	B-K	3	8498	1.5927	0.0942	0.3407	0.4409	0.1225	0.0016	0.4986	-0.2557	-0.3305	0.2645	0.3111	-0.049	0.2384	0.0963	2.8911	1.102	3.1911	1.1124	A+	A-	A-
ELA	8	744851	8	B-K	3	8484	0.9209	0.2993	0.4769	0.2205		0.0033	0.3156	-0.3027	0.1079	0.2096		-0.0381	0.6276	0.0651	9.0913	1.3149	9.9014	1.3908	A+	A+	A-
ELA	8	745382	9	B-C	3	8429	1.9794	0.0766	0.1696	0.4497	0.3022	0.0019	0.5684	-0.3053	-0.337	-0.0036	0.4607	-0.0485	-0.3685	0.1096	-0.539	0.9803	-1.269	0.953	A-	A-	A-
ELA	8	745379	9	B-K	3	8432	1.4166	0.1388	0.3049	0.5548		0.0015	0.4843	-0.269	-0.3509	0.5161		-0.0486	-0.5539	0.0838	0.701	1.0247	1.4311	1.0742	A-	A-	A-

Evidence-Based Selected-Response Computer-Based Item Statistics

Column Heading	Definition
Content	Content Area
Grade	Grade
PubID	Item ID
Form	Form Number
Stand	Standard
Depth	Depth of Knowledge
N	N
Mean	Mean Score
P(0)	Proportion 0 Points
P(1)	Proportion 1 Point
P(2)	Proportion 2 Points
P(3)	Proportion 3 Points
P(OMIT)	Proportion Omits
PtBis	Point Biserial
Corr(0)	Correlation 0 Points
Corr(1)	Correlation 1 Point
Corr(2)	Correlation 2 Points
Corr(3)	Correlation 3 Points
Corr(OMIT)	Correlation Omits

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(OMIT)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr (OMIT)
ELA	3	660242	0	A-K	3	26463	1.2745	0.2047	0.413	0.2848	0.0971	0.0003	0.5055	-0.2625	-0.2662	0.2826	0.3704	-0.016
ELA	3	710676	0	A-K	1	26454	1.1318	0.2013	0.465	0.333		0.0006	0.6164	-0.4903	-0.0985	0.5229		-0.0291
ELA	3	625449	0	B-K	3	26466	1.3595	0.1443	0.4418	0.3236	0.0901	0.0002	0.4479	-0.2004	-0.2623	0.2089	0.3604	-0.0146
ELA	3	663190	0	B-K	2	26456	0.5889	0.5573	0.2956	0.1465		0.0006	0.3939	-0.2952	0.0135	0.399		-0.0251
ELA	3	737077	1	A-K	3	6530	0.7802	0.3801	0.4591	0.1604		0.0003	0.3937	-0.3071	0.0444	0.3464		-0.0105
ELA	3	737078	1	A-K	2	6528	1.2875	0.1886	0.4077	0.3302	0.0729	0.0006	0.4892	-0.2591	-0.2835	0.3528	0.2888	-0.0117
ELA	3	743442	2	A-K	3	2499	0.5338	0.5804	0.3048	0.1144		0.0004	-0.0218	0.1246	-0.2335	0.1455		-0.0144
ELA	3	743445	2	A-K	2	2497	1.7377	0.0892	0.2936	0.406	0.21	0.0012	0.5302	-0.2532	-0.3592	0.1464	0.4018	0.0048
ELA	3	743418	3	A-K	2	2540	1.9358	0.0752	0.2028	0.4331	0.289		0.5251	-0.2437	-0.3867	0.0756	0.4021	
ELA	3	743420	3	A-K	2	2540	1.4173	0.1587	0.2654	0.576			0.537	-0.3533	-0.3258	0.5523		
ELA	3	744007	4	A-K	2	2492	1.1573	0.2106	0.4212	0.3678		0.0004	0.3952	-0.2974	-0.1028	0.3582		-0.0356
ELA	3	744094	4	A-K	3	2493	1.7806	0.0722	0.2547	0.4934	0.1797		0.5111	-0.3125	-0.3118	0.1889	0.3186	
ELA	3	745844	5	A-K	2	2497	0.968	0.3335	0.3647	0.3014		0.0004	0.3144	-0.2116	-0.1037	0.3277		-0.0355
ELA	3	745849	5	A-K	2	2498	1.4347	0.0997	0.4572	0.3519	0.0913		0.3553	-0.2727	-0.0922	0.1162	0.2505	
ELA	3	747207	6	B-K	3	2485	1.6241	0.0704	0.3449	0.4748	0.1099		0.3585	-0.2359	-0.2111	0.2107	0.1774	
ELA	3	747209	6	B-K	3	2485	0.897	0.3984	0.3062	0.2954			0.4781	-0.3701	-0.0711	0.469		
ELA	3	747249	7	B-K	2	2461	1.0073	0.3233	0.3457	0.3306		0.0004	0.3667	-0.242	-0.1462	0.3894		-0.0236
ELA	3	747251	7	B-K	3	2461	1.4579	0.1474	0.3452	0.4086	0.0983	0.0004	0.5141	-0.2763	-0.3191	0.3169	0.3165	-0.0188
ELA	3	747172	8	B-K	3	2470	1.9166	0.0583	0.2028	0.5028	0.236		0.4865	-0.2428	-0.3429	0.0994	0.3416	
ELA	3	747175	8	B-K	3	2470	0.9478	0.2676	0.517	0.2154			0.2185	-0.1306	-0.0717	0.2278		
ELA	3	745226	9	B-K	2	2491	1.6058	0.1052	0.3737	0.3312	0.1899		0.5092	-0.2711	-0.2959	0.1534	0.393	
ELA	3	745232	9	B-K	3	2491	1.1289	0.2842	0.3027	0.4131			0.4453	-0.305	-0.2008	0.4667		
ELA	4	660259	0	A-K	3	29404	0.8366	0.4123	0.3388	0.2488		0.0001	0.4768	-0.3498	-0.0746	0.4801		-0.0064
ELA	4	661072	0	A-K	3	29369	1.6345	0.1718	0.2603	0.3277	0.2389	0.0013	0.6436	-0.374	-0.3673	0.1866	0.5063	-0.0345
ELA	4	663145	0	B-C	3	29370	1.0332	0.2968	0.3719	0.33		0.0012	0.4316	-0.3071	-0.1229	0.4271		-0.0327
ELA	4	711551	0	B-C	2	29361	1.5277	0.1569	0.3063	0.3867	0.1486	0.0015	0.5287	-0.2863	-0.3047	0.2183	0.3937	-0.0436
ELA	4	663150	0	B-K	3	29391	1.0478	0.307	0.4166	0.197	0.0789	0.0005	0.3847	-0.1779	-0.1727	0.1758	0.363	-0.0233
ELA	4	711547	0	B-K	3	29384	1.1697	0.2122	0.4054	0.3817		0.0007	0.5754	-0.4137	-0.1899	0.5419		-0.033
ELA	4	743468	1	A-K	2	7458	1.3172	0.2043	0.39	0.2896	0.116	0.0001	0.5328	-0.277	-0.2616	0.2138	0.4446	-0.0047

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(OMIT)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr (OMIT)
ELA	4	743470	1	A-K	3	7457	0.5773	0.5301	0.3621	0.1075		0.0003	0.16	-0.1161	0.0164	0.1625		-0.0145
ELA	4	747373	2	A-K	3	2736	1.3728	0.1034	0.4817	0.3534	0.0614		0.2914	-0.163	-0.1685	0.2062	0.1468	
ELA	4	747378	2	A-K	2	2736	0.2449	0.8063	0.1425	0.0512			-0.015	0.0642	-0.1222	0.0788		
ELA	4	744017	3	A-K	2	2726	1.4633	0.1992	0.3118	0.3155	0.1735		0.3859	-0.1792	-0.2377	0.1081	0.3471	
ELA	4	744019	3	A-K	3	2726	1.5	0.1526	0.1948	0.6526			0.4703	-0.271	-0.3927	0.5313		
ELA	4	744202	4	A-K	2	2773	1.7602	0.1305	0.2456	0.357	0.2669		0.557	-0.3206	-0.3361	0.1312	0.4292	
ELA	4	744207	4	A-K	2	2773	0.9661	0.3199	0.3942	0.286			0.3217	-0.2566	-0.0221	0.2888		
ELA	4	745887	5	B-K	3	2743	1.7361	0.0918	0.2795	0.4289	0.1993	0.0004	0.5907	-0.3341	-0.351	0.1716	0.4246	-0.0323
ELA	4	745889	5	B-K	2	2742	1.0697	0.3393	0.2511	0.4089		0.0007	0.4545	-0.3639	-0.107	0.4463		-0.0282
ELA	4	747184	6	B-K	3	2717	1.8049	0.0754	0.2869	0.3943	0.2427	0.0007	0.5105	-0.3073	-0.2786	0.0877	0.3862	-0.0468
ELA	4	747325	6	B-K	3	2718	1.2093	0.3185	0.1534	0.5278		0.0004	0.4236	-0.3258	-0.2083	0.4559		-0.0372
ELA	4	745356	7	B-K	3	2756	1.3886	0.1662	0.4401	0.2326	0.1611		0.4224	-0.2327	-0.1782	0.0895	0.3734	
ELA	4	745358	7	B-K	3	2756	1.4797	0.1466	0.2271	0.6263			0.4929	-0.3637	-0.2526	0.4847		
ELA	4	743421	8	B-K	2	2746	1.8208	0.1216	0.2291	0.3562	0.2932		0.5124	-0.2371	-0.3428	0.0296	0.4555	
ELA	4	743422	8	B-K	2	2745	1.3301	0.2134	0.2429	0.5433		0.0004	0.5441	-0.3999	-0.2559	0.5503		-0.0292
ELA	4	744866	9	B-K	3	2746	1.4618	0.1813	0.3138	0.3662	0.1383	0.0004	0.4734	-0.2575	-0.2799	0.2303	0.3415	0.0125
ELA	4	744921	9	B-K	2	2747	0.9953	0.3618	0.281	0.3571			0.3764	-0.2302	-0.2177	0.4351		
ELA	5	712269	0	A-C	3	32001	1.2647	0.1958	0.3436	0.4604		0.0002	0.5446	-0.4545	-0.1179	0.4747		-0.0174
ELA	5	711324	0	A-K	3	31995	0.9515	0.3665	0.3151	0.318		0.0004	0.5534	-0.4334	-0.0834	0.5326		-0.0226
ELA	5	712268	0	A-K	3	32004	1.8463	0.089	0.2085	0.4694	0.2329	0.0001	0.6723	-0.3712	-0.4312	0.1531	0.4842	-0.0177
ELA	5	659284	0	B-C	2	32003	1.2733	0.2201	0.2864	0.4933		0.0002	0.6593	-0.4818	-0.2821	0.6546		-0.0122
ELA	5	659208	0	B-K	3	31972	1.6099	0.0857	0.371	0.3893	0.1528	0.0011	0.5658	-0.3189	-0.3219	0.209	0.3991	-0.0209
ELA	5	712116	0	B-K	3	31989	1.0588	0.3744	0.3114	0.194	0.1196	0.0006	0.3952	-0.1733	-0.2159	0.1259	0.4157	-0.0339
ELA	5	744024	1	A-C	3	7776	0.8859	0.3668	0.3801	0.2527		0.0004	0.4603	-0.3923	0.0412	0.3896		-0.0137
ELA	5	744027	1	A-K	3	7777	1.358	0.1627	0.4186	0.3162	0.1022	0.0003	0.5282	-0.2917	-0.2711	0.2808	0.3667	-0.0131
ELA	5	743503	2	A-K	3	3042	1.5773	0.2156	0.241	0.2939	0.2495		0.4379	-0.1813	-0.3305	0.07	0.4253	
ELA	5	743506	2	A-K	3	3042	1.0874	0.3199	0.2728	0.4073			0.2968	-0.2138	-0.1176	0.3095		
ELA	5	744180	3	A-K	3	3036	0.9888	0.36	0.2912	0.3488			0.3393	-0.2454	-0.1103	0.3522		
ELA	5	744182	3	A-K	3	3036	1.2599	0.164	0.4825	0.2829	0.0705		0.2735	-0.1674	-0.1037	0.1491	0.1823	

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(OMIT)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr (OMIT)
ELA	5	744666	4	A-K	2	3018	1.1673	0.2777	0.2773	0.445			0.351	-0.2501	-0.1529	0.3632		
ELA	5	744668	4	A-K	3	3018	1.447	0.1415	0.3224	0.4838	0.0524		0.4072	-0.1994	-0.3167	0.3604	0.168	
ELA	5	744038	5	A-K	3	3028	0.7493	0.3421	0.5664	0.0915			0.2303	-0.2103	0.1197	0.1403		
ELA	5	744039	5	A-K	3	3028	2.0482	0.0657	0.211	0.3326	0.3907		0.5395	-0.263	-0.3034	-0.1227	0.5058	
ELA	5	744188	6	B-K	3	3031	1.713	0.1043	0.0785	0.8172			0.4668	-0.3408	-0.3409	0.5068		
ELA	5	744191	6	B-K	3	3031	1.6457	0.1323	0.2778	0.4018	0.1881		0.4815	-0.2994	-0.2772	0.2116	0.312	
ELA	5	743448	7	B-K	3	3020	1.0944	0.353	0.1997	0.4474			0.4613	-0.3178	-0.2667	0.5199		
ELA	5	743449	7	B-K	3	3020	1.9437	0.0768	0.2517	0.3225	0.349		0.613	-0.3515	-0.3535	0.0097	0.5086	
ELA	5	743461	8	B-C	3	3015	0.6942	0.458	0.3897	0.1522			0.3196	-0.2687	0.0779	0.2668		
ELA	5	743456	8	B-K	2	3015	1.457	0.1294	0.4116	0.3317	0.1274		0.3841	-0.2402	-0.159	0.1343	0.287	
ELA	5	744095	9	B-C	3	3039	2.0378	0.0632	0.2303	0.3119	0.3945		0.6	-0.2126	-0.4085	-0.1348	0.5855	
ELA	5	744048	9	B-K	3	3039	1.4442	0.1639	0.228	0.6081			0.5171	-0.3611	-0.2971	0.5291		
ELA	6	662381	0	A-K	3	39439	1.4345	0.1971	0.2619	0.4486	0.0913	0.0011	0.4589	-0.2292	-0.3295	0.3002	0.305	-0.0326
ELA	6	712931	0	A-K	3	39458	1.1945	0.2226	0.3598	0.417		0.0006	0.5865	-0.4706	-0.1295	0.5252		-0.0439
ELA	6	712933	0	A-K	3	39451	1.3092	0.1486	0.474	0.2956	0.081	0.0008	0.5698	-0.3734	-0.1786	0.2453	0.4075	-0.0414
ELA	6	711232	0	B-C	3	39456	1.6656	0.0792	0.3573	0.3814	0.1815	0.0007	0.5361	-0.2667	-0.3289	0.145	0.4152	-0.0315
ELA	6	710774	0	B-K	3	39477	1.0295	0.3284	0.3136	0.3579		0.0001	0.4442	-0.2897	-0.2056	0.4832		-0.0175
ELA	6	711240	0	B-K	3	39462	0.8846	0.4333	0.2482	0.318		0.0005	0.6224	-0.4791	-0.1355	0.6372		-0.0366
ELA	6	744634	1	A-K	3	9067	0.8956	0.3604	0.3836	0.256			0.2396	-0.1168	-0.1527	0.2987		
ELA	6	744638	1	A-K	3	9067	1.4927	0.141	0.3713	0.3418	0.1459		0.5333	-0.2851	-0.2596	0.1359	0.4538	
ELA	6	745215	2	A-K	2	3822	1.4414	0.1622	0.4011	0.2698	0.1669		0.3039	-0.2281	-0.0409	0.0075	0.2703	
ELA	6	745219	2	A-K	2	3822	0.808	0.4108	0.3705	0.2187			0.2264	-0.1814	0.0086	0.2057		
ELA	6	744214	3	A-K	3	3791	1.7043	0.1163	0.2812	0.3843	0.2181		0.5072	-0.3097	-0.2577	0.1122	0.3888	
ELA	6	744217	3	A-K	3	3791	1.3521	0.2076	0.2327	0.5597			0.4041	-0.2649	-0.2585	0.4365		
ELA	6	744895	4	A-K	3	3826	1.1124	0.2527	0.382	0.365		0.0003	0.2771	-0.1931	-0.0973	0.2734		-0.0264
ELA	6	744899	4	A-K	3	3827	1.324	0.3264	0.2177	0.2616	0.1944		0.4098	-0.2017	-0.29	0.1432	0.3823	
ELA	6	744657	5	A-K	3	3802	1.3738	0.2512	0.1239	0.6249			0.449	-0.3272	-0.3082	0.5028		
ELA	6	744658	5	A-K	3	3801	1.7306	0.111	0.263	0.41	0.2157	0.0003	0.4316	-0.2497	-0.2535	0.1258	0.3134	-0.0442
ELA	6	743423	6	B-C	3	3826	0.6607	0.5489	0.2415	0.2096			0.1801	-0.0519	-0.2167	0.2913		

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ELA	6	743424	6	B-K	3	3826	1.541	0.2723	0.2117	0.2185	0.2974		0.5383	-0.3278	-0.2822	0.0829	0.4965	
ELA	6	745345	7	B-K	3	3760	1.788	0.0713	0.2971	0.404	0.2277		0.4693	-0.2258	-0.289	0.0571	0.3867	
ELA	6	745347	7	B-K	2	3760	1.3822	0.2367	0.1444	0.6189			0.536	-0.4089	-0.2956	0.5718		
ELA	6	745331	8	B-C	3	3822	1.0445	0.3837	0.1878	0.4282		0.0003	0.3214	-0.2047	-0.2297	0.3833		-0.025
ELA	6	745333	8	B-K	3	3822	1.1889	0.2854	0.3194	0.3157	0.0793	0.0003	0.1858	-0.0416	-0.1555	0.0589	0.2378	-0.0195
ELA	6	745822	9	B-K	3	3764	1.0053	0.2654	0.4639	0.2707			0.3558	-0.2763	-0.0331	0.3117		
ELA	6	745823	9	B-K	2	3762	1.348	0.2837	0.2723	0.2553	0.1881	0.0005	0.0623	0.1218	-0.1935	-0.136	0.2325	-0.0139
ELA	7	625544	0	A-C	2	40869	1.0707	0.3686	0.1913	0.4393		0.0008	0.653	-0.5161	-0.2178	0.6764		-0.037
ELA	7	623066	0	A-K	3	40889	1.0929	0.1904	0.526	0.2833		0.0003	0.5191	-0.4727	0.0355	0.3735		-0.0236
ELA	7	623070	0	A-K	2	40881	1.7144	0.0941	0.2758	0.4512	0.1785	0.0005	0.5482	-0.2831	-0.3474	0.171	0.4007	-0.0294
ELA	7	662347	0	B-C	2	40871	1.6786	0.1411	0.2402	0.4168	0.2012	0.0008	0.6745	-0.3621	-0.4222	0.202	0.5178	-0.0261
ELA	7	662350	0	B-K	2	40860	0.6921	0.5143	0.2779	0.2067		0.001	0.4948	-0.4055	0.0345	0.4647		-0.0307
ELA	7	716186	0	B-K	3	40892	2.0752	0.1234	0.1516	0.2512	0.4735	0.0002	0.6796	-0.3701	-0.4425	-0.0785	0.6302	-0.0118
ELA	7	744891	1	A-C	3	8642	1.6707	0.1429	0.2104	0.4795	0.1669	0.0002	0.3629	-0.0747	-0.2979	-0.0219	0.4258	-0.0176
ELA	7	744888	1	A-K	3	8643	0.9874	0.3398	0.3329	0.3272		0.0001	0.4469	-0.2642	-0.243	0.5111		-0.0088
ELA	7	747194	2	A-K	3	4010	2.0217	0.0494	0.185	0.4601	0.3055		0.6033	-0.2988	-0.4045	0.0161	0.4641	
ELA	7	747196	2	A-K	3	4009	1.5266	0.1324	0.2085	0.6589		0.0002	0.5466	-0.4177	-0.2677	0.5276		0.013
ELA	7	745208	3	A-K	3	4036	1.0788	0.3883	0.1447	0.467			0.5596	-0.4359	-0.2581	0.6078		
ELA	7	745209	3	A-K	3	4035	1.8934	0.1729	0.1541	0.2792	0.3935	0.0002	0.5227	-0.3139	-0.3122	0.0058	0.4688	-0.013
ELA	7	747229	4	A-K	3	4027	2.1594	0.0688	0.1274	0.3793	0.4243	0.0002	0.5441	-0.2425	-0.3971	-0.0777	0.4691	-0.0262
ELA	7	747232	4	A-K	3	4027	0.9362	0.4958	0.072	0.432		0.0002	0.2391	-0.1359	-0.362	0.3267		-0.0199
ELA	7	747149	5	B-K	3	4041	1.7842	0.1267	0.2148	0.4061	0.2524		0.5141	-0.2457	-0.3491	0.0751	0.4333	
ELA	7	747152	5	B-K	3	4041	0.954	0.4049	0.2363	0.3588			0.4252	-0.3463	-0.0733	0.4193		
ELA	7	744646	6	B-K	3	4052	1.4538	0.1562	0.3712	0.3351	0.1375		0.3598	-0.2009	-0.1296	0.0324	0.3494	
ELA	7	744648	6	B-K	3	4052	1.0101	0.3243	0.3413	0.3344			0.4106	-0.295	-0.1204	0.4137		
ELA	7	744617	7	B-C	2	4043	0.9065	0.399	0.2949	0.3056		0.0005	0.3287	-0.238	-0.0879	0.3416		-0.0349
ELA	7	744715	7	B-K	3	4045	2.0841	0.0494	0.1572	0.4532	0.3402		0.5597	-0.2351	-0.3794	-0.0708	0.4734	
ELA	7	744873	8	B-K	2	4022	0.8411	0.4099	0.3381	0.2512		0.0007	0.4677	-0.3644	-0.0315	0.4465		0.0185
ELA	7	744874	8	B-K	3	4025	1.3446	0.2052	0.3585	0.3227	0.1135		0.4258	-0.2564	-0.1848	0.1973	0.315	

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ELA	7	747135	9	B-K	2	4021	1.0875	0.2077	0.4971	0.2952			0.3767	-0.3538	0.0439	0.2665		
ELA	7	747136	9	B-K	2	4020	1.2373	0.1472	0.4964	0.3278	0.0284	0.0002	0.2547	-0.19	-0.0723	0.19	0.0882	-0.0246
ELA	8	625573	0	A-C	2	41427	1.1189	0.2682	0.3441	0.3871		0.0006	0.5476	-0.4214	-0.1345	0.5164		-0.0397
ELA	8	625572	0	A-K	3	41414	1.5266	0.1419	0.3282	0.39	0.139	0.0009	0.5874	-0.4139	-0.2465	0.2827	0.3565	-0.0353
ELA	8	712078	0	A-K	3	41445	1.508	0.1341	0.2238	0.642		0.0001	0.5907	-0.485	-0.2266	0.5421		-0.015
ELA	8	661121	0	B-C	2	41416	0.8007	0.421	0.3563	0.2218		0.0008	0.407	-0.2804	-0.0779	0.426		-0.0418
ELA	8	661131	0	B-K	2	41419	1.4497	0.1182	0.3617	0.471	0.0483	0.0008	0.4786	-0.3367	-0.2522	0.4129	0.1163	-0.0419
ELA	8	710689	0	B-K	3	41431	1.186	0.3067	0.3524	0.1881	0.1523	0.0005	0.4147	-0.1882	-0.1934	0.0452	0.4513	-0.0289
ELA	8	745578	1	A-K	3	8199	0.7977	0.4154	0.3712	0.2131		0.0002	0.5164	-0.4126	0.0234	0.4697		-0.0199
ELA	8	745580	1	A-K	3	8201	1.5852	0.1525	0.2759	0.4053	0.1662		0.5947	-0.2815	-0.4051	0.2198	0.4685	
ELA	8	745834	2	A-K	3	4112	1.1491	0.2709	0.4197	0.1987	0.1107		0.1891	0.0001	-0.1725	-0.0206	0.2974	
ELA	8	745838	2	A-K	3	4112	0.8872	0.4475	0.2179	0.3346			0.1867	-0.0631	-0.2448	0.2806		
ELA	8	747159	3	A-K	3	4152	1.4911	0.202	0.1047	0.693		0.0002	0.4095	-0.2727	-0.3652	0.4806		-0.0225
ELA	8	747162	3	A-K	3	4152	1.9607	0.0961	0.1623	0.4262	0.3152	0.0002	0.5363	-0.2492	-0.3746	-0.0008	0.4569	-0.0225
ELA	8	746416	4	A-K	3	4154	0.9933	0.3445	0.3178	0.3377			0.4459	-0.3229	-0.1318	0.4542		
ELA	8	746418	4	A-K	3	4154	1.7641	0.2405	0.1642	0.1861	0.4092		0.4443	-0.219	-0.2971	-0.1017	0.4947	
ELA	8	737186	5	B-C	3	4164	0.9974	0.3734	0.2558	0.3708			0.5081	-0.4035	-0.1099	0.5034		
ELA	8	737188	5	B-K	3	4162	1.8301	0.0886	0.2791	0.3453	0.2865	0.0005	0.6107	-0.2863	-0.421	0.0964	0.497	-0.015
ELA	8	745368	6	B-K	3	4152	1.1597	0.3205	0.1991	0.4801		0.0002	0.5095	-0.4176	-0.1461	0.5077		-0.0278
ELA	8	745370	6	B-K	2	4153	1.7171	0.1267	0.2757	0.3516	0.2461		0.5558	-0.3037	-0.3102	0.0818	0.4657	
ELA	8	743425	7	B-K	3	4150	0.8311	0.4147	0.3395	0.2458			0.4031	-0.3063	-0.0395	0.3939		
ELA	8	743426	7	B-K	3	4150	1.1971	0.1427	0.6193	0.1364	0.1017		0.2052	-0.2027	0.0861	-0.1048	0.2153	
ELA	8	744850	8	B-K	3	4165	1.6703	0.0864	0.3164	0.4373	0.1596	0.0002	0.4859	-0.2521	-0.3344	0.2285	0.3087	-0.0038
ELA	8	744851	8	B-K	3	4163	0.9681	0.2487	0.5338	0.2168		0.0007	0.3117	-0.3017	0.0991	0.1983		-0.0268
ELA	8	745382	9	B-C	3	4198	2.1098	0.0576	0.1403	0.4366	0.3654		0.5364	-0.2673	-0.3469	-0.0576	0.439	
ELA	8	745379	9	B-K	3	4198	1.4826	0.1374	0.2425	0.6201			0.4572	-0.2817	-0.32	0.4824		

Open-Ended Paper/Pencil Item Statistics

Column Heading	Definition
Content	Content Area
Grade	Grade
PubID	Item ID
Form	Form Number
Stand	Standard
Depth	Depth of Knowledge
N	N
Mean	Mean Score
P(0)	Proportion 0 Points
P(1)	Proportion 1 Point
P(2)	Proportion 2 Points
P(3)	Proportion 3 Points
P(4)	Proportion 4 Points
P(OMIT)	Proportion Omits
P(INV)	Proportion Invalid Responses
PtBis	Point Biserial
Corr(0)	Correlation 0 Points
Corr(1)	Correlation 1 Point
Corr(2)	Correlation 2 Points
Corr(3)	Correlation 3 Points
Corr(4)	Correlation 4 Points
Corr(OMIT)	Correlation Omits
Corr(INV)	Correlation Invalid Responses
Final	IRT Difficulty Estimate
Final Err	IRT Difficulty Error
Infit	Infit Standardized
Infit-MS	Infit Mean Square
Outfit	Outfit Standardized
Outfit-MS	Outfit Mean Square
M/F	Male/Female DIF Code
W/B	White/Black DIF Code
W/H	White/Hispanic DIF Code

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(OMIT)	P(INV)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr(4)	Corr (OMIT)	Corr (INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
ELA	3	713654	0	A-K	3	81044	1.3444	0.1072	0.4481	0.3166	0.0549		0.028	0.0452	0.5825	-0.3757	-0.105	0.4116	0.2582		-0.1984	-0.2362	1.0255	0.0275	-9.8992	0.8074	-9.8992	0.8117	A+	A-	A-
ELA	3	633106	0	B-K	3	82608	1.2373	0.2343	0.3207	0.3208	0.0688		0.0182	0.0371	0.6756	-0.4563	-0.0757	0.4598	0.3371		-0.1694	-0.2578	0.6801	0.0288	-9.0791	0.8865	-8.9091	0.8872	A+	A-	A-
ELA	3	738106	1	A-K	3	797	1.4831	0.063	0.4691	0.3382	0.0958		0.017	0.017	0.5997	-0.3029	-0.3115	0.3594	0.3561		-0.1732	-0.1808	0.6498	0.0933	-5.1192	0.8063	-5.2492	0.8018	A+	A-	A-
ELA	3	744517	2	A-K	3	808	1.5755	0.0679	0.3939	0.4036	0.1139		0.0061	0.0145	0.6197	-0.2955	-0.3928	0.3596	0.3717		-0.0949	-0.1745	0.4715	0.1127	-5.2192	0.8051	-5.3192	0.802	C+	A-	A+
ELA	3	744503	3	A-K	3	800	1.5888	0.1006	0.3442	0.3782	0.1467		0.0145	0.0158	0.6269	-0.3828	-0.3028	0.3435	0.3674		-0.1252	-0.1811	0.4947	0.0995	-4.1892	0.8442	-4.1992	0.8446	A+	A+	A+
ELA	3	745854	4	A-K	3	796	1.3769	0.1224	0.457	0.2848	0.1006		0.017	0.0182	0.6418	-0.3987	-0.2129	0.3462	0.3931		-0.1038	-0.1822	0.7798	0.0935	-4.9992	0.8101	-4.9692	0.81	B+	A-	A-
ELA	3	748377	5	A-K	3	800	1.3938	0.1055	0.4594	0.3224	0.0824		0.0194	0.0109	0.661	-0.3573	-0.3017	0.4264	0.3742		-0.1866	-0.1573	0.7622	0.0965	-6.5992	0.7563	-6.6092	0.7555	B+	NA	A-
ELA	3	749031	6	B-C	3	803	1.3537	0.08	0.5648	0.2327	0.0958		0.017	0.0097	0.5859	-0.3079	-0.269	0.334	0.373		-0.1548	-0.143	0.717	0.1034	-3.6392	0.8493	-3.4492	0.85	A+	A+	A-
ELA	3	749259	7	B-K	3	796	1.3731	0.097	0.4933	0.2921	0.0824		0.0133	0.0218	0.5599	-0.2563	-0.2856	0.3965	0.3149		-0.1731	-0.1943	0.8708	0.0951	-2.9191	0.8827	-3.2591	0.8686	A+	A+	A+
ELA	3	749245	8	B-K	3	799	1.5307	0.0679	0.4388	0.3418	0.12		0.0133	0.0182	0.5804	-0.2899	-0.3237	0.3369	0.354		-0.1275	-0.1995	0.5182	0.1059	-3.8291	0.8543	-3.7991	0.8542	B+	A+	A-
ELA	3	747651	9	B-C	3	799	1.4819	0.1067	0.4097	0.3309	0.1212		0.0158	0.0158	0.6282	-0.3473	-0.2728	0.3397	0.3975		-0.1842	-0.203	0.6833	0.0929	-4.8892	0.819	-4.8892	0.8193	A+	NA	A-
MATH	3	565863	0	A-T	2	86012	2.1746	0.0868	0.1813	0.2722	0.3732	0.0774	0.0076	0.0015	0.7457	-0.4281	-0.4126	-0.0484	0.4523	0.3486	-0.098	-0.0604	0.2627	0.0413	-9.8992	0.8376	-5.9191	0.9128	A-	A-	A-
MATH	3	499220	0	B-O	2	85325	1.7867	0.2067	0.2497	0.2021	0.1955	0.129	0.0138	0.0032	0.8037	-0.5494	-0.295	0.1261	0.3918	0.4719	-0.0795	-0.0838	0.8248	0.0291	-9.8992	0.8436	-9.8992	0.8328	A+	A-	A-
MATH	3	652779	0	C-G	3	85392	2.121	0.1083	0.2059	0.2641	0.2692	0.1362	0.0099	0.0064	0.7088	-0.4379	-0.3224	-0.0101	0.3387	0.4159	-0.1273	-0.1176	0.4522	0.0341	-1.399	0.9811	1.121	1.0157	B+	A-	A-
MATH	3	712332	1	B-O	3	812	1.4667	0.3552	0.1952	0.1903	0.1067	0.137	0.0145	0.0012	0.7641	-0.641	-0.0666	0.2224	0.3036	0.4729	-0.0726	-0.0496	1.1592	0.0779	-4.0192	0.8257	-5.1393	0.731	A+	A-	A+
MATH	3	716155	2	D-M	3	803	1.8593	0.1818	0.2	0.2764	0.2036	0.1115	0.0218	0.0048	0.785	-0.5471	-0.2854	0.1028	0.4144	0.4073	-0.0669	-0.0875	0.6965	0.0928	-5.4192	0.7947	-5.2192	0.7953	A-	NA	A-
MATH	3	738923	3	A-F	3	799	2.035	0.1903	0.1806	0.1964	0.2073	0.1939	0.0267	0.0048	0.7426	-0.5063	-0.252	0.0188	0.3081	0.4824	-0.1287	-0.0957	0.4982	0.0908	-1.9391	0.9194	-0.989	0.9522	A+	NA	A-
MATH	3	738727	4	C-G	3	790	1.9658	0.1236	0.2279	0.2667	0.2364	0.103	0.0315	0.0109	0.6979	-0.4497	-0.2776	0.0515	0.3654	0.3746	-0.0841	-0.1227	0.6749	0.0989	-2.0091	0.9202	-2.2391	0.9085	A+	A-	A-
MATH	3	738726	5	A-F	3	808	2.0656	0.057	0.3091	0.2642	0.2109	0.1382	0.0194	0.0012	0.6728	-0.3107	-0.4008	-0.0453	0.3169	0.4307	0.0089	-0.0552	0.3798	0.13	0.881	1.0361	0.761	1.032	B+	B-	A+
MATH	3	743721	6	D-M	3	800	1.6075	0.1915	0.3442	0.1818	0.1576	0.0945	0.0279	0.0024	0.71	-0.4475	-0.279	0.1647	0.3757	0.3925	-0.018	-0.075	1.2112	0.0851	-1.3691	0.9425	-1.8491	0.9201	A+	A-	NA
MATH	3	743720	7	B-O	3	807	1.9715	0.1927	0.2097	0.1952	0.1939	0.1867	0.0194	0.0024	0.7951	-0.5993	-0.2245	0.024	0.3235	0.5099	-0.0324	-0.0776	0.5876	0.0902	-5.5892	0.7828	-5.7892	0.7535	A+	NA	A-
MATH	3	705670	8	A-T	3	800	1.6288	0.1915	0.3479	0.1503	0.1891	0.0909	0.023	0.0073	0.7058	-0.4441	-0.2467	0.2055	0.3397	0.4124	-0.1371	-0.144	1.1126	0.0847	-2.8891	0.8825	-3.1891	0.864	A+	NA	A-
MATH	3	737277	9	A-T	3	807	1.6791	0.1867	0.2727	0.257	0.1915	0.0703	0.0158	0.0061	0.7498	-0.5691	-0.1901	0.184	0.3796	0.3581	-0.0352	-0.1351	1.1566	0.0884	-5.0792	0.8065	-5.1192	0.8014	A+	A-	NA
MATH	4	628162	0	B-O	3	86666	1.7448	0.1953	0.2512	0.227	0.2453	0.0718	0.0074	0.0021	0.7883	-0.564	-0.2576	0.1222	0.4518	0.3899	-0.0939	-0.0647	0.5803	0.0296	-9.8992	0.8098	-9.8992	0.8157	A+	A-	A-
MATH	4	716157	0	C-G	3	85588	1.6915	0.1936	0.262	0.2494	0.1991	0.0741	0.0133	0.0084	0.7139	-0.5073	-0.2027	0.154	0.3983	0.3467	-0.1377	-0.1221	0.656	0.0282	-0.009	0.9998	0.101	1.0013	A+	A-	A-
MATH	4	628158	0	D-M	2	85285	1.3402	0.2345	0.3943	0.1721	0.1273	0.0465	0.0211	0.0041	0.7608	-0.4992	-0.2066	0.2907	0.4444	0.3405	-0.0816	-0.0836	1.0774	0.0267	-9.8992	0.8144	-9.8992	0.797	A+	A-	A-
MATH	4	743760	1	A-F	3	801	1.6554	0.2642	0.2521	0.1261	0.2109	0.1176	0.0206	0.0085	0.6984	-0.5068	-0.1649	0.1287	0.3666	0.4016	-0.1143	-0.1124	0.5938	0.0783	0.521	1.0228	-0.099	0.9942	A+	A+	A+
MATH	4	737273	2	A-T	3	813	1.8315	0.2485	0.1988	0.1879	0.1709	0.1794	0.0121	0.0024	0.758	-0.605	-0.161	0.092	0.2559	0.5102	0.0036	-0.0543	0.4524	0.085	-1.2891	0.9459	-1.3091	0.9367	A+	A-	NA
MATH	4	738728	3	A-T	3	802	1.2369	0.2182	0.4776	0.1382	0.1042	0.0339	0.023	0.0048	0.7077	-0.5088	-0.0882	0.3217	0.3705	0.2913	-0.1212	-0.066	1.2913	0.0817	-2.7191	0.8813	-3.5292	0.848	A+	NA	NA

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(OMIT)	P(INV)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr(4)	Corr (OMIT)	Corr (INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	4	738844	4	B-O	3	798	1.2268	0.3382	0.2824	0.1745	0.1333	0.0388	0.023	0.0097	0.7614	-0.6318	0.0221	0.3043	0.4134	0.2971	-0.0774	-0.1312	1.3321	0.0764	-4.3292	0.822	-4.9392	0.7748	A+	A+	A-
MATH	4	743722	5	C-G	3	806	1.7382	0.16	0.263	0.2945	0.1915	0.0679	0.0218	0.0012	0.6714	-0.4654	-0.2085	0.1097	0.3411	0.3651	-0.0842	-0.0383	0.5657	0.0952	-0.199	0.9914	-0.309	0.987	A+	C-	C-
MATH	4	737280	6	C-G	3	816	1.5453	0.2436	0.3091	0.1939	0.1382	0.1042	0.0085	0.0024	0.7216	-0.5279	-0.1736	0.1824	0.3321	0.4298	-0.0938	-0.054	0.6297	0.083	-2.5091	0.8975	-3.0791	0.8672	B+	A-	A-
MATH	4	715925	7	D-M	3	808	0.7104	0.56	0.2461	0.1055	0.0327	0.0352	0.0133	0.0073	0.6424	-0.5873	0.2566	0.3642	0.2329	0.2682	-0.0998	-0.1206	1.8475	0.0739	-2.2691	0.8827	-4.1393	0.7495	A+	A-	B-
MATH	4	738843	8	A-T	3	803	1.4421	0.1479	0.4424	0.2473	0.0764	0.0594	0.0242	0.0024	0.7241	-0.4803	-0.2617	0.3204	0.3432	0.3432	-0.0392	-0.0818	0.9445	0.0896	-4.6092	0.8089	-5.0492	0.7934	A+	NA	A-
MATH	4	737279	9	A-F	3	811	1.9001	0.1976	0.257	0.1552	0.1927	0.1806	0.0097	0.0073	0.7564	-0.5293	-0.2411	0.0426	0.3008	0.5128	-0.0376	-0.1364	0.348	0.0889	-2.7991	0.885	-3.2192	0.8496	A+	A-	NA
MATH	5	716158	0	A-T	3	82857	1.4934	0.212	0.3407	0.2293	0.1095	0.0812	0.0253	0.002	0.7259	-0.4914	-0.1865	0.1948	0.3577	0.4135	-0.0928	-0.0597	0.8775	0.0271	2.091	1.0292	-0.459	0.9933	A+	A+	A+
MATH	5	577938	0	B-O	2	83523	2.1176	0.1595	0.194	0.2009	0.2238	0.2023	0.0164	0.0031	0.7415	-0.4587	-0.2812	-0.0604	0.2488	0.5531	-0.1453	-0.0728	0.1464	0.0312	-0.179	0.9974	4.8711	1.0766	B+	A+	A+
MATH	5	313770	0	D-M	2	84415	2.0125	0.1591	0.2278	0.216	0.2177	0.1703	0.0063	0.0027	0.767	-0.4974	-0.3232	0.0223	0.3088	0.51	-0.0889	-0.0726	-0.0413	0.0351	0.061	1.0007	6.6211	1.1008	A+	A-	A-
MATH	5	737281	1	A-T	3	806	2.0174	0.1794	0.2339	0.1539	0.2097	0.2	0.0218	0.0012	0.7206	-0.4971	-0.2834	0.0666	0.264	0.4869	-0.101	-0.0247	0.2731	0.0826	-2.9791	0.8763	-2.6491	0.8723	A-	A-	A+
MATH	5	738845	2	A-T	3	804	1.8072	0.1455	0.2982	0.2145	0.2315	0.0848	0.0194	0.0061	0.7145	-0.4279	-0.3392	0.1084	0.4206	0.356	-0.0485	-0.1086	0.5825	0.0927	-1.3391	0.9457	-1.4191	0.9414	B+	A-	NA
MATH	5	714447	3	C-G	3	794	0.7884	0.4739	0.3139	0.1006	0.0521	0.0218	0.0315	0.0061	0.5584	-0.4482	0.1546	0.2288	0.3072	0.2208	-0.0809	-0.041	2.0431	0.071	2.9912	1.1558	2.4811	1.1364	A+	A-	NA
MATH	5	759414	4	C-G	3	813	1.9779	0.1006	0.2933	0.2509	0.2085	0.1321	0.0097	0.0048	0.6528	-0.3802	-0.3043	-0.0009	0.3201	0.4057	-0.0807	-0.0891	0.2785	0.1069	0.391	1.0152	1.7211	1.0734	A+	C-	A-
MATH	5	716159	5	B-O	3	803	1.2653	0.3055	0.3164	0.183	0.1248	0.0436	0.0242	0.0024	0.7544	-0.5883	-0.0672	0.3435	0.382	0.3227	-0.1275	-0.0636	1.3119	0.0761	-4.5292	0.8164	-5.5192	0.7689	A+	A+	A-
MATH	5	738922	6	D-M	3	814	1.2322	0.3564	0.2933	0.1539	0.1176	0.0655	0.0061	0.0073	0.7542	-0.6479	0.0254	0.2428	0.4152	0.347	-0.0058	-0.094	1.1398	0.0759	-3.2591	0.8622	-4.1892	0.8079	A-	NA	A-
MATH	5	737282	7	D-M	3	812	1.335	0.2145	0.4388	0.1988	0.0509	0.0812	0.0121	0.0036	0.7111	-0.5062	-0.1614	0.3277	0.2204	0.4276	-0.0274	-0.0857	0.9899	0.0818	-3.1091	0.8646	-3.4992	0.8462	A-	A-	A-
MATH	5	705674	8	A-F	3	798	1.2782	0.223	0.4194	0.1976	0.0873	0.04	0.0218	0.0109	0.6984	-0.4825	-0.1192	0.3386	0.3297	0.316	-0.1102	-0.1352	1.3457	0.0776	-2.8491	0.8793	-3.3691	0.8598	A+	A-	A-
MATH	5	659262	9	A-F	3	802	1.0835	0.3491	0.3321	0.1782	0.0861	0.0267	0.0194	0.0085	0.6438	-0.4953	0.0342	0.2655	0.3564	0.2663	-0.0998	-0.1168	1.8469	0.0734	-1.1791	0.9486	-1.3791	0.9384	A+	NA	A-
MATH	6	712887	0	A-N	3	76974	1.7093	0.2386	0.2493	0.1862	0.1813	0.1295	0.0098	0.0054	0.795	-0.556	-0.235	0.1111	0.3728	0.5011	-0.1023	-0.0874	0.8024	0.0271	-1.879	0.9738	-4.0191	0.9408	A+	A-	A-
MATH	6	661689	0	B-E	3	76510	1.7674	0.1219	0.2757	0.3409	0.189	0.0514	0.015	0.0061	0.7681	-0.4214	-0.3736	0.1322	0.4643	0.3749	-0.1255	-0.0922	0.7711	0.0337	-9.8992	0.8242	-9.8992	0.8316	A+	A-	A-
MATH	6	480016	0	D-S	3	75756	1.1642	0.3095	0.3648	0.1632	0.0898	0.042	0.0246	0.0062	0.7576	-0.5355	-0.0632	0.2943	0.4128	0.3663	-0.0963	-0.0934	1.3604	0.0255	-9.8992	0.8192	-9.8992	0.7827	A-	A-	A-
MATH	6	707608	1	A-N	3	745	0.8067	0.4065	0.4247	0.0649	0.0597	0.0117	0.0247	0.0078	0.6229	-0.5081	0.2548	0.2156	0.3478	0.2003	-0.1591	-0.1	2.1018	0.0697	0.281	1.0132	-1.5991	0.9223	A-	A-	A-
MATH	6	737631	2	A-R	3	751	1.1491	0.2809	0.446	0.1261	0.0702	0.0533	0.0182	0.0052	0.6912	-0.4885	-0.0521	0.3247	0.3186	0.359	-0.1364	-0.0858	1.4346	0.0764	-0.959	0.9558	-2.1891	0.9036	A+	A+	NA
MATH	6	745398	3	C-G	3	758	1.1293	0.3299	0.4039	0.1	0.0948	0.0558	0.0104	0.0052	0.7412	-0.5447	-0.0318	0.2684	0.3753	0.4104	-0.0793	-0.0685	1.4435	0.0737	-3.8592	0.8273	-4.5792	0.7959	A-	A+	A+
MATH	6	743714	4	B-E	3	761	0.6452	0.4247	0.5143	0.0286	0.0169	0.0039	0.0091	0.0026	0.6751	-0.6426	0.5095	0.2474	0.2035	0.1287	-0.0917	-0.0742	3.0249	0.0697	-4.7692	0.7759	-6.2493	0.742	A+	A-	NA
MATH	6	738930	5	A-R	3	752	1.6436	0.2714	0.2312	0.1481	0.226	0.1	0.0117	0.0117	0.746	-0.5707	-0.1196	0.1262	0.3471	0.4622	-0.1032	-0.1242	0.8003	0.082	-2.3891	0.9013	-2.6891	0.8766	A-	B-	NA
MATH	6	713930	6	D-S	3	750	1.232	0.2896	0.3831	0.1623	0.0636	0.0753	0.0221	0.0039	0.7667	-0.5438	-0.0754	0.2956	0.3347	0.4482	-0.1506	-0.0567	1.2885	0.0783	-4.7992	0.7992	-5.5792	0.7673	A-	B-	NA
MATH	6	737632	7	D-S	3	754	1.191	0.2078	0.5195	0.1403	0.0805	0.0312	0.0156	0.0052	0.723	-0.4394	-0.1712	0.3423	0.4054	0.3189	-0.1166	-0.0885	1.4687	0.083	-4.7492	0.7959	-5.3192	0.7759	A+	B-	A-
MATH	6	760060	8	A-N	3	752	1.7407	0.2156	0.2429	0.2117	0.1922	0.1143	0.0182	0.0052	0.7234	-0.4441	-0.3117	0.1297	0.3463	0.456	-0.0957	-0.0761	0.6855	0.0843	-2.0291	0.9185	-1.9191	0.9192	A+	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(OMIT)	P(INV)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr(4)	Corr (OMIT)	Corr (INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
MATH	6	738733	9	C-G	3	756	1.4352	0.2649	0.3377	0.1481	0.1494	0.0818	0.0104	0.0078	0.7547	-0.5686	-0.1176	0.2199	0.3675	0.4246	-0.1004	-0.0989	0.968	0.0808	-1.8091	0.9225	-1.9191	0.9142	A+	B-	A-
MATH	7	658588	0	A-R	3	77174	1.7174	0.2758	0.1592	0.1994	0.2497	0.0925	0.0156	0.0079	0.779	-0.5813	-0.2149	0.1344	0.427	0.4193	-0.11	-0.0904	0.5054	0.0267	-6.9391	0.9035	-6.6791	0.8906	A+	A-	A+
MATH	7	560139	0	B-E	2	76261	1.0453	0.3825	0.3073	0.1542	0.0911	0.03	0.0262	0.0088	0.8141	-0.638	0.0456	0.3598	0.4537	0.3215	-0.1109	-0.0918	1.3864	0.0247	-9.8993	0.744	-9.8993	0.7086	A+	A-	A-
MATH	7	313528	0	D-S	2	76600	1.3293	0.2683	0.3077	0.2422	0.1082	0.0429	0.0175	0.0132	0.7551	-0.5254	-0.1227	0.261	0.4337	0.3553	-0.1221	-0.1155	0.9665	0.0257	-5.5591	0.9216	-5.2791	0.9247	B+	A-	A-
MATH	7	743716	1	A-N	3	739	1.1245	0.2377	0.4831	0.1429	0.074	0.0221	0.0299	0.0104	0.7014	-0.4632	-0.0528	0.3692	0.377	0.259	-0.1731	-0.128	1.3398	0.0718	-5.9193	0.7506	-6.5093	0.7381	A+	A-	A-
MATH	7	745400	2	C-G	3	752	1.2061	0.3662	0.3052	0.1182	0.1117	0.0753	0.0182	0.0052	0.7732	-0.5552	-0.0895	0.2289	0.419	0.4513	-0.1012	-0.0383	0.9215	0.0744	-4.3692	0.8097	-4.6792	0.7738	A+	A-	A-
MATH	7	737633	3	B-E	3	744	0.7177	0.5831	0.2143	0.0701	0.0558	0.0429	0.0208	0.013	0.7284	-0.6413	0.2696	0.2991	0.3777	0.3374	-0.0817	-0.1254	1.6754	0.077	-4.1992	0.78	-5.9894	0.6134	A+	A-	A-
MATH	7	745399	4	A-R	3	742	1.1577	0.2688	0.4325	0.1597	0.0468	0.0558	0.0247	0.0117	0.7343	-0.5675	0.0234	0.3178	0.2758	0.3947	-0.104	-0.0852	1.095	0.076	-3.8192	0.833	-4.9492	0.7891	A+	NA	A+
MATH	7	658146	5	A-R	3	739	1.5196	0.2286	0.3039	0.2117	0.1312	0.0844	0.0208	0.0195	0.7703	-0.4931	-0.2213	0.2147	0.3888	0.4446	-0.1142	-0.1262	0.5631	0.0803	-5.0092	0.803	-5.0192	0.7916	B+	A-	A-
MATH	7	738735	6	D-S	3	740	1.073	0.5377	0.1299	0.0987	0.0753	0.1195	0.0169	0.0221	0.6996	-0.5883	0.0812	0.2648	0.2609	0.472	-0.0788	-0.1688	0.9441	0.0803	1.0611	1.0554	-0.9391	0.9163	A+	A-	A-
MATH	7	737634	7	C-G	3	750	0.92	0.3805	0.4351	0.0481	0.0766	0.0338	0.0182	0.0078	0.6693	-0.4637	0.0634	0.1906	0.4082	0.3439	-0.0746	-0.0884	1.378	0.0706	-2.1391	0.8943	-1.2691	0.9363	A+	A-	A-
MATH	7	738932	8	A-N	3	755	1.3695	0.2675	0.2818	0.3	0.0636	0.0675	0.0143	0.0052	0.7004	-0.5156	-0.0967	0.2604	0.2565	0.4292	-0.1121	-0.0634	0.8057	0.0791	-2.3891	0.9035	-3.1091	0.8716	B+	A-	A+
MATH	7	737285	9	B-E	3	751	1.8162	0.239	0.213	0.1286	0.2779	0.1169	0.0156	0.0091	0.7842	-0.4877	-0.308	0.0131	0.4212	0.5088	-0.1033	-0.1017	0.4421	0.0829	-5.1492	0.7919	-4.8492	0.7783	A+	A-	NA
MATH	8	612078	0	A-N	3	73085	1.1625	0.4333	0.1887	0.1196	0.1313	0.068	0.0362	0.0229	0.7946	-0.5871	-0.013	0.2612	0.4536	0.4215	-0.1401	-0.1462	0.9451	0.0253	-7.0991	0.8893	-9.8992	0.7909	A+	A+	A-
MATH	8	715324	0	B-F	3	76164	1.7193	0.1247	0.333	0.3492	0.0402	0.1335	0.0146	0.0049	0.7464	-0.3736	-0.3398	0.1368	0.2093	0.581	-0.1244	-0.0788	0.1117	0.0317	-9.8991	0.8585	-9.4191	0.8545	A-	A-	A-
MATH	8	493897	0	D-S	2	75583	1.4001	0.3589	0.2122	0.1539	0.1499	0.0981	0.0164	0.0106	0.7927	-0.5822	-0.1066	0.1635	0.3933	0.5031	-0.1196	-0.108	0.5677	0.0255	-8.4691	0.8789	-9.1992	0.8442	A-	A-	A-
MATH	8	738737	1	B-E	3	734	1.6989	0.2844	0.2519	0.1143	0.0714	0.2312	0.0221	0.0247	0.718	-0.4948	-0.1682	0.155	0.1982	0.5654	-0.1387	-0.1422	0.1422	0.0743	-0.539	0.973	-0.599	0.9595	A-	A-	A-
MATH	8	737287	2	B-E	3	731	1.2025	0.3065	0.3948	0.0532	0.139	0.0558	0.0286	0.0221	0.7578	-0.4921	-0.0363	0.1056	0.4808	0.4199	-0.1237	-0.1443	0.8834	0.0729	-4.3492	0.8052	-4.8992	0.7649	A+	A-	A-
MATH	8	759415	3	A-N	2	698	1.543	0.1364	0.4052	0.1688	0.1286	0.0675	0.0481	0.0455	0.697	-0.3001	-0.2638	0.2268	0.3646	0.4314	-0.1789	-0.2136	0.6032	0.0802	-3.0991	0.871	-3.3391	0.8574	A+	A+	A+
MATH	8	743719	4	C-G	3	739	1.7172	0.2182	0.2688	0.1584	0.1948	0.1195	0.0338	0.0065	0.7531	-0.5105	-0.2071	0.1075	0.3765	0.4594	-0.1667	-0.0567	0.3326	0.0828	-2.6091	0.8924	-2.8191	0.8767	A+	B-	A-
MATH	8	743718	5	B-F	3	737	0.9824	0.4766	0.1792	0.1779	0.0883	0.0351	0.0234	0.0195	0.7188	-0.561	0.0653	0.3238	0.3861	0.328	-0.1132	-0.1551	1.4557	0.0751	-1.8891	0.9128	-3.7092	0.7841	A+	A-	A-
MATH	8	745402	6	D-S	3	728	1.3022	0.2805	0.339	0.1377	0.1364	0.0519	0.0325	0.0221	0.7493	-0.487	-0.1163	0.2537	0.4648	0.3486	-0.1477	-0.1654	0.9082	0.0747	-3.7392	0.8424	-4.4992	0.8041	B+	A-	A+
MATH	8	738934	7	B-E	3	736	1.2446	0.2844	0.3429	0.1403	0.187	0.0013	0.0273	0.0169	0.7458	-0.48	-0.1495	0.2641	0.6	0.052	-0.1398	-0.1338	1.508	0.0752	-4.2992	0.8277	-4.5292	0.8	A+	A-	A-
MATH	8	738935	8	B-F	3	728	1.3104	0.2974	0.2974	0.1325	0.1961	0.0221	0.0273	0.0273	0.7244	-0.5377	-0.0256	0.2505	0.472	0.2631	-0.1452	-0.1831	1.1277	0.0752	-4.3192	0.8236	-4.3492	0.8011	A-	A-	NA
MATH	8	709599	9	C-G	3	729	1.2236	0.4805	0.1351	0.1208	0.0597	0.1506	0.0338	0.0195	0.792	-0.6154	0.0043	0.2493	0.2533	0.5825	-0.1478	-0.1224	0.6914	0.0785	-4.4492	0.7837	-5.2794	0.6315	A+	A-	A-
SCIENCE	4	193601	0	A	2	83802	1.3619	0.1612	0.306	0.5175			0.0066	0.0087	0.5729	-0.4888	-0.0885	0.4893			-0.1179	-0.1549	0.3101	0.0255	-9.8991	0.8637	-6.3591	0.9056	B+	A-	A-
SCIENCE	4	578317	0	A	3	83477	1.332	0.1522	0.3509	0.4778			0.0076	0.0115	0.6642	-0.4837	-0.208	0.6062			-0.1182	-0.1828	0.4877	0.0242	-9.8993	0.6689	-9.8993	0.6631	A+	A-	A-
SCIENCE	4	566533	0	B	3	83043	1.3113	0.1566	0.3587	0.4604			0.0145	0.0097	0.52	-0.4681	-0.0084	0.4104			-0.1248	-0.1578	-0.0454	0.0308	9.9012	1.2372	9.9013	1.3313	B+	A-	A-
SCIENCE	4	566539	0	C	3	83054	0.9953	0.1785	0.6234	0.1739			0.0111	0.013	0.5631	-0.4046	0.0412	0.4457			-0.1357	-0.1744	1.0968	0.0233	-9.8992	0.7763	-9.8992	0.7782	A+	A-	A-

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(OMIT)	P(INV)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr(4)	Corr (OMIT)	Corr (INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
SCIENCE	4	621211	0	D	3	82182	0.9559	0.2845	0.4393	0.2419			0.0125	0.0219	0.4662	-0.3543	0.089	0.3775			-0.1361	-0.211	1.2587	0.0208	0.801	1.008	1.531	1.0173	A+	A+	A+
SCIENCE	4	747960	1	1	2	799	2.0976	0.0994	0.1576	0.2606	0.4509		0.0206	0.0109	0.4544	-0.3382	-0.1744	0.0625	0.3482		-0.1168	-0.1864	0.3793	0.0932	1.3311	1.054	4.1212	1.2363	A+	A+	A+
SCIENCE	4	737152	2	1	2	804	1.4826	0.2473	0.2279	0.2812	0.2182		0.0158	0.0097	0.6244	-0.4723	-0.0803	0.1728	0.4745		-0.1697	-0.1538	1.1386	0.0804	-2.5191	0.9054	-2.4691	0.8931	A-	A-	A+
SCIENCE	4	737292	3	1	2	805	0.6422	0.5358	0.2824	0.1285	0.0291		0.0145	0.0097	0.5083	-0.4237	0.195	0.3471	0.196		-0.0851	-0.1572	2.5336	0.0692	-1.7691	0.9202	-2.6391	0.8532	A+	NA	A-
SCIENCE	4	738693	4	4	3	791	1.5424	0.2109	0.2485	0.2679	0.2315		0.017	0.0242	0.5646	-0.448	-0.0362	0.2035	0.3842		-0.1231	-0.2464	1.1577	0.0824	-0.289	0.9885	-0.269	0.9879	B+	A-	A-
SCIENCE	4	737149	5	1	3	798	1.1203	0.3188	0.3297	0.2024	0.1164		0.0109	0.0218	0.655	-0.4756	-0.058	0.3992	0.3833		-0.0164	-0.2238	1.7581	0.0744	-5.4892	0.7954	-5.8692	0.7609	A+	NA	NA
SCIENCE	4	737294	6	2	3	804	1.3905	0.1442	0.4303	0.2752	0.1248		0.0133	0.0121	0.5194	-0.4132	-0.1041	0.308	0.2535		-0.0374	-0.1859	1.2387	0.0905	0.831	1.0326	0.941	1.0371	A-	A-	A-
SCIENCE	4	737150	7	2	2	801	0.8801	0.4461	0.2776	0.1648	0.0824		0.0158	0.0133	0.4973	-0.386	0.0855	0.2847	0.2971		-0.1247	-0.1585	1.9976	0.0707	1.061	1.0444	0.411	1.0209	A+	NA	NA
SCIENCE	4	747961	8	3	2	806	1.8065	0.1285	0.2424	0.2958	0.3103		0.0121	0.0109	0.5042	-0.3462	-0.1727	0.0732	0.4037		-0.1106	-0.175	0.6852	0.0953	1.061	1.0408	1.5311	1.0679	A+	NA	NA
SCIENCE	4	740600	9	5	2	813	1.7232	0.2448	0.1624	0.1988	0.3794		0.0097	0.0048	0.5643	-0.4677	-0.1557	0.1914	0.4141		-0.1182	-0.1037	0.9057	0.0829	2.7211	1.1137	2.6912	1.1563	A+	NA	A-
SCIENCE	4	737151	10	3	2	805	1.0671	0.2727	0.4242	0.2194	0.0594		0.0158	0.0085	0.4217	-0.2594	-0.0649	0.3121	0.2194		-0.1697	-0.1335	1.8872	0.0746	2.9011	1.1198	2.5711	1.1084	A+	A-	NA
SCIENCE	4	737290	11	3	2	801	0.9238	0.4352	0.2642	0.1818	0.0897		0.0133	0.0158	0.5604	-0.3892	-0.001	0.3399	0.3593		-0.1393	-0.1958	1.9186	0.0707	-3.3291	0.8693	-2.9691	0.8563	A+	NA	A-
SCIENCE	4	738694	12	5	3	791	1.5765	0.1879	0.2485	0.3042	0.2182		0.017	0.0242	0.5656	-0.4095	-0.16	0.2745	0.3564		-0.1046	-0.2003	1.0219	0.084	-1.7091	0.9359	-1.2991	0.9464	A+	A-	A-
SCIENCE	8	658415	0	A	3	68773	1.3041	0.1654	0.334	0.4559			0.0198	0.0249	0.6378	-0.4661	-0.1363	0.5817			-0.1518	-0.1997	-0.0242	0.0239	-9.8992	0.7882	-9.8992	0.7758	A+	A-	A-
SCIENCE	8	659844	0	A	3	68536	0.7167	0.4393	0.3431	0.1696			0.0242	0.0237	0.5986	-0.4596	0.2166	0.4716			-0.1598	-0.1786	1.2007	0.0201	-6.2691	0.9336	-8.9191	0.8928	A+	A-	A-
SCIENCE	8	617537	0	B	3	69411	1.0047	0.306	0.3477	0.3105			0.0218	0.014	0.6828	-0.5339	0.021	0.5932			-0.144	-0.1487	0.5221	0.0215	-9.8992	0.8114	-9.8992	0.7847	A+	A-	A-
SCIENCE	8	659841	0	B	2	69547	0.7705	0.4043	0.3792	0.1826			0.0173	0.0166	0.4512	-0.3649	0.1737	0.3441			-0.1349	-0.1609	0.7137	0.0211	9.9012	1.2143	9.9012	1.2242	A+	A-	A-
SCIENCE	8	252548	0	D	2	66512	0.6016	0.53	0.232	0.162			0.0411	0.0349	0.6238	-0.4724	0.3117	0.4675			-0.161	-0.1961	1.5081	0.0206	-7.7291	0.9108	-9.6492	0.8424	A-	A-	A-
SCIENCE	8	737153	1	1	2	718	1.3872	0.1429	0.374	0.3273	0.0883		0.0519	0.0156	0.5763	-0.3642	-0.1626	0.3656	0.3144		-0.1651	-0.1454	0.8657	0.0796	-2.6491	0.9005	-2.7091	0.8981	A+	A-	A+
SCIENCE	8	739531	2	1	2	726	1.9807	0.0506	0.2506	0.3078	0.3338		0.0312	0.026	0.6491	-0.2661	-0.3784	0.0254	0.5687		-0.1483	-0.2	-0.1738	0.1084	-5.3592	0.7993	-4.4792	0.8048	A+	B-	A-
SCIENCE	8	737293	3	1	3	714	1.7717	0.1286	0.2286	0.2961	0.274		0.0597	0.013	0.6231	-0.4075	-0.2285	0.1508	0.4568		-0.1078	-0.1295	0.1835	0.0916	-2.1791	0.9159	-0.989	0.9547	A+	A+	A+
SCIENCE	8	740608	4	2	2	714	0.6975	0.4545	0.3078	0.1558	0.0091		0.0494	0.0234	0.5238	-0.3713	0.1778	0.4154	0.0968		-0.1268	-0.1957	2.3899	0.0699	-1.8691	0.9246	-2.4691	0.8834	A+	A-	A-
SCIENCE	8	740609	5	2	3	720	1.0139	0.3481	0.3429	0.1273	0.1169		0.0429	0.0221	0.5183	-0.3927	0.0885	0.2268	0.3388		-0.0656	-0.1777	1.2346	0.072	3.1311	1.136	2.5711	1.128	A+	B-	A-
SCIENCE	8	748364	6	2	2	711	0.6681	0.4506	0.3455	0.1104	0.0169		0.0416	0.0351	0.4753	-0.308	0.2185	0.3233	0.1656		-0.1385	-0.2481	2.2601	0.0688	1.071	1.0484	-0.429	0.9776	A+	A-	A+
SCIENCE	8	737154	7	3	2	724	0.8094	0.4519	0.2818	0.1403	0.0662		0.0351	0.0247	0.5933	-0.4872	0.1883	0.335	0.3075		-0.0697	-0.1433	1.5208	0.072	-0.869	0.9623	-2.0991	0.8922	A+	A-	A+
SCIENCE	8	740610	8	3	3	712	0.9228	0.4169	0.2234	0.2234	0.061		0.0481	0.0273	0.5946	-0.3966	0.033	0.4085	0.3165		-0.1246	-0.2299	1.4871	0.0724	-1.8691	0.9233	-2.2291	0.8865	A-	A-	A-
SCIENCE	8	738929	9	5	3	714	1.4972	0.2558	0.1909	0.2442	0.2364		0.0442	0.0286	0.6127	-0.4679	-0.0409	0.2658	0.4215		-0.1746	-0.2231	0.6705	0.0785	-1.2991	0.9481	-1.3191	0.9344	A+	A+	A-
SCIENCE	8	739464	10	5	2	716	2.0922	0.0909	0.1532	0.2649	0.4208		0.0481	0.0221	0.5885	-0.3349	-0.2534	-0.0182	0.524		-0.1684	-0.1842	-0.0543	0.0997	-1.159	0.9513	-0.099	0.9934	B+	A+	A+
SCIENCE	8	741137	11	5	2	696	1.9928	0.1117	0.1519	0.2714	0.3688		0.0688	0.0273	0.4717	-0.2487	-0.2086	0.0073	0.4233		-0.1376	-0.1193	0.0626	0.0904	4.4512	1.1904	4.8313	1.2627	A+	A+	A+

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(OMIT)	P(INV)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr(4)	Corr (OMIT)	Corr (INV)	Final	Final Err	Infit-Z	Infit-MS	Outfit-Z	Outfit-MS	M/F	W/B	W/H
SCIENCE	8	738695	12	5	2	722	1.1551	0.2325	0.4013	0.2299	0.074		0.0364	0.026	0.5434	-0.3459	-0.0414	0.374	0.2771		-0.1811	-0.1861	1.2896	0.0767	-0.919	0.9633	-1.4291	0.9429	A+	A-	A-

Open-Ended Computer-Based Item Statistics

Column Heading	Definition
Content	Content Area
Grade	Grade
PubID	Item ID
Form	Form Number
Stand	Standard
Depth	Depth of Knowledge
N	N
Mean	Mean Score
P(0)	Proportion 0 Points
P(1)	Proportion 1 Point
P(2)	Proportion 2 Points
P(3)	Proportion 3 Points
P(4)	Proportion 4 Points
P(OMIT)	Proportion Omits
P(INV)	Proportion Invalid Responses
PtBis	Point Biserial
Corr(0)	Correlation 0 Points
Corr(1)	Correlation 1 Point
Corr(2)	Correlation 2 Points
Corr(3)	Correlation 3 Points
Corr(4)	Correlation 4 Points
Corr(OMIT)	Correlation Omits
Corr(INV)	Correlation Invalid Responses

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(OMIT)	P(INV)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr(4)	Corr (OMIT)	Corr (INV)
ELA	3	713654	0	A-K	3	25443	1.1278	0.1667	0.545	0.2092	0.0402		0.0091	0.0297	0.5871	-0.4276	0.0021	0.3866	0.2504		-0.1089	-0.2223
ELA	3	633106	0	B-K	3	25439	1.1342	0.2483	0.3944	0.2595	0.0589		0.0062	0.0328	0.6535	-0.4483	-0.0714	0.447	0.3291		-0.0766	-0.2184
ELA	3	738106	1	A-K	3	262	1.0496	0.2291	0.4909	0.1891	0.0436			0.0473	0.6512	-0.3441	-0.1555	0.4584	0.4108			-0.1935
ELA	3	744517	2	A-K	3	271	1.4391	0.0836	0.4691	0.3491	0.0836			0.0145	0.5726	-0.3076	-0.3192	0.3722	0.3152			-0.1687
ELA	3	744503	3	A-K	3	269	1.5019	0.1055	0.4073	0.3345	0.1309			0.0218	0.6276	-0.4001	-0.2386	0.2736	0.4146			-0.1972
ELA	3	745854	4	A-K	3	272	1.2904	0.0909	0.5782	0.2618	0.0582			0.0109	0.5084	-0.3198	-0.1592	0.2421	0.3457			-0.1619
ELA	3	748377	5	A-K	3	272	1.364	0.1055	0.5236	0.2545	0.1055			0.0109	0.5717	-0.305	-0.3239	0.3928	0.321			-0.1373
ELA	3	749031	6	B-C	3	270	1.237	0.0873	0.6145	0.24	0.04			0.0182	0.5259	-0.387	-0.1492	0.3666	0.2015			-0.1062
ELA	3	749259	7	B-K	3	267	1.2135	0.1055	0.6	0.2182	0.0473			0.0291	0.5204	-0.2716	-0.1822	0.3672	0.2763			-0.224
ELA	3	749245	8	B-K	3	273	1.4139	0.1091	0.4691	0.3091	0.1055			0.0073	0.6066	-0.3835	-0.2722	0.3436	0.3548			-0.1458
ELA	3	747651	9	B-C	3	268	1.2948	0.1564	0.4691	0.2545	0.0945			0.0255	0.565	-0.3973	-0.1223	0.3222	0.3235			-0.1884
MATH	3	565863	0	A-T	2	27031	2.1533	0.0889	0.1803	0.2852	0.3568	0.0764	0.0013	0.0111	0.7477	-0.4276	-0.4058	-0.0317	0.4564	0.3456	-0.0511	-0.158
MATH	3	499220	0	B-O	2	27109	1.5592	0.301	0.2099	0.1986	0.1865	0.0944	0.0033	0.0063	0.8058	-0.6479	-0.1414	0.2001	0.4267	0.4153	-0.072	-0.1089
MATH	3	652779	0	C-G	3	26579	2.0612	0.118	0.2119	0.2623	0.2504	0.1284	0.003	0.0259	0.7073	-0.4328	-0.2872	0.0149	0.3489	0.4162	-0.0693	-0.2277
MATH	3	712332	1	B-O	3	265	0.9283	0.5055	0.2109	0.1345	0.0364	0.0764		0.0364	0.7488	-0.5877	0.0625	0.388	0.2802	0.4469		-0.1882
MATH	3	716155	2	D-M	3	275	2.2545	0.1309	0.1418	0.2618	0.2727	0.1927			0.7159	-0.5597	-0.193	-0.0682	0.2228	0.4738		
MATH	3	738923	3	A-F	3	273	2.2564	0.1709	0.1673	0.1273	0.2909	0.2364		0.0073	0.6937	-0.5196	-0.2752	0.0149	0.2967	0.4076		-0.1724
MATH	3	738727	4	C-G	3	273	2.293	0.1018	0.1345	0.2618	0.36	0.1345		0.0073	0.7048	-0.5241	-0.2334	-0.0807	0.3016	0.4041		-0.1063
MATH	3	738726	5	A-F	3	275	2.0218	0.0327	0.3527	0.3055	0.1782	0.1309			0.6306	-0.252	-0.4894	0.0492	0.3895	0.3172		
MATH	3	743721	6	D-M	3	270	1.4963	0.2109	0.3564	0.2109	0.1236	0.08		0.0182	0.6973	-0.5307	-0.1345	0.2691	0.2882	0.3724		-0.1851
MATH	3	743720	7	B-O	3	270	2.0074	0.1818	0.2	0.2	0.2291	0.1709		0.0182	0.7735	-0.5748	-0.2099	0.0336	0.3569	0.4578		-0.2255
MATH	3	705670	8	A-T	3	272	1.6029	0.2255	0.2873	0.2036	0.2	0.0727		0.0109	0.7548	-0.5489	-0.2294	0.2509	0.3996	0.3549		-0.1914
MATH	3	737277	9	A-T	3	273	1.6374	0.1782	0.2945	0.2945	0.16	0.0655		0.0073	0.7749	-0.5796	-0.2252	0.1993	0.4274	0.3474		-0.1062
MATH	4	628162	0	B-O	3	29818	1.6924	0.2223	0.2344	0.2186	0.2234	0.0777	0.0043	0.0194	0.7871	-0.5779	-0.1793	0.1436	0.4355	0.3993	-0.0783	-0.1905
MATH	4	716157	0	C-G	3	29307	1.6919	0.188	0.2581	0.2494	0.1893	0.0746	0.0049	0.0355	0.7048	-0.4821	-0.1731	0.1683	0.3929	0.3422	-0.0791	-0.2539
MATH	4	628158	0	D-M	2	29794	1.2669	0.2735	0.3731	0.169	0.1148	0.0451	0.0053	0.0192	0.757	-0.5309	-0.11	0.3086	0.4254	0.3335	-0.0795	-0.1812
MATH	4	743760	1	A-F	3	261	1.2184	0.36	0.2836	0.0909	0.1673	0.0473		0.0509	0.6856	-0.4781	-0.0298	0.1153	0.4961	0.3063		-0.1837
MATH	4	737273	2	A-T	3	274	1.8212	0.2255	0.2218	0.2218	0.16	0.1673		0.0036	0.7048	-0.6336	-0.0004	0.0229	0.2281	0.4778		-0.1079
MATH	4	738728	3	A-T	3	272	1.4338	0.1455	0.5127	0.1491	0.12	0.0618		0.0109	0.6763	-0.4717	-0.2055	0.258	0.3503	0.3267		-0.1477

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(OMIT)	P(INV)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr(4)	Corr (OMIT)	Corr (INV)
MATH	4	738844	4	B-O	3	270	1.3037	0.3455	0.2582	0.1673	0.1564	0.0545		0.0182	0.7137	-0.5875	-0.0192	0.2514	0.3774	0.3386		-0.1497
MATH	4	743722	5	C-G	3	275	2.1673	0.08	0.2218	0.2618	0.3236	0.1127			0.6233	-0.4192	-0.2991	-0.0313	0.3158	0.3289		
MATH	4	737280	6	C-G	3	271	1.893	0.1782	0.2545	0.2073	0.1855	0.16	0.0036	0.0109	0.6784	-0.4815	-0.2173	0.0822	0.278	0.4327	-0.0836	-0.1547
MATH	4	715925	7	D-M	3	274	0.9489	0.4655	0.2873	0.1345	0.0473	0.0618		0.0036	0.6641	-0.594	0.1454	0.2778	0.2451	0.3736		-0.1043
MATH	4	738843	8	A-T	3	270	1.5407	0.1455	0.4218	0.2436	0.08	0.0909		0.0182	0.7035	-0.5283	-0.1901	0.3037	0.2684	0.3671		-0.2138
MATH	4	737279	9	A-F	3	269	2.052	0.1309	0.2982	0.1455	0.1964	0.2073		0.0218	0.688	-0.4149	-0.3054	0.0593	0.2916	0.4506		-0.2717
MATH	5	716158	0	A-T	3	32083	1.3729	0.2452	0.3457	0.2324	0.0964	0.0621	0.0052	0.013	0.7049	-0.5032	-0.1085	0.2207	0.3597	0.3766	-0.0785	-0.146
MATH	5	577938	0	B-O	2	32061	1.9354	0.191	0.222	0.1924	0.2108	0.1649	0.0041	0.0148	0.7462	-0.4973	-0.2415	0.0143	0.2951	0.5198	-0.073	-0.1527
MATH	5	313770	0	D-M	2	32215	2.0034	0.1666	0.2321	0.2052	0.1955	0.1865	0.0023	0.0119	0.7638	-0.5024	-0.2896	0.0313	0.2656	0.5394	-0.0599	-0.1461
MATH	5	737281	1	A-T	3	263	1.403	0.3345	0.2545	0.1345	0.1127	0.12		0.0436	0.7885	-0.5254	-0.1195	0.1759	0.2471	0.6168		-0.1894
MATH	5	738845	2	A-T	3	274	1.9964	0.1455	0.2182	0.2473	0.2655	0.12		0.0036	0.6711	-0.4956	-0.2016	-0.0019	0.2948	0.4124		-0.0894
MATH	5	714447	3	C-G	3	267	0.8727	0.4109	0.3745	0.1127	0.0436	0.0291		0.0291	0.5377	-0.3855	0.0724	0.3636	0.1965	0.2324		-0.2353
MATH	5	759414	4	C-G	3	272	2.0441	0.0764	0.2655	0.3236	0.1855	0.1382		0.0109	0.6188	-0.3568	-0.2965	-0.0281	0.3432	0.3544		-0.1629
MATH	5	716159	5	B-O	3	272	1.2757	0.2873	0.3455	0.2036	0.1018	0.0509		0.0109	0.7378	-0.5974	-0.0636	0.3191	0.312	0.3679		-0.031
MATH	5	738922	6	D-M	3	275	1.6255	0.2473	0.2945	0.1673	0.1673	0.1236			0.7289	-0.5589	-0.2126	0.1951	0.3489	0.4101		
MATH	5	737282	7	D-M	3	275	1.44	0.1964	0.4182	0.2145	0.0909	0.08			0.7011	-0.4773	-0.2777	0.3406	0.3131	0.3566		
MATH	5	705674	8	A-F	3	271	1.1661	0.2545	0.4618	0.1491	0.0909	0.0291		0.0145	0.6811	-0.468	-0.0581	0.2779	0.3634	0.3176		-0.2006
MATH	5	659262	9	A-F	3	272	1.0809	0.3018	0.4109	0.1927	0.0618	0.0218		0.0109	0.6844	-0.5479	0.0433	0.3323	0.3217	0.263		-0.1615
MATH	6	712887	0	A-N	3	38339	1.7566	0.2207	0.2568	0.1859	0.1741	0.1427	0.0055	0.0143	0.7837	-0.5427	-0.2391	0.1148	0.3539	0.4979	-0.087	-0.1436
MATH	6	661689	0	B-E	3	38471	1.817	0.1156	0.2716	0.3391	0.1916	0.0656	0.004	0.0124	0.7639	-0.4211	-0.3707	0.0974	0.4396	0.4034	-0.0716	-0.1349
MATH	6	480016	0	D-S	3	38316	1.215	0.3087	0.3539	0.1659	0.0999	0.0512	0.0073	0.0131	0.7644	-0.5554	-0.0667	0.2804	0.408	0.3845	-0.0872	-0.1366
MATH	6	707608	1	A-N	3	318	0.6006	0.5606	0.303	0.0364	0.0515	0.0121		0.0364	0.6746	-0.6338	0.4512	0.1954	0.3221	0.234		-0.1399
MATH	6	737631	2	A-R	3	329	1.3313	0.2333	0.4121	0.2	0.0909	0.0606		0.003	0.7077	-0.5272	-0.1652	0.3195	0.3313	0.3419		-0.0056
MATH	6	745398	3	C-G	3	329	1.1337	0.3061	0.4455	0.1121	0.0727	0.0606		0.003	0.6718	-0.5481	0.0291	0.2463	0.3118	0.353		-0.0874
MATH	6	743714	4	B-E	3	327	0.7034	0.397	0.5273	0.0364	0.0242	0.0061		0.0091	0.6878	-0.6624	0.4725	0.2604	0.2395	0.1454		-0.0914
MATH	6	738930	5	A-R	3	327	1.9297	0.2	0.2091	0.1788	0.2667	0.1364		0.0091	0.7203	-0.5148	-0.2444	0.0154	0.3532	0.4366		-0.0694
MATH	6	713930	6	D-S	3	326	1.5736	0.1939	0.3455	0.2515	0.0818	0.1152		0.0121	0.7252	-0.5237	-0.201	0.2327	0.3098	0.4217		-0.1632
MATH	6	737632	7	D-S	3	328	1.372	0.1307	0.5289	0.2219	0.0669	0.0486		0.003	0.7043	-0.4258	-0.2726	0.2632	0.3875	0.355		-0.0529
MATH	6	760060	8	A-N	3	323	1.8854	0.1727	0.2212	0.2273	0.2606	0.097		0.0212	0.7155	-0.4901	-0.2568	0.091	0.3792	0.3836		-0.1818

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(OMIT)	P(INV)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr(4)	Corr (OMIT)	Corr (INV)
MATH	6	738733	9	C-G	3	325	1.7415	0.1485	0.3758	0.1636	0.1758	0.1212		0.0152	0.7219	-0.4534	-0.3085	0.1933	0.2869	0.4626		-0.1726
MATH	7	658588	0	A-R	3	38175	1.7223	0.2832	0.155	0.1829	0.2535	0.0988	0.009	0.0177	0.7814	-0.5984	-0.1868	0.1386	0.4232	0.4212	-0.087	-0.1359
MATH	7	560139	0	B-E	2	38003	1.0254	0.4017	0.2924	0.1553	0.0874	0.0321	0.0118	0.0193	0.8101	-0.6453	0.0673	0.3707	0.4356	0.3285	-0.0946	-0.1401
MATH	7	313528	0	D-S	2	37603	1.3955	0.2586	0.2782	0.2563	0.1155	0.0501	0.011	0.0303	0.7613	-0.5225	-0.1203	0.2365	0.4307	0.3783	-0.1001	-0.1772
MATH	7	743716	1	A-N	3	310	0.7581	0.4333	0.3606	0.103	0.0242	0.0182		0.0606	0.7514	-0.516	0.1249	0.5006	0.2996	0.3094		-0.1839
MATH	7	745400	2	C-G	3	325	1.3785	0.3485	0.2636	0.1273	0.1424	0.103		0.0152	0.7294	-0.5459	-0.1128	0.1901	0.3501	0.4565		-0.12
MATH	7	737633	3	B-E	3	315	0.8698	0.5364	0.1939	0.103	0.0545	0.0667		0.0455	0.7561	-0.6014	0.125	0.3252	0.3231	0.4484		-0.1615
MATH	7	745399	4	A-R	3	323	1.3808	0.2424	0.3697	0.2	0.0848	0.0818		0.0212	0.7524	-0.5793	-0.0792	0.294	0.2617	0.445		-0.1803
MATH	7	658146	5	A-R	3	323	1.774	0.2091	0.2545	0.2	0.1788	0.1364		0.0212	0.7539	-0.5655	-0.1749	0.1114	0.3535	0.4456		-0.186
MATH	7	738735	6	D-S	3	317	1.2776	0.4818	0.1515	0.0758	0.0818	0.1697		0.0394	0.6874	-0.5567	0.0395	0.1635	0.2868	0.4939		-0.2224
MATH	7	737634	7	C-G	3	318	1.066	0.3182	0.4545	0.0455	0.1	0.0455		0.0364	0.6108	-0.3496	-0.0661	0.226	0.3567	0.3565		-0.1742
MATH	7	738932	8	A-N	3	327	1.4771	0.2273	0.2848	0.3303	0.0758	0.0727		0.0091	0.6926	-0.539	-0.1053	0.2383	0.2607	0.3984		-0.1168
MATH	7	737285	9	B-E	3	322	1.7547	0.2636	0.197	0.1394	0.2667	0.1091		0.0242	0.7649	-0.5649	-0.1707	0.0531	0.4247	0.4423		-0.1773
MATH	8	612078	0	A-N	3	36886	1.1741	0.4184	0.193	0.1225	0.1306	0.0656	0.0225	0.0474	0.787	-0.5621	0.0001	0.2639	0.4493	0.4148	-0.1241	-0.2112
MATH	8	715324	0	B-F	3	39221	1.6967	0.1208	0.3744	0.3089	0.0539	0.131	0.0072	0.0038	0.7562	-0.379	-0.3729	0.1494	0.2447	0.5686	-0.0919	-0.0712
MATH	8	493897	0	D-S	2	38695	1.3969	0.3595	0.2115	0.1565	0.1541	0.0941	0.0078	0.0165	0.7857	-0.5812	-0.1053	0.1647	0.3984	0.4899	-0.0863	-0.1348
MATH	8	738737	1	B-E	3	310	1.0871	0.4061	0.3152	0.0606	0.0455	0.1121		0.0606	0.7572	-0.4876	0.0173	0.1508	0.3116	0.5783		-0.2175
MATH	8	737287	2	B-E	3	322	1.2857	0.2818	0.4182	0.0606	0.1455	0.0697		0.0242	0.7383	-0.4942	-0.0953	0.1092	0.4309	0.4428		-0.1392
MATH	8	759415	3	A-N	2	302	1.6391	0.1576	0.3394	0.1879	0.1364	0.0939		0.0848	0.7328	-0.3535	-0.2843	0.2032	0.3008	0.5068		-0.2405
MATH	8	743719	4	C-G	3	326	1.7055	0.1424	0.3879	0.1788	0.1758	0.103	0.003	0.0091	0.7258	-0.4238	-0.3579	0.1361	0.4054	0.4041	-0.0653	-0.0336
MATH	8	743718	5	B-F	3	316	0.8671	0.4848	0.2182	0.1606	0.0848	0.0091	0.003	0.0394	0.6786	-0.5553	0.1608	0.3343	0.3961	0.1858	-0.0706	-0.1841
MATH	8	745402	6	D-S	3	315	1.3746	0.2212	0.4	0.1606	0.1	0.0727		0.0455	0.7002	-0.4078	-0.1489	0.223	0.3234	0.4434		-0.2488
MATH	8	738934	7	B-E	3	316	1.3481	0.2401	0.3647	0.152	0.1884	0.0152		0.0395	0.6745	-0.4379	-0.0911	0.1119	0.5399	0.1987		-0.2294
MATH	8	738935	8	B-F	3	322	1.3137	0.2667	0.3788	0.1061	0.2061	0.0182		0.0242	0.7814	-0.5626	-0.1154	0.1517	0.6126	0.2066		-0.1124
MATH	8	709599	9	C-G	3	318	1.2107	0.4818	0.1636	0.1061	0.0576	0.1545	0.003	0.0333	0.7913	-0.6132	0.0286	0.2036	0.2331	0.6112	-0.0568	-0.2171
SCIENCE	4	193601	0	A	2	31763	1.3846	0.1526	0.2924	0.5261			0.0041	0.0249	0.5825	-0.4886	-0.0667	0.502			-0.0886	-0.2504
SCIENCE	4	578317	0	A	3	31360	1.3623	0.1394	0.3325	0.4868			0.0041	0.0372	0.6687	-0.464	-0.1756	0.616			-0.0891	-0.3106
SCIENCE	4	566533	0	B	3	31376	1.3171	0.1648	0.3254	0.469			0.0073	0.0335	0.5376	-0.457	0.013	0.4455			-0.0985	-0.2807
SCIENCE	4	566539	0	C	3	31485	1.0173	0.1722	0.6014	0.1889			0.0043	0.0331	0.5606	-0.3837	0.0526	0.4485			-0.0858	-0.2841

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(OMIT)	P(INV)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr(4)	Corr (OMIT)	Corr (INV)
SCIENCE	4	621211	0	D	3	30812	0.9907	0.2739	0.4029	0.2652			0.0069	0.0511	0.4916	-0.3437	0.1072	0.4092			-0.0949	-0.3274
SCIENCE	4	747960	1	1	2	245	1.7878	0.1855	0.1564	0.2109	0.3382		0.0036	0.1055	0.4954	-0.2907	-0.0777	0.0947	0.4622		-0.0528	-0.3676
SCIENCE	4	737152	2	1	2	271	1.6089	0.2364	0.2036	0.2545	0.2909			0.0145	0.5745	-0.4334	-0.0698	0.0337	0.4975			-0.2373
SCIENCE	4	737292	3	1	2	269	0.7286	0.5127	0.28	0.1236	0.0618			0.0218	0.5579	-0.4471	0.1956	0.345	0.2713			-0.2959
SCIENCE	4	738693	4	4	3	265	1.6226	0.1673	0.2691	0.2873	0.24			0.0364	0.4982	-0.406	-0.0157	0.1113	0.3721			-0.2712
SCIENCE	4	737149	5	1	3	259	1.2432	0.2655	0.3127	0.2327	0.1309		0.0036	0.0545	0.6365	-0.4232	0.0177	0.3801	0.3505		-0.0874	-0.4179
SCIENCE	4	737294	6	2	3	270	1.5111	0.12	0.3855	0.3309	0.1455			0.0182	0.4705	-0.3223	-0.1851	0.2753	0.262			-0.2024
SCIENCE	4	737150	7	2	2	272	1.0478	0.4	0.28	0.1709	0.1382			0.0109	0.508	-0.3819	-0.0195	0.2309	0.3707			-0.183
SCIENCE	4	747961	8	3	2	268	1.8358	0.1273	0.2436	0.2655	0.3382			0.0255	0.5086	-0.351	-0.1189	0.0266	0.4338			-0.3108
SCIENCE	4	740600	9	5	2	270	1.5667	0.2909	0.1709	0.1927	0.3273			0.0182	0.5383	-0.4679	-0.0331	0.1513	0.4081			-0.1959
SCIENCE	4	737151	10	3	2	268	1.1791	0.2655	0.3636	0.2509	0.0945			0.0255	0.3522	-0.2087	-0.0543	0.2645	0.1899			-0.3296
SCIENCE	4	737290	11	3	2	270	1.063	0.36	0.3091	0.2036	0.1091			0.0182	0.5599	-0.37	-0.0727	0.2907	0.4001			-0.2291
SCIENCE	4	738694	12	5	3	268	1.7425	0.1636	0.1891	0.3564	0.2655			0.0255	0.5496	-0.3934	-0.1616	0.1669	0.3902			-0.2758
SCIENCE	8	658415	0	A	3	41937	1.4332	0.1393	0.2501	0.5435			0.0176	0.0495	0.6178	-0.4332	-0.1552	0.5971			-0.1446	-0.2822
SCIENCE	8	659844	0	A	3	42449	0.7997	0.385	0.3635	0.1959			0.0159	0.0398	0.5688	-0.4142	0.1752	0.4614			-0.1372	-0.2491
SCIENCE	8	617537	0	B	3	42354	1.0836	0.2546	0.3542	0.3334			0.0196	0.0382	0.6838	-0.5026	0.0139	0.5956			-0.1514	-0.2477
SCIENCE	8	659841	0	B	2	42646	0.7914	0.3874	0.3719	0.1894			0.0151	0.0362	0.469	-0.3571	0.1946	0.3584			-0.1305	-0.2392
SCIENCE	8	252548	0	D	2	41032	0.6514	0.4964	0.2383	0.1781			0.0253	0.0619	0.6063	-0.4226	0.2907	0.4665			-0.144	-0.2839
SCIENCE	8	737153	1	1	2	305	1.2328	0.2165	0.372	0.25	0.0915			0.0701	0.6057	-0.3815	-0.0641	0.3083	0.4148			-0.2544
SCIENCE	8	739531	2	1	2	313	2.1534	0.0485	0.1848	0.2879	0.4273			0.0515	0.6307	-0.2896	-0.345	0.0025	0.5544			-0.3585
SCIENCE	8	737293	3	1	3	318	2.1572	0.0758	0.1545	0.2758	0.4576			0.0364	0.5959	-0.3189	-0.3083	-0.0384	0.5334			-0.2819
SCIENCE	8	740608	4	2	2	317	0.8517	0.3879	0.3424	0.2152	0.0152		0.003	0.0364	0.614	-0.4605	0.1336	0.4873	0.1418		-0.002	-0.3015
SCIENCE	8	740609	5	2	3	320	1.1938	0.2939	0.3545	0.1606	0.1606			0.0303	0.4625	-0.3649	0.0476	0.1378	0.3443			-0.1957
SCIENCE	8	748364	6	2	2	316	0.7278	0.4394	0.3727	0.1121	0.0333			0.0424	0.396	-0.2848	0.1677	0.2704	0.1528			-0.2604
SCIENCE	8	737154	7	3	2	314	1.2452	0.3009	0.2644	0.2432	0.1459			0.0456	0.6256	-0.5301	0.1042	0.3297	0.3421			-0.3117
SCIENCE	8	740610	8	3	3	318	1.1384	0.3606	0.2545	0.203	0.1455			0.0364	0.6495	-0.4882	-0.0058	0.3544	0.4132			-0.274
SCIENCE	8	738929	9	5	3	310	1.5935	0.2455	0.1788	0.2273	0.2879		0.003	0.0576	0.632	-0.4879	-0.069	0.2634	0.442		-0.0591	-0.3041
SCIENCE	8	739464	10	5	2	314	2.2484	0.0606	0.1364	0.2606	0.4939			0.0485	0.5068	-0.2701	-0.2455	-0.0555	0.4722			-0.2933
SCIENCE	8	741137	11	5	2	315	2.0508	0.097	0.1333	0.3485	0.3758			0.0455	0.4924	-0.2542	-0.2499	-0.0048	0.4377			-0.2378

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(OMIT)	P(INV)	PtBis	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr(4)	Corr (OMIT)	Corr (INV)
SCIENCE	8	738695	12	5	2	321	1.215	0.2212	0.3939	0.2848	0.0727			0.0273	0.579	-0.4145	-0.1101	0.4121	0.2662			-0.1799

Text-Dependent Analysis Paper/Pencil Item Statistics

Column Heading	Definition
Content	Content Area
Grade	Grade
PubID	Item ID
Form	Form Number
Stand	Standard
Depth	Depth of Knowledge
N	N
Mean	Mean Score
P(1)	Proportion 1 Point
P(2)	Proportion 2 Points
P(3)	Proportion 3 Points
P(4)	Proportion 4 Points
P(OMIT)	Proportion Omits
P(INV)	Proportion Invalid Responses
PtBis	Point Biserial
Corr(1)	Correlation 1 Point
Corr(2)	Correlation 2 Points
Corr(3)	Correlation 3 Points
Corr(4)	Correlation 4 Points
Corr(OMIT)	Correlation Omits
Corr(INV)	Correlation Invalid Responses
Final	IRT Difficulty Estimate
Final Err	IRT Difficulty Error
Infit	Infit Standardized
Infit-MS	Infit Mean Square
Outfit	Outfit Standardized
Outfit-MS	Outfit Mean Square
M/F	Male/Female DIF Code
W/B	White/Black DIF Code
W/H	White/Hispanic DIF Code

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(1)	P(2)	P(3)	P(4)	P(OMIT)	P(INV)	PtBis	Corr(1)	Corr(2)	Corr(3)	Corr(4)	Corr (OMIT)	Corr (INV)	Final	Final Err	Infit	Infit-MS	Outfit	Outfit-MS	M/F	W/B	W/H
ELA	4	662028	0	E	3	76800	1.8395	0.3299	0.369	0.1502	0.0201	0.0139	0.117	0.6153	-0.3341	0.2959	0.4143	0.1952	-0.1333	-0.4529	1.1265	0.0144	-9.8994	0.5777	-9.8994	0.5824	A+	A-	A-
ELA	4	744970	1	E	3	1009	1.9673	0.2693	0.4071	0.2009	0.0196	0.0151	0.088	0.6208	-0.4017	0.2097	0.428	0.2098	-0.1424	-0.3812	1.0418	0.0433	-9.8994	0.565	-9.8994	0.5731	B+	A-	A-
ELA	4	748813	2	E	3	1008	1.8482	0.3298	0.3876	0.1636	0.0151	0.0169	0.0871	0.5925	-0.3579	0.2324	0.4297	0.1601	-0.0931	-0.395	1.1036	0.0489	-9.8994	0.5952	-9.8994	0.5993	B+	A-	A-
ELA	4	745947	3	E	3	983	2.12	0.2142	0.3893	0.2213	0.0489	0.0213	0.1049	0.6415	-0.3529	0.0824	0.4608	0.2777	-0.0955	-0.4333	0.7598	0.0469	-9.8994	0.6139	-9.8994	0.6198	A+	A-	A-
ELA	4	746026	4	E	3	1040	1.8942	0.3173	0.4142	0.1662	0.0267	0.0187	0.0569	0.5884	-0.4034	0.2313	0.3963	0.1907	-0.1875	-0.3413	0.9462	0.0554	-9.8994	0.618	-9.8994	0.6207	B+	A-	A-
ELA	4	748417	5	E	3	1026	1.8635	0.3396	0.3867	0.1564	0.0293	0.0142	0.0738	0.6012	-0.4033	0.2346	0.399	0.2128	-0.1122	-0.3476	0.9941	0.0517	-9.8994	0.6338	-9.8994	0.6341	A+	A-	A-
ELA	4	749318	6	E	3	1030	1.9544	0.272	0.4356	0.1858	0.0222	0.0196	0.0649	0.6013	-0.4145	0.1872	0.4049	0.2047	-0.1205	-0.3221	0.9215	0.0532	-9.8994	0.65	-9.8993	0.6522	A+	C-	B-
ELA	4	747678	7	E	3	1024	1.9795	0.2613	0.4373	0.1804	0.0311	0.0187	0.0711	0.5807	-0.4036	0.2037	0.3747	0.2127	-0.1439	-0.3317	0.8974	0.0533	-9.8993	0.6599	-9.8993	0.6601	B+	A-	B-
ELA	4	745541	8	E	3	1024	1.9023	0.3209	0.3884	0.1698	0.0311	0.0142	0.0756	0.6153	-0.404	0.1995	0.4171	0.2347	-0.1143	-0.3499	0.9355	0.0514	-9.8994	0.6073	-9.8994	0.6092	B+	A-	B-
ELA	4	747063	9	E	3	1032	2.0116	0.2436	0.4436	0.2062	0.024	0.0107	0.072	0.6035	-0.4044	0.1553	0.42	0.2009	-0.1046	-0.3618	0.9436	0.0546	-9.8994	0.6358	-9.8994	0.6379	A+	A-	A-
ELA	5	715584	0	E	3	80123	2.1008	0.1976	0.4642	0.2477	0.0219	0.0095	0.0591	0.6253	-0.398	0.0344	0.4798	0.2014	-0.125	-0.3524	0.4756	0.0225	-9.8993	0.6641	-9.8993	0.6657	B+	A-	A-
ELA	5	746193	1	E	3	1014	1.9201	0.2462	0.4951	0.1458	0.0142	0.0133	0.0853	0.5741	-0.3458	0.2151	0.4074	0.1689	-0.1031	-0.3956	1.007	0.0456	-9.8994	0.608	-9.8994	0.6132	B+	A-	A-
ELA	5	745129	2	E	3	1030	2.0262	0.1911	0.5209	0.192	0.0116	0.0133	0.0711	0.6193	-0.3808	0.128	0.4591	0.1799	-0.1299	-0.3867	0.9234	0.0545	-9.8994	0.5629	-9.8994	0.567	A+	B-	B-
ELA	5	746198	3	E	3	1047	2.0363	0.1884	0.536	0.1902	0.016	0.0098	0.0596	0.6089	-0.4026	0.1157	0.4466	0.1686	-0.0966	-0.3682	0.8066	0.0598	-9.8994	0.5895	-9.8994	0.5867	A+	A-	B-
ELA	5	747065	4	E	3	1056	1.9744	0.2311	0.5093	0.1893	0.0089	0.0062	0.0551	0.6207	-0.4537	0.1932	0.4348	0.1278	-0.0962	-0.351	1.025	0.0613	-9.8994	0.6069	-9.8994	0.6121	A+	C-	B-
ELA	5	746201	5	E	3	1019	2.002	0.2044	0.5102	0.176	0.0151	0.0133	0.0809	0.6164	-0.3925	0.1751	0.4474	0.1655	-0.1355	-0.3826	1.0741	0.0529	-9.8994	0.6007	-9.8994	0.6047	B+	A-	C-
ELA	5	746236	6	E	3	1058	1.9178	0.2622	0.5013	0.1689	0.008	0.0098	0.0498	0.5481	-0.3915	0.1834	0.3841	0.1379	-0.1017	-0.3022	0.9332	0.0626	-9.8993	0.6743	-9.8993	0.6772	B+	A-	A-
ELA	5	745197	7	E	3	1004	1.8217	0.2791	0.5004	0.1058	0.0071	0.0151	0.0924	0.5974	-0.3557	0.3364	0.3967	0.1142	-0.1558	-0.4187	1.3173	0.049	-9.8994	0.5937	-9.8994	0.5932	A+	B-	B-
ELA	5	745486	8	E	3	1026	2.0097	0.2018	0.5138	0.1822	0.0142	0.0116	0.0764	0.5956	-0.3842	0.147	0.4346	0.1714	-0.1231	-0.3545	0.9654	0.0532	-9.8994	0.5923	-9.8994	0.5936	B+	A-	A-
ELA	5	746305	9	E	3	1068	1.9167	0.2498	0.5413	0.1458	0.0124	0.0107	0.04	0.5713	-0.432	0.1909	0.3856	0.1444	-0.0928	-0.2586	0.8569	0.0663	-9.4893	0.6841	-9.4493	0.6817	B+	A-	A-
ELA	6	712602	0	E	3	73266	2.1644	0.1289	0.558	0.2159	0.0335	0.0114	0.0523	0.586	-0.3553	-0.0251	0.4185	0.2467	-0.1263	-0.3216	0.738	0.0201	-9.8994	0.5773	-9.8994	0.5696	A+	A-	B-
ELA	6	747068	1	E	3	995	2.1879	0.1219	0.5476	0.2562	0.0219	0.0105	0.0419	0.5993	-0.4001	-0.0429	0.4516	0.1905	-0.123	-0.3008	0.9718	0.0552	-9.8995	0.5428	-9.8995	0.5403	B+	A-	A-
ELA	6	747921	2	E	3	996	2.0361	0.2038	0.5171	0.2171	0.0105	0.0171	0.0343	0.6183	-0.4489	0.0702	0.4594	0.1447	-0.1193	-0.2359	0.9899	0.069	-9.8994	0.6223	-9.8994	0.6248	A+	C-	C-
ELA	6	746238	3	E	3	1004	2.1375	0.1581	0.5238	0.259	0.0152	0.0133	0.0305	0.61	-0.4104	-0.0396	0.477	0.1758	-0.1353	-0.2647	0.8248	0.0703	-9.8994	0.6058	-9.8994	0.6056	A+	C-	B-
ELA	6	747070	4	E	3	978	1.9949	0.2095	0.5286	0.1819	0.0114	0.0105	0.0581	0.6256	-0.4379	0.1297	0.4465	0.1726	-0.118	-0.2782	1.1293	0.0584	-9.8994	0.5962	-9.8994	0.5915	B+	B-	B-
ELA	6	747519	5	E	3	999	2.1161	0.1305	0.5971	0.2067	0.0171	0.0181	0.0305	0.5991	-0.3845	-0.0554	0.4871	0.1419	-0.1442	-0.2311	0.9015	0.0675	-9.8994	0.6189	-9.8994	0.6024	A+	C-	C-
ELA	6	745549	6	E	3	993	2.1259	0.1419	0.5619	0.2229	0.019	0.0086	0.0457	0.6058	-0.3635	-0.0427	0.4635	0.2192	-0.1037	-0.3126	0.9251	0.0655	-9.8994	0.5949	-9.8994	0.5855	A+	B-	B-
ELA	6	748025	7	E	3	994	2.0533	0.161	0.5829	0.1943	0.0086	0.0105	0.0429	0.5841	-0.3966	0.0307	0.4532	0.1239	-0.11	-0.2415	1.0235	0.0661	-9.8994	0.6362	-9.8994	0.623	A+	B-	C-
ELA	6	747928	8	E	3	980	2.0163	0.179	0.5648	0.1848	0.0048	0.0095	0.0571	0.5667	-0.3934	0.1291	0.4401	0.0335	-0.1224	-0.3205	1.3108	0.0616	-9.8994	0.6073	-9.8994	0.6005	A+	A-	B-

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(1)	P(2)	P(3)	P(4)	P(OMIT)	P(INV)	PtBis	Corr(1)	Corr(2)	Corr(3)	Corr(4)	Corr (OMIT)	Corr (INV)	Final	Final Err	Infit	Infit-MS	Outfit	Outfit-MS	M/F	W/B	W/H
ELA	6	748454	9	E	3	997	2.0772	0.1333	0.6133	0.199	0.0038	0.0076	0.0429	0.5725	-0.3923	0.0376	0.4425	0.0924	-0.1167	-0.2823	1.2113	0.0689	-9.8994	0.6371	-9.8994	0.6212	A+	B-	B-
ELA	7	719098	0	E	3	72897	2.0285	0.2492	0.4443	0.2071	0.0344	0.0137	0.0514	0.6427	-0.4581	0.123	0.4328	0.2443	-0.1313	-0.3059	0.8115	0.0191	-9.8994	0.5951	-9.8994	0.598	B+	A-	A-
ELA	7	747381	1	E	3	980	2.1388	0.2029	0.4476	0.2333	0.0495	0.019	0.0476	0.666	-0.464	0.0222	0.4618	0.2708	-0.1582	-0.2671	0.6789	0.0547	-9.8994	0.5701	-9.8994	0.572	A+	A-	A-
ELA	7	748817	2	E	3	1011	2.3294	0.119	0.4743	0.3029	0.0667	0.0143	0.0229	0.6317	-0.4049	-0.1779	0.3907	0.3426	-0.1302	-0.198	0.246	0.079	-9.8994	0.6122	-9.8994	0.6025	B+	A-	A-
ELA	7	748052	3	E	3	1011	2.1988	0.18	0.479	0.2362	0.0676	0.019	0.0181	0.6112	-0.415	-0.0931	0.4199	0.2932	-0.1671	-0.174	0.4068	0.0743	-9.8993	0.6535	-9.8994	0.6458	B+	A-	A-
ELA	7	749405	4	E	3	1028	2.1955	0.1733	0.5048	0.2371	0.0638	0.0095	0.0114	0.6134	-0.4284	-0.1087	0.4078	0.2969	-0.1456	-0.1446	0.2815	0.0939	-9.8994	0.6453	-9.8994	0.6389	B+	B-	A-
ELA	7	748821	5	E	3	995	2.1477	0.1686	0.5124	0.2248	0.0419	0.0124	0.04	0.6206	-0.4214	-0.0196	0.4493	0.2359	-0.1284	-0.2709	0.6471	0.0641	-9.8994	0.628	-9.8994	0.6229	B+	A-	A-
ELA	7	747449	6	E	3	995	2.1457	0.1495	0.5419	0.2248	0.0314	0.0143	0.0381	0.5959	-0.4476	0.0432	0.3763	0.238	-0.0972	-0.2557	0.7029	0.0649	-9.8994	0.6364	-9.8994	0.6279	B+	C-	B-
ELA	7	747427	7	E	3	995	2.3226	0.1333	0.4562	0.2771	0.081	0.0124	0.04	0.6433	-0.4178	-0.1323	0.3968	0.3416	-0.1338	-0.2452	0.4017	0.0646	-9.8994	0.6134	-9.8994	0.6105	B+	B-	A-
ELA	7	747388	8	E	3	979	2.0623	0.2419	0.4343	0.2124	0.0438	0.0229	0.0448	0.6499	-0.4418	0.0629	0.4541	0.2678	-0.1837	-0.2662	0.743	0.0586	-9.8994	0.6082	-9.8994	0.608	A+	A-	A-
ELA	7	749433	9	E	3	1014	2.1647	0.1743	0.5057	0.2381	0.0476	0.0105	0.0238	0.5932	-0.4148	-0.0469	0.3938	0.2737	-0.1287	-0.2105	0.4191	0.0741	-9.8993	0.6525	-9.8994	0.6495	A+	A-	A-
ELA	8	715197	0	E	3	73060	2.3145	0.1275	0.4593	0.3069	0.0603	0.0137	0.0322	0.6368	-0.4103	-0.1408	0.4306	0.2988	-0.1396	-0.2632	0.3024	0.0234	-9.8992	0.7582	-9.8992	0.756	B+	A-	A-
ELA	8	748114	1	E	3	972	2.3292	0.161	0.3933	0.2771	0.0943	0.019	0.0552	0.6594	-0.3876	-0.1084	0.4142	0.3672	-0.1545	-0.3333	0.3193	0.0501	-9.8995	0.5356	-9.8995	0.541	B+	B-	A-
ELA	8	748504	2	E	3	965	2.1389	0.1952	0.4457	0.2333	0.0448	0.02	0.061	0.5909	-0.3837	0.0544	0.4089	0.2483	-0.1394	-0.3332	0.5222	0.0549	-9.8994	0.5966	-9.8994	0.5969	B+	A-	A-
ELA	8	748843	3	E	3	996	2.0873	0.2286	0.4581	0.2124	0.0495	0.0162	0.0352	0.6368	-0.4255	0.023	0.4142	0.3118	-0.1679	-0.2637	0.5009	0.0621	-9.8994	0.5919	-9.8994	0.5907	B+	A-	A-
ELA	8	748887	4	E	3	958	2.1775	0.1733	0.4495	0.2438	0.0457	0.0143	0.0733	0.6547	-0.4157	0.0457	0.4185	0.3026	-0.1433	-0.3502	0.6357	0.0534	-9.8994	0.5676	-9.8994	0.5711	B+	A-	A-
ELA	8	738318	5	E	3	973	2.1552	0.1829	0.4733	0.2143	0.0562	0.0105	0.0629	0.6184	-0.3721	0.0159	0.4202	0.2888	-0.138	-0.3666	0.5423	0.0558	-9.8994	0.5935	-9.8994	0.5886	A+	B-	A-
ELA	8	748136	6	E	3	997	2.4152	0.101	0.4476	0.3067	0.0943	0.0162	0.0343	0.5769	-0.3258	-0.1907	0.3531	0.3312	-0.1281	-0.2774	0.0807	0.069	-9.8994	0.6495	-9.8994	0.6461	C+	A-	A-
ELA	8	745622	7	E	3	984	2.2205	0.1848	0.44	0.2333	0.079	0.019	0.0438	0.6297	-0.4351	0.0067	0.3954	0.3063	-0.1805	-0.2915	0.3133	0.061	-9.8994	0.5992	-9.8994	0.599	B+	A-	B-
ELA	8	747402	8	E	3	996	2.3544	0.1362	0.4362	0.28	0.0962	0.0143	0.0371	0.6452	-0.413	-0.1186	0.3623	0.3718	-0.1715	-0.2722	0.1039	0.0656	-9.8994	0.5884	-9.8994	0.5843	C+	A-	A-
ELA	8	748147	9	E	3	995	2.2211	0.18	0.4438	0.2581	0.0657	0.0152	0.0371	0.6551	-0.4383	-0.0543	0.428	0.3146	-0.1727	-0.2575	0.315	0.0641	-9.8994	0.5735	-9.8994	0.5728	A+	A-	A-

Text-Dependent Analysis Computer-Based Item Statistics

Column Heading	Definition
Content	Content Area
Grade	Grade
PubID	Item ID
Form	Form Number
Stand	Standard
Depth	Depth of Knowledge
N	N
Mean	Mean Score
P(1)	Proportion 1 Point
P(2)	Proportion 2 Points
P(3)	Proportion 3 Points
P(4)	Proportion 4 Points
P(OMIT)	Proportion Omits
P(INV)	Proportion Invalid Responses
PtBis	Point Biserial
Corr(1)	Correlation 1 Point
Corr(2)	Correlation 2 Points
Corr(3)	Correlation 3 Points
Corr(4)	Correlation 4 Points
Corr(OMIT)	Correlation Omits
Corr(INV)	Correlation Invalid Responses

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(1)	P(2)	P(3)	P(4)	P(OMIT)	P(INV)	PtBis	Corr(1)	Corr(2)	Corr(3)	Corr(4)	Corr (OMIT)	Corr (INV)
ELA	4	662028	0	E	3	25694	1.7335	0.3877	0.3497	0.1178	0.0185	0.0047	0.1215	0.6117	-0.3392	0.3541	0.3851	0.1916	-0.0672	-0.456
ELA	4	744970	1	E	3	306	1.5163	0.4773	0.2587	0.0773	0.0027		0.184	0.6309	-0.3179	0.4453	0.4094	0.0839		-0.3869
ELA	4	748813	2	E	3	355	1.8141	0.328	0.4907	0.104	0.024		0.0533	0.6173	-0.4762	0.3337	0.3344	0.2149		-0.3482
ELA	4	745947	3	E	3	353	2.1076	0.208	0.4827	0.192	0.0587		0.0587	0.4795	-0.3316	0.0774	0.3208	0.2073		-0.3368
ELA	4	746026	4	E	3	358	1.7486	0.3707	0.4587	0.12	0.0053		0.0453	0.5838	-0.4687	0.3424	0.3452	0.1096		-0.3095
ELA	4	748417	5	E	3	355	1.8085	0.3653	0.424	0.1307	0.0267		0.0533	0.6119	-0.4825	0.2621	0.3925	0.1975		-0.2727
ELA	4	749318	6	E	3	356	1.9663	0.256	0.5013	0.16	0.032		0.0507	0.5212	-0.3827	0.1433	0.3128	0.2224		-0.2663
ELA	4	747678	7	E	3	360	1.8194	0.3627	0.432	0.1413	0.024		0.04	0.6177	-0.5253	0.3027	0.3468	0.2062		-0.2538
ELA	4	745541	8	E	3	353	1.8839	0.288	0.5013	0.1253	0.0267		0.0587	0.5996	-0.4388	0.2388	0.3732	0.2063		-0.3296
ELA	4	747063	9	E	3	359	1.8997	0.2933	0.496	0.1387	0.0293		0.0427	0.591	-0.4315	0.143	0.3892	0.2264		-0.2361
ELA	5	715584	0	E	3	29813	2.0476	0.2615	0.4023	0.2292	0.0383	0.0034	0.0652	0.6574	-0.4536	0.1023	0.4548	0.2608	-0.0691	-0.3566
ELA	5	746193	1	E	3	317	1.7161	0.3547	0.3893	0.088	0.0133		0.1547	0.6277	-0.3817	0.3408	0.4218	0.184		-0.3434
ELA	5	745129	2	E	3	356	2.059	0.2187	0.4907	0.2053	0.0347		0.0507	0.6107	-0.4394	0.1263	0.3813	0.2501		-0.3707
ELA	5	746198	3	E	3	364	2.0055	0.2213	0.544	0.184	0.0213		0.0293	0.5492	-0.4098	0.0678	0.3703	0.2067		-0.2192
ELA	5	747065	4	E	3	361	2.0249	0.24	0.48	0.2213	0.0213		0.0373	0.6208	-0.4933	0.1448	0.4029	0.2006		-0.3055
ELA	5	746201	5	E	3	357	1.93	0.2507	0.528	0.1627	0.0107		0.048	0.5536	-0.411	0.2002	0.3545	0.1524		-0.3195
ELA	5	746236	6	E	3	363	2.0551	0.216	0.512	0.2107	0.0293		0.032	0.5613	-0.4093	0.0438	0.3966	0.2016		-0.2795
ELA	5	745197	7	E	3	351	1.8632	0.2907	0.496	0.136	0.0133		0.064	0.6377	-0.5197	0.3721	0.3465	0.1471		-0.3502
ELA	5	745486	8	E	3	355	2.0789	0.1813	0.5307	0.2133	0.0213		0.0533	0.6483	-0.4666	0.1026	0.447	0.194		-0.3675
ELA	5	746305	9	E	3	365	1.9452	0.28	0.496	0.168	0.0293		0.0267	0.5565	-0.4436	0.1298	0.3462	0.2147		-0.1949
ELA	6	712602	0	E	3	37286	2.0905	0.1806	0.5364	0.1885	0.0388	0.0038	0.0518	0.5964	-0.3968	0.0406	0.3956	0.2649	-0.0702	-0.312
ELA	6	747068	1	E	3	398	1.809	0.3089	0.4444	0.1222	0.0089		0.1156	0.6965	-0.4395	0.2776	0.5022	0.1822		-0.3643
ELA	6	747921	2	E	3	442	2.0679	0.2022	0.5378	0.2156	0.0267		0.0178	0.5787	-0.4413	0.0066	0.3949	0.2221		-0.1833
ELA	6	746238	3	E	3	435	2.2046	0.1467	0.5244	0.2467	0.0489		0.0333	0.5962	-0.378	-0.1032	0.391	0.2977		-0.2644
ELA	6	747070	4	E	3	429	2.0513	0.1644	0.5956	0.1733	0.02		0.0467	0.5709	-0.3763	0.0696	0.3892	0.217		-0.3431
ELA	6	747519	5	E	3	433	2.1201	0.1222	0.6178	0.2067	0.0156		0.0378	0.5511	-0.4038	0.0214	0.3934	0.148		-0.2924
ELA	6	745549	6	E	3	434	2.129	0.1667	0.5333	0.2378	0.0267		0.0356	0.6104	-0.453	0.0077	0.4167	0.2264		-0.2642
ELA	6	748025	7	E	3	437	2.0892	0.1511	0.6156	0.1711	0.0333		0.0289	0.5734	-0.3626	-0.0498	0.4111	0.2407		-0.2623
ELA	6	747928	8	E	3	438	2.0457	0.1733	0.5956	0.1911	0.0133		0.0267	0.6189	-0.4352	0.0192	0.4474	0.1917		-0.2643

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(1)	P(2)	P(3)	P(4)	P(OMIT)	P(INV)	PtBis	Corr(1)	Corr(2)	Corr(3)	Corr(4)	Corr (OMIT)	Corr (INV)
ELA	6	748454	9	E	3	439	2.0387	0.1533	0.6444	0.1644	0.0133		0.0244	0.5698	-0.3938	0.0012	0.4334	0.1527		-0.2388
ELA	7	719098	0	E	3	38193	1.9585	0.2909	0.4294	0.1748	0.0387	0.0065	0.0598	0.656	-0.4816	0.1877	0.4121	0.2672	-0.0805	-0.3195
ELA	7	747381	1	E	3	415	1.8458	0.3644	0.3867	0.12	0.0511		0.0778	0.668	-0.4635	0.2118	0.35	0.3824		-0.2913
ELA	7	748817	2	E	3	442	2.4095	0.1	0.4933	0.2756	0.1133		0.0178	0.6147	-0.3859	-0.257	0.3799	0.3357		-0.2414
ELA	7	748052	3	E	3	437	2.2471	0.1556	0.5089	0.2178	0.0889		0.0289	0.6385	-0.4368	-0.0856	0.3256	0.3878		-0.2605
ELA	7	749405	4	E	3	440	2.1795	0.1849	0.5033	0.2227	0.069		0.02	0.5946	-0.4217	-0.0533	0.3247	0.3433		-0.2267
ELA	7	748821	5	E	3	430	2.2326	0.1378	0.5178	0.24	0.06		0.0444	0.5684	-0.3867	-0.0416	0.3253	0.3113		-0.2851
ELA	7	747449	6	E	3	432	2.1875	0.1581	0.5256	0.2183	0.0601		0.0379	0.5895	-0.3821	-0.0845	0.3846	0.3023		-0.2573
ELA	7	747427	7	E	3	430	2.3186	0.1222	0.4978	0.2444	0.0911	0.0022	0.0422	0.5881	-0.3903	-0.0857	0.2557	0.3922	0.0438	-0.2692
ELA	7	747388	8	E	3	431	2.116	0.2111	0.4844	0.2022	0.06		0.0422	0.643	-0.4998	0.0597	0.4024	0.2829		-0.2719
ELA	7	749433	9	E	3	433	2.3233	0.1467	0.4489	0.2756	0.0911		0.0378	0.5872	-0.4047	-0.1161	0.3788	0.294		-0.2778
ELA	8	715197	0	E	3	39294	2.2588	0.1676	0.4448	0.2581	0.0774	0.0069	0.0451	0.6565	-0.4587	-0.0478	0.3993	0.3324	-0.0884	-0.2945
ELA	8	748114	1	E	3	392	2.0204	0.2956	0.3244	0.1889	0.0622		0.1289	0.7643	-0.4768	0.1117	0.5026	0.3845		-0.3711
ELA	8	748504	2	E	3	428	2.0888	0.2378	0.4511	0.2022	0.06		0.0489	0.6628	-0.4954	0.0669	0.4187	0.3039		-0.2909
ELA	8	748843	3	E	3	423	2.078	0.2121	0.4888	0.2009	0.0424		0.0558	0.6145	-0.4392	0.076	0.3689	0.2857		-0.2782
ELA	8	748887	4	E	3	423	2.104	0.2022	0.4822	0.2111	0.0444		0.06	0.6047	-0.3958	0.047	0.4103	0.2581		-0.3584
ELA	8	738318	5	E	3	420	2.131	0.2143	0.4643	0.1808	0.0781		0.0625	0.6178	-0.4511	0.1092	0.3441	0.3125		-0.3539
ELA	8	748136	6	E	3	435	2.4621	0.0913	0.4454	0.3252	0.1069		0.0312	0.6063	-0.3804	-0.2363	0.3676	0.3289		-0.2693
ELA	8	745622	7	E	3	428	2.2664	0.1782	0.4209	0.2762	0.078		0.0468	0.6106	-0.4249	-0.0137	0.3525	0.322		-0.3532
ELA	8	747402	8	E	3	429	2.373	0.1156	0.4733	0.2578	0.1067		0.0467	0.5994	-0.4174	-0.0883	0.3238	0.3393		-0.3263
ELA	8	748147	9	E	3	427	2.267	0.1808	0.4308	0.2478	0.0938	0.0022	0.0446	0.6775	-0.4774	-0.0515	0.3813	0.3762	-0.0442	-0.3049

Technology-Enhanced Computer-Based Item Statistics

Column Heading	Definition
Content	Content Area
Grade	Grade
PubID	Item ID
Form	Form Number
Stand	Standard
Depth	Depth of Knowledge
N	N
Mean	Mean Score
P(0)	Proportion 0 Points
P(1)	Proportion 1 Point
P(OMIT)	Proportion Omits
PtBis	Point Biserial
Corr(0)	Correlation 0 Points
Corr(2)	Correlation 1 Point
Corr(OMIT)	Correlation Omits
Final	IRT Difficulty Estimate
Final Err	IRT Difficulty Error
Infit	Infit Standardized
Infit-MS	Infit Mean Square
Outfit	Outfit Standardized
Outfit-MS	Outfit Mean Square
M/F	Male/Female DIF Code
W/B	White/Black DIF Code
W/H	White/Hispanic DIF Code

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(OMIT)	PtBis	Corr(0)	Corr(1)	Corr (OMIT)	Final	Final Err	Infit	Infit-MS	Outfit	Outfit-MS	M/F	W/B	W/H
SCIENCE	4	776817	1	1	2	7621	0.3536	0.644	0.3523	0.0037	0.5127	-0.5039	0.5139	-0.0695	1.3266	0.1372	-3.2892	0.8168	-3.2092	0.7749	A-	A-	A-
SCIENCE	4	776804	1	2	2	7634	0.273	0.7256	0.2725	0.002	0.3677	-0.3627	0.3684	-0.0495	1.7593	0.147	0.231	1.0157	0.7111	1.07	A-	A+	A+
SCIENCE	4	776818	2	1	2	2282	0.1595	0.8401	0.1594	0.0004	0.2777	-0.2749	0.2778	-0.0458	3.1703	0.1772	-0.7691	0.9137	-0.129	0.9653	A+	A+	A+
SCIENCE	4	776803	2	4	2	2282	0.2989	0.7008	0.2987	0.0004	0.3918	-0.3902	0.392	-0.0362	2.2458	0.1443	-1.0591	0.9283	-1.2291	0.8768	A-	A-	A-
SCIENCE	4	776819	3	3	2	2274	0.3237	0.6743	0.3227	0.0031	0.2307	-0.2262	0.2315	-0.04	2.0893	0.1381	1.0211	1.058	2.0212	1.1896	A-	A-	A-
SCIENCE	4	776823	3	5	2	2278	0.7748	0.2249	0.7738	0.0013	0.4797	-0.479	0.48	-0.0231	-0.2085	0.158	-2.0492	0.8313	-2.1293	0.7195	A+	A-	A-
SCIENCE	4	776827	4	1	3	2266	0.1801	0.8196	0.18	0.0004	0.2974	-0.2945	0.2976	-0.0503	3.0282	0.1676	-1.2091	0.8802	-0.4191	0.9275	A-	A+	A+
SCIENCE	4	776824	4	2	2	2266	0.9228	0.0772	0.9224	0.0004	0.2461	-0.2454	0.2487	-0.0503	-1.5474	0.2363	1.7013	1.3332	1.9217	1.657	A-	A-	A-
SCIENCE	4	776830	5	2	2	2294	0.8352	0.1646	0.8341	0.0013	0.4266	-0.4253	0.4282	-0.043	-0.663	0.1754	-1.1991	0.8734	-1.2792	0.7645	A-	A+	A+
SCIENCE	4	776828	5	5	2	2280	0.689	0.3087	0.6839	0.0074	0.4459	-0.4302	0.4556	-0.1528	0.3023	0.1435	-1.2691	0.9164	-0.4691	0.9466	A-	A-	A-
SCIENCE	4	776832	6	2	2	2284	0.134	0.8656	0.1339	0.0004	0.3228	-0.3197	0.3228	-0.0433	3.4097	0.191	-1.9492	0.7662	-1.2693	0.7466	A+	A+	A-
SCIENCE	4	776834	6	4	2	2265	0.3691	0.6254	0.3659	0.0088	0.3532	-0.3385	0.3555	-0.0799	1.9043	0.1373	-3.0692	0.8338	-2.6492	0.7995	A-	A+	A+
SCIENCE	4	776836	7	1	2	2277	0.7958	0.204	0.7951	0.0009	0.5188	-0.5181	0.5187	-0.0188	-0.3356	0.1606	-2.8492	0.7634	-2.7394	0.6364	A-	A-	A-
SCIENCE	4	776835	7	2	2	2275	0.1675	0.8311	0.1672	0.0018	0.2771	-0.2704	0.2776	-0.0537	3.1302	0.1711	0.341	1.032	-0.3491	0.9328	A-	A-	A+
SCIENCE	4	776842	8	1	2	2256	0.2863	0.7137	0.2863		0.2423	-0.2423	0.2423		2.2803	0.145	-0.9291	0.9365	-0.8791	0.9035	A-	A+	A+
SCIENCE	4	776852	8	1	2	2254	0.638	0.3617	0.6374	0.0009	0.3935	-0.3917	0.3947	-0.0518	0.5562	0.1344	0.161	1.0073	0.041	1.0015	A-	A-	A-
SCIENCE	4	776846	9	2	2	2288	0.3339	0.6658	0.3338	0.0004	0.1902	-0.1886	0.1906	-0.0435	2.0646	0.1396	2.8112	1.174	3.5014	1.3566	A-	A+	A-
SCIENCE	4	776853	9	3	2	2287	0.3581	0.6413	0.3578	0.0009	0.4563	-0.456	0.4558	0.0083	1.9424	0.1374	-2.8792	0.8471	-3.2193	0.748	A+	A-	A-
SCIENCE	4	776857	10	2	2	2267	0.3824	0.6159	0.3814	0.0026	0.2864	-0.282	0.2877	-0.0512	1.7874	0.1335	1.3911	1.0674	1.1211	1.0836	A-	A-	A-
SCIENCE	4	776854	10	5	2	2264	0.5689	0.4294	0.5667	0.004	0.2675	-0.2586	0.2734	-0.1196	0.9065	0.1315	2.0811	1.1005	1.5511	1.1	A-	B-	A-
SCIENCE	4	776858	11	1	3	2293	0.2477	0.7477	0.2462	0.0061	0.0687	-0.0512	0.0734	-0.1206	2.5253	0.1489	1.3011	1.0983	1.8812	1.2264	A+	A+	A-
SCIENCE	4	776859	11	3	3	2302	0.215	0.7833	0.2146	0.0022	0.2246	-0.2152	0.2258	-0.0862	2.7258	0.1558	0.331	1.0254	2.7114	1.3921	A+	A+	A+
SCIENCE	4	776863	12	1	2	2242	0.4991	0.5007	0.4989	0.0004	0.3215	-0.3198	0.3221	-0.054	1.2572	0.1304	1.2411	1.0555	1.0211	1.0581	A-	A+	A-
SCIENCE	4	776866	12	2	3	2214	0.8866	0.1119	0.8752	0.0129	0.2109	-0.201	0.2431	-0.1503	-0.9581	0.1936	1.3312	1.1814	0.6411	1.1249	A-	A+	A-
SCIENCE	8	776807	1	1	2	7782	0.4787	0.5189	0.4765	0.0046	0.6539	-0.6465	0.6549	-0.0597	0.2341	0.1209	-5.9892	0.7569	-4.5692	0.7564	A+	A-	A-
SCIENCE	8	776805	1	3	2	7672	0.3785	0.6099	0.3715	0.0187	0.3584	-0.329	0.3659	-0.1205	0.7578	0.125	2.1911	1.1192	1.6511	1.1134	A-	A-	A-
SCIENCE	8	776809	2	3	2	3317	0.3714	0.6211	0.367	0.0119	0.1136	-0.0903	0.124	-0.147	1.3689	0.1259	4.1612	1.2304	4.5114	1.3912	A-	A-	A-
SCIENCE	8	776810	2	4	3	3320	0.5771	0.4182	0.5707	0.011	0.5411	-0.5236	0.5461	-0.1152	0.3496	0.1239	-2.8291	0.8664	-1.3791	0.8999	A+	A-	A-
SCIENCE	8	776808	3	1	2	3360	0.1786	0.8207	0.1784	0.0009	0.4782	-0.4773	0.478	0.003	2.5237	0.1517	-3.1893	0.7454	-3.7495	0.5337	A+	A+	A-

Content	Grade	PubID	Form	Stand	Depth	N	Mean	P(0)	P(1)	P(OMIT)	PtBis	Corr(0)	Corr(1)	Corr (OMIT)	Final	Final Err	Infit	Infit-MS	Outfit	Outfit-MS	M/F	W/B	W/H
SCIENCE	8	776811	3	1	2	3357	0.7408	0.2587	0.7395	0.0018	0.4446	-0.4412	0.4475	-0.0761	-0.5496	0.1372	-3.6392	0.7712	-3.4793	0.6588	A-	A+	A-
SCIENCE	8	776812	4	4	2	3365	0.271	0.7266	0.2701	0.0033	0.2668	-0.2564	0.2686	-0.0875	1.8716	0.1357	2.3512	1.1615	2.3513	1.2705	B-	A-	A-
SCIENCE	8	776813	4	5	3	3282	0.3915	0.5915	0.3806	0.0278	0.4627	-0.4098	0.4698	-0.1621	1.2661	0.1257	-2.7391	0.8613	-2.7492	0.8067	A+	A-	A-
SCIENCE	8	776814	5	2	2	3381	0.2952	0.7023	0.2941	0.0035	0.3381	-0.3273	0.3395	-0.0846	1.7299	0.1315	1.0311	1.0624	1.0411	1.0988	A-	A-	A-
SCIENCE	8	776831	5	2	2	3382	0.5101	0.4884	0.5084	0.0032	0.3201	-0.3143	0.3229	-0.0759	0.6204	0.1205	2.1811	1.0969	1.8111	1.1076	A+	A+	A-
SCIENCE	8	776820	6	1	2	3274	0.3552	0.6353	0.35	0.0147	0.3557	-0.3217	0.3628	-0.1507	1.4407	0.1246	-0.329	0.9828	-0.579	0.9553	A+	A+	A+
SCIENCE	8	776837	6	3	2	3303	0.185	0.8101	0.1839	0.006	0.399	-0.3772	0.3999	-0.0896	2.4665	0.1507	-1.8292	0.8465	-1.0592	0.847	A-	A-	A+
SCIENCE	8	776816	7	2	3	3357	0.2064	0.7919	0.206	0.0021	0.2937	-0.2881	0.2941	-0.044	2.2881	0.1444	-2.4592	0.8213	-2.1493	0.732	A-	A-	A-
SCIENCE	8	776838	7	3	2	3356	0.8084	0.1911	0.8065	0.0024	0.2944	-0.2925	0.298	-0.0555	-1.0173	0.1521	-1.1591	0.9008	-0.3291	0.9427	C-	C-	A-
SCIENCE	8	776840	8	1	2	3360	0.3086	0.6903	0.3082	0.0015	0.4441	-0.4417	0.444	-0.0202	1.6633	0.1312	-1.4591	0.9148	-1.4691	0.8659	A-	A-	A-
SCIENCE	8	776833	8	2	2	3340	0.5323	0.4642	0.5284	0.0074	0.3232	-0.3106	0.3295	-0.112	0.5643	0.1216	2.8711	1.1382	3.1912	1.2058	A-	A-	A-
SCIENCE	8	776839	9	2	2	3369	0.3847	0.6133	0.3834	0.0033	0.3381	-0.3313	0.3395	-0.0653	1.2335	0.1237	2.0511	1.1023	2.6312	1.1926	A-	A-	A-
SCIENCE	8	776844	9	2	2	3375	0.1283	0.8704	0.1281	0.0015	0.2158	-0.2081	0.2163	-0.0626	2.9236	0.1754	1.9412	1.2407	1.8714	1.3973	A-	A-	A+
SCIENCE	8	776841	10	2	2	3401	0.3993	0.6005	0.3992	0.0003	0.4078	-0.4071	0.4079	-0.0233	1.1896	0.1227	-1.7991	0.9166	-1.7091	0.8904	C-	A+	A+
SCIENCE	8	776843	10	2	2	3398	0.4956	0.5038	0.495	0.0012	0.4015	-0.3991	0.4023	-0.0466	0.7208	0.1204	-0.819	0.9644	-0.9991	0.9402	A-	A+	A+
SCIENCE	8	776847	11	3	2	3397	0.4286	0.5697	0.4274	0.0029	0.2944	-0.2885	0.2964	-0.0699	1.0303	0.1224	1.1811	1.0551	1.2011	1.0782	B-	A-	A-
SCIENCE	8	776850	11	3	2	3403	0.2542	0.7449	0.2539	0.0012	0.3872	-0.3857	0.3873	-0.0126	1.968	0.1372	-1.4091	0.9049	-1.4992	0.8389	A-	A-	A-
SCIENCE	8	776848	12	2	2	3397	0.3444	0.6542	0.3437	0.0021	0.3806	-0.3773	0.3811	-0.0343	1.4445	0.1273	-0.909	0.9509	-0.509	0.9562	A-	A-	A-
SCIENCE	8	776851	12	3	2	3376	0.3012	0.693	0.2988	0.0082	0.111	-0.0933	0.1168	-0.1154	1.6924	0.1317	3.9513	1.2551	4.6215	1.5179	A-	A-	A+

APPENDIX G: 2024 TEST BOOK SECTION LAYOUT PLANS

ENGLISH LANGUAGE ARTS TEST/ANSWER BOOKLET SECTION LAYOUT FOR GRADES 4, 5, 6, 7, AND 8

English Language Arts Core	
Core/common standalone MC items	9
Core/common passage-based MC items	23
3 core 2 pt EBSR items	6
3 core 3 pt EBSR items	9
1 core 4 pt TDA	16 (weighted x 4)
Total	63 points

The estimated testing time for English language arts is approximately 225–246 minutes (including placeholder items and embedded field-test items). [Timing assumes 30 min per TDA; 3 to 5 min per EBSR; 1½ to 2 min per MC, and 7 min per reading passage set.]

Section	Content	Number of MC/EBSR	MC/EBSR Item Breakdown	Number of TDA	TDA Item Breakdown	Estimated Number of Passages	Section Time (in minutes)
1	Conventions of Standard English (Writing) and Reading	21–24 MC 4–5 EBSR	4–5 core MC language items, 0–1 (PU) MC language item, 1 FT MC language item, 15–18 core MC reading items, 2–3 2pt EBSR reading items, 2–3 3pt EBSR reading items	0	N/A	3	67–78
2	Reading and Text-Dependent Analysis (Reading/ Writing)	14 MC 2 EBSR	8 FT MC reading items, 2 EBSR FT reading items	1	1–field-test TDA	1	70
3	Conventions of Standard English (Writing), Reading and Text-Dependent Analysis (Reading/ Writing)	11–14 MC	6–placeholder items, 10–field-test items	1	1–field-test TDA	2	70–80

Note: There were nine forms per grade.

English Language Arts Test/Answer Booklet Section Layout for Grade 3

English Language Arts Core	
Core/common standalone MC items	9
Core/common passage-based MC items	20
2 core 2 pt EBSR items	4
2 core 3 pt EBSR items	6
2 core 3 pt SA items	6
Total	45 points

The estimated testing time for reading is approximately 134–166 minutes (including psychometric use items and embedded field-test items). [Timing assumes 5 to 10 min per SA, 3 to 5 min per EBSR, 1½ to 2 min per MC, and 7 min per reading passage set.]

Section	Content	Nbr of MC/EBSR	MC/EBSR Item Breakdown	Nbr of SA	SA Item Breakdown	Estimated Nbr of Passages	Section Time (in min)
1	Conventions of Standard English (Writing) and Reading	14–18 MC 1–3 EBSR	4–5 core MC language items, 0–1 (EB) MC language item, 1 FT MC language item, 8–12 core MC reading items, 0–2 2pt EBSR reading items, 0–2 3pt EBSR reading items	1	1 core	2	43–59
2	Reading	14 MC 2 EBSR	8 MC FT reading items, 2 EBSR FT reading items	1	1 field-test	1	35
3	Conventions of Standard English (Writing) and Reading	14–18 MC 1–3 EBSR	4–5 core MC language items, 0–1 (EB) MC language item, 1 FT MC language item, 8–12 core MC reading items, 0–2 2pt EBSR reading items, 0–2 3pt EBSR reading items	1	1 core	2	43–59

Note: There were nine forms per grade.

MATHEMATICS TEST/ANSWER BOOK SECTION LAYOUT FOR GRADES 3, 4, 5, 6, 7, AND 8

Mathematics Core	
Core/common MC items	40
3 core 4 pt OE items	12
Total	52 points

The estimated testing time for mathematics is approximately 156 minutes. [Timing assumes 5 to 10 min per OE and 1½ to 2 min per MC.]

Section	Content	Number of MC	MC Item Breakdown	Number of OE	OE Item Breakdown	Section Time (in minutes)
1	Mathematics	24	20–common (core) items (includes 3 non–calc in Grades 4–8), 1 psychometric use/placeholder, 3–embedded field-test items	2	2–common (core) items	78
2	Mathematics	24	20–common (core) items, 1–psychometric use/placeholder, 3–embedded field-test items	2	2–common (core) item, 1–embedded field-test item	78

Notes. 1) There were nine forms per grade. 2) The ruler items in Grade 3 and the protractor items in Grade 4 may fall in Section 1, 2, or 3. 3) Calculators are not allowed on the Grade 3 test. In Grades 4–8, a portion of section 1 is considered "non-calc."

SCIENCE TEST/ANSWER BOOK SECTION LAYOUT

General Information (see grade level page for specifics)

- Timing Key: MC/TE = 1 to 1½ min; 2 pt OE = 5 min; 4 pt OE = 10 min; G8 Scenario stimulus = 3 min
- There are 12 forms per grade.
- Within a section at Grade 4, MC/TE *most likely* will precede OE items.
- Within a section at Grade 8, non-scenario MC/TE items *most likely* will precede scenario-based MC/TE items which will precede OE items.
- Grades 4 and 8 will have scannable Test Booklets.
- *Generally*, core items will precede psychometric use items, which will precede field-test items.

Science: Grade 4

Core/common MC items	38 (16 core linking)
5 core 2 pt OE items	5 (2 core linking)
Total	48 points

The estimated Grade 4 testing time for science is approximately 76 minutes. [Timing assumes 5 min per 2 pt OE and 1 min per MC/TE.]

Grade	Section	Number of MC/TE	Estimated MC/TE Item Breakdown	Number of OE	Estimated OE Item Breakdown	Testing Time
4	1	23	19–core items, 1–psychometric use item, 3–embedded field-test items	3	3-common (core) items	38
4	2	23	29-common (core) items, 1-psychometric use item, 4-embedded field-test items	3	2-common (core) items, 1-embedded field-test item	38

Science: Grade 8

Core/common MC items	38 (16 core linking)
5 core 2 pt OE items	10 (2 core linking)
Total	48 points

The estimated grade 8 testing time is 90 minutes per grade for science. [Timing assumes 5 min per 2 pt OE, 1 min per MC/TE, and 3 min per grade 8 scenario.]

Grade	Section	Number of MC/TE	Estimated MC/TE Item Breakdown	Number of OE	Estimated OE Item Breakdown	Testing Time
8	1	24	17–core items, 4–embedded field-test scenario-based items, 1–psychometric use item, 2–embedded field-test items	3	3-common (core) items	45
8	2	24	17–core items, 4–core scenario-based items, 1–psychometric use item, 2–embedded field-test items	3	2-common (core) items, 1-embedded field-test item	45

APPENDIX H: MEAN SCALED SCORES BY FORM

The tables provide the mode (All, paper, or CBT), form number (Form), the number of students (N), the minimum scaled score (Min), the maximum scaled score (Max), the median scaled score (Med), the mean scaled score (Mean), and the standard deviation (STD) of the scaled score. A value of 00 for form represents all forms.

Mathematics Grade 3 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	112845	600	1544	1005	1011.05	120.35
All	01	16836	600	1544	971	984.38	120.73
All	02	12046	659	1544	1014	1015.11	119.36
All	03	12015	600	1544	1014	1015.38	119.89
All	04	12001	600	1544	1014	1016.59	120.74
All	05	11966	600	1544	1014	1015.26	120.02
All	06	11996	600	1544	1014	1015.51	119.59
All	07	11993	600	1544	1014	1015.44	119.44
All	08	11977	659	1544	1014	1015.54	118.81
All	09	12015	600	1544	1014	1016.93	119.49
Paper	00	85850	600	1544	1005	1011.59	120.67
Paper	01	9966	600	1544	1001	1007.46	121.20
Paper	02	9531	702	1544	1005	1011.10	120.10
Paper	03	9478	600	1544	1005	1012.26	121.33
Paper	04	9495	600	1544	1005	1012.69	121.73
Paper	05	9446	600	1544	1005	1011.35	120.72
Paper	06	9488	600	1544	1005	1012.08	120.37
Paper	07	9463	600	1544	1005	1012.38	120.35
Paper	08	9484	659	1544	1005	1011.53	120.06
Paper	09	9499	600	1544	1005	1013.69	120.06
CBT	00	26995	600	1544	1005	1009.31	119.28
CBT	01	6870	659	1544	927	950.89	111.86
CBT	02	2515	659	1421	1031	1030.29	115.23
CBT	03	2537	702	1421	1022	1027.07	113.59
CBT	04	2506	734	1544	1031	1031.38	115.71
CBT	05	2520	702	1421	1022	1029.93	116.20
CBT	06	2508	600	1544	1031	1028.50	115.64
CBT	07	2530	702	1421	1031	1026.90	115.25
CBT	08	2493	759	1421	1031	1030.80	112.63
CBT	09	2516	702	1544	1022	1029.17	116.51

Mathematics Grade 4 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	116862	600	1533	993	1002.94	120.68
All	01	18086	600	1533	959	974.93	117.98
All	02	12442	636	1533	1002	1007.16	119.93
All	03	12279	680	1533	1002	1007.85	121.38
All	04	12290	600	1533	1002	1007.21	120.13
All	05	12328	712	1533	1002	1007.65	119.80
All	06	12360	636	1533	1002	1008.30	121.10
All	07	12307	636	1533	1002	1007.52	121.02
All	08	12411	680	1533	1002	1007.84	119.63
All	09	12359	600	1533	1002	1011.03	120.68
Paper	00	86698	600	1533	993	1002.12	120.90
Paper	01	10152	600	1533	985	996.01	120.12
Paper	02	9632	636	1533	993	1001.96	119.97
Paper	03	9510	680	1533	993	1002.44	122.40
Paper	04	9534	600	1533	993	1002.04	120.59
Paper	05	9557	712	1533	993	1002.14	120.39
Paper	06	9590	636	1533	993	1002.85	120.99
Paper	07	9537	636	1533	993	1001.87	121.26
Paper	08	9599	680	1533	993	1003.62	120.93
Paper	09	9587	600	1533	993	1006.51	121.25
CBT	00	30164	680	1533	993	1005.30	120.02
CBT	01	7934	680	1533	923	947.94	109.42
CBT	02	2810	680	1533	1019	1025.00	118.07
CBT	03	2769	680	1533	1019	1026.45	115.90
CBT	04	2756	712	1533	1019	1025.08	116.77
CBT	05	2771	712	1533	1019	1026.67	115.74
CBT	06	2770	738	1533	1019	1027.15	119.60
CBT	07	2770	738	1533	1019	1026.99	118.11
CBT	08	2812	680	1533	1019	1022.25	113.92
CBT	09	2772	712	1533	1019	1026.69	117.36

Mathematics Grade 5 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	116834	600	1519	976	988.65	118.67
All	01	18006	600	1519	942	959.40	117.25
All	02	12299	644	1519	976	991.68	117.50
All	03	12396	688	1519	984	994.65	117.75
All	04	12338	688	1519	984	994.23	118.45
All	05	12332	644	1519	984	991.86	117.60
All	06	12411	644	1519	984	995.27	118.80
All	07	12424	600	1519	984	994.27	118.39
All	08	12289	644	1519	984	994.27	117.06
All	09	12339	600	1519	984	995.60	119.53
Paper	00	84574	600	1519	976	989.35	119.26
Paper	01	9905	600	1519	968	982.42	120.20
Paper	02	9315	688	1519	976	987.44	118.32
Paper	03	9405	688	1519	976	991.35	118.55
Paper	04	9290	688	1519	976	990.49	119.25
Paper	05	9314	644	1519	976	988.07	119.17
Paper	06	9343	644	1519	976	991.72	119.76
Paper	07	9369	600	1519	976	990.69	118.77
Paper	08	9287	688	1519	976	990.74	117.91
Paper	09	9346	600	1519	976	991.68	121.03
CBT	00	32260	644	1519	976	986.81	117.06
CBT	01	8101	644	1519	906	931.24	107.01
CBT	02	2984	644	1519	993	1004.93	113.89
CBT	03	2991	688	1519	993	1005.03	114.57
CBT	04	3048	720	1519	993	1005.62	115.23
CBT	05	3018	688	1519	1001	1003.56	111.81
CBT	06	3068	688	1519	993	1006.11	115.16
CBT	07	3055	688	1519	993	1005.26	116.52
CBT	08	3002	644	1519	993	1005.19	113.67
CBT	09	2993	720	1519	1001	1007.86	113.83

Mathematics Grade 6 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	116358	600	1524	951	970.91	126.38
All	01	18253	614	1524	916	942.43	123.24
All	02	12265	600	1524	960	976.17	126.53
All	03	12281	659	1524	960	974.88	124.80
All	04	12288	600	1524	960	977.90	126.64
All	05	12262	614	1524	960	976.73	125.83
All	06	12272	600	1524	960	974.62	124.54
All	07	12176	600	1524	960	976.33	127.77
All	08	12258	659	1524	960	976.03	125.95
All	09	12303	600	1524	960	977.04	127.90
Paper	00	77732	600	1524	951	967.81	126.16
Paper	01	9222	614	1524	934	959.39	126.02
Paper	02	8551	600	1524	951	968.62	126.07
Paper	03	8614	659	1524	951	967.44	125.31
Paper	04	8636	600	1524	951	970.61	125.92
Paper	05	8574	614	1524	951	969.95	126.48
Paper	06	8554	600	1524	951	966.84	124.13
Paper	07	8483	600	1524	951	968.96	128.12
Paper	08	8536	659	1524	951	969.43	126.38
Paper	09	8562	600	1524	951	969.66	126.63
CBT	00	38626	614	1524	960	977.16	126.60
CBT	01	9031	614	1524	897	925.11	117.83
CBT	02	3714	614	1524	978	993.56	125.88
CBT	03	3667	692	1524	978	992.34	121.81
CBT	04	3652	718	1524	978	995.14	126.67
CBT	05	3688	692	1524	978	992.49	122.85
CBT	06	3718	659	1524	978	992.52	123.62
CBT	07	3693	718	1524	978	993.27	125.33
CBT	08	3722	692	1524	978	991.16	123.63
CBT	09	3741	659	1524	978	993.93	129.21

Mathematics Grade 7 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	117279	600	1535	943	957.98	119.85
All	01	17690	633	1535	908	932.26	118.09
All	02	12498	600	1535	952	961.10	117.06
All	03	12409	633	1535	943	963.81	120.65
All	04	12495	633	1535	952	963.06	119.72
All	05	12423	633	1535	943	961.41	119.92
All	06	12467	600	1535	952	963.18	119.99
All	07	12475	600	1535	952	963.18	119.09
All	08	12418	600	1535	943	961.92	120.14
All	09	12404	633	1535	952	962.75	120.08
Paper	00	78563	600	1535	943	956.55	120.53
Paper	01	9350	633	1535	926	948.13	121.82
Paper	02	8677	600	1535	943	956.17	118.02
Paper	03	8633	633	1535	943	957.69	119.53
Paper	04	8674	633	1535	943	958.28	120.57
Paper	05	8633	633	1535	943	955.80	120.79
Paper	06	8652	600	1535	943	958.26	120.42
Paper	07	8683	600	1535	943	958.91	120.00
Paper	08	8613	600	1535	943	958.11	121.78
Paper	09	8648	633	1535	943	958.28	121.28
CBT	00	38716	633	1535	943	960.89	118.42
CBT	01	8340	633	1535	888	914.47	111.09
CBT	02	3821	677	1535	960	972.31	114.05
CBT	03	3776	633	1535	960	977.79	122.03
CBT	04	3821	633	1535	960	973.92	117.07
CBT	05	3790	677	1535	960	974.18	116.91
CBT	06	3815	677	1535	960	974.36	118.27
CBT	07	3792	633	1535	960	972.95	116.39
CBT	08	3805	677	1535	960	970.55	115.87
CBT	09	3756	633	1535	960	973.05	116.61

Mathematics Grade 8 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	116468	600	1466	920	940.52	117.70
All	01	17205	609	1466	894	916.53	113.90
All	02	12420	600	1466	929	943.23	117.81
All	03	12438	609	1466	929	944.45	119.37
All	04	12336	600	1466	929	945.76	117.84
All	05	12434	600	1466	929	945.95	118.57
All	06	12431	609	1466	929	945.07	117.86
All	07	12423	609	1466	929	943.30	117.06
All	08	12422	653	1466	929	944.78	117.58
All	09	12359	609	1466	929	944.87	116.64
Paper	00	77275	600	1466	920	939.80	119.08
Paper	01	9281	609	1466	912	930.29	117.44
Paper	02	8494	600	1466	920	940.22	119.96
Paper	03	8521	653	1466	920	940.82	120.96
Paper	04	8465	600	1466	920	940.99	119.80
Paper	05	8520	600	1466	920	942.74	120.46
Paper	06	8525	609	1466	920	941.63	119.51
Paper	07	8512	609	1466	920	939.47	118.46
Paper	08	8509	653	1466	920	942.21	118.28
Paper	09	8448	609	1466	920	940.72	116.43
CBT	00	39193	609	1466	920	941.93	114.90
CBT	01	7924	653	1466	875	900.42	107.38
CBT	02	3926	653	1466	933	949.73	112.76
CBT	03	3917	609	1466	937	952.36	115.43
CBT	04	3871	711	1466	937	956.18	112.74
CBT	05	3914	609	1466	937	952.94	114.04
CBT	06	3906	685	1466	937	952.56	113.80
CBT	07	3911	653	1466	937	951.63	113.50
CBT	08	3913	653	1466	937	950.35	115.85
CBT	09	3911	653	1466	937	953.86	116.59

ELA Grade 3 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	112499	600	1541	1010	1012.03	101.07
All	01	16108	602	1541	979	989.35	102.12
All	02	12072	602	1418	1010	1014.17	100.63
All	03	12128	676	1541	1020	1015.56	102.11
All	04	12012	602	1541	1020	1016.39	100.34
All	05	12063	600	1418	1010	1014.33	101.16
All	06	12112	600	1541	1020	1014.55	99.94
All	07	12022	600	1418	1020	1016.60	100.69
All	08	12002	600	1541	1020	1016.84	98.92
All	09	11980	676	1418	1020	1018.13	99.25
Paper	00	86307	600	1541	1020	1014.61	101.72
Paper	01	9640	602	1541	1010	1012.32	101.37
Paper	02	9595	602	1418	1010	1012.77	102.27
Paper	03	9618	676	1541	1010	1013.53	104.11
Paper	04	9549	602	1541	1020	1015.07	101.06
Paper	05	9600	600	1418	1010	1013.31	102.63
Paper	06	9647	600	1541	1020	1013.62	101.25
Paper	07	9584	600	1418	1020	1016.24	101.97
Paper	08	9563	600	1541	1020	1016.65	99.66
Paper	09	9511	676	1418	1020	1017.99	100.91
CBT	00	26192	720	1541	1000	1003.53	98.43
CBT	01	6468	720	1345	935	955.12	93.26
CBT	02	2477	753	1345	1020	1019.61	93.79
CBT	03	2510	753	1541	1020	1023.34	93.68
CBT	04	2463	720	1345	1020	1021.50	97.31
CBT	05	2463	780	1418	1020	1018.27	95.11
CBT	06	2465	753	1345	1020	1018.19	94.54
CBT	07	2438	753	1418	1010	1018.04	95.50
CBT	08	2439	780	1418	1020	1017.60	95.97
CBT	09	2469	753	1418	1020	1018.64	92.58

ELA Grade 4 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	116411	600	1602	1004	1003.23	108.17
All	01	17119	600	1479	965	974.82	109.52
All	02	12394	665	1479	1012	1007.41	106.08
All	03	12389	600	1479	1012	1010.54	108.26
All	04	12417	621	1479	1012	1008.83	105.79
All	05	12414	600	1479	1004	1004.88	107.95
All	06	12397	621	1479	1004	1006.53	106.19
All	07	12408	621	1479	1012	1007.75	108.13
All	08	12423	621	1479	1012	1010.13	107.30
All	09	12450	665	1602	1012	1008.93	107.55
Paper	00	87303	600	1602	1004	1005.57	109.11
Paper	01	9735	600	1479	1004	1002.69	108.72
Paper	02	9682	665	1479	1004	1005.76	108.45
Paper	03	9690	600	1479	1012	1008.25	109.98
Paper	04	9677	621	1479	1012	1006.79	107.53
Paper	05	9694	600	1479	1004	1002.52	110.05
Paper	06	9709	621	1479	1004	1004.06	108.26
Paper	07	9676	621	1479	1012	1005.50	110.02
Paper	08	9707	621	1479	1012	1007.28	108.99
Paper	09	9733	665	1602	1012	1007.25	109.83
CBT	00	29108	665	1479	997	996.21	104.97
CBT	01	7384	665	1300	917	938.07	99.24
CBT	02	2712	743	1405	1012	1013.29	96.95
CBT	03	2699	722	1479	1020	1018.73	101.42
CBT	04	2740	743	1405	1020	1016.05	99.04
CBT	05	2720	722	1360	1012	1013.31	99.64
CBT	06	2688	743	1405	1012	1015.43	97.82
CBT	07	2732	697	1405	1020	1015.72	100.71
CBT	08	2716	743	1479	1024	1020.32	100.41
CBT	09	2717	722	1360	1020	1014.95	98.74

ELA Grade 5 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	116698	600	1603	1001	1001.91	109.97
All	01	17196	634	1478	969	974.02	113.88
All	02	12472	600	1603	1009	1003.94	108.48
All	03	12469	634	1603	1009	1006.33	105.22
All	04	12487	600	1603	1009	1009.01	110.08
All	05	12409	600	1478	1009	1006.25	108.17
All	06	12445	667	1478	1009	1007.96	109.53
All	07	12416	667	1603	1009	1005.74	109.48
All	08	12417	634	1603	1009	1006.93	108.43
All	09	12387	634	1603	1009	1007.69	108.93
Paper	00	85047	600	1603	1009	1003.31	109.33
Paper	01	9498	634	1478	1001	1002.30	109.07
Paper	02	9459	600	1603	1001	1000.74	109.73
Paper	03	9468	634	1603	1009	1003.51	106.52
Paper	04	9505	600	1603	1009	1004.55	111.24
Paper	05	9415	600	1478	1009	1003.52	109.08
Paper	06	9461	667	1478	1009	1004.80	110.47
Paper	07	9426	667	1603	1001	1001.81	109.78
Paper	08	9431	634	1603	1009	1003.73	108.97
Paper	09	9384	634	1603	1009	1004.79	108.93
CBT	00	31651	634	1603	1001	998.16	111.60
CBT	01	7698	667	1402	919	939.12	109.95
CBT	02	3013	716	1478	1017	1013.96	103.79
CBT	03	3001	667	1402	1017	1015.25	100.50
CBT	04	2982	716	1603	1025	1023.23	105.06
CBT	05	2994	634	1478	1017	1014.84	104.79
CBT	06	2984	716	1478	1017	1018.00	105.89
CBT	07	2990	716	1478	1025	1018.12	107.59
CBT	08	2986	736	1478	1017	1017.04	106.07
CBT	09	3003	694	1603	1017	1016.74	108.43

ELA Grade 6 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	116426	600	1583	1012	1009.21	100.04
All	01	17623	658	1461	980	986.72	101.10
All	02	12360	658	1390	1012	1010.27	98.43
All	03	12349	690	1461	1020	1014.43	100.20
All	04	12378	600	1390	1012	1012.94	98.33
All	05	12347	658	1461	1012	1012.17	98.36
All	06	12382	658	1461	1012	1015.23	101.37
All	07	12282	690	1461	1012	1012.51	98.92
All	08	12399	658	1583	1012	1014.71	97.39
All	09	12306	658	1583	1012	1013.44	101.40
Paper	00	77351	600	1583	1012	1009.84	101.30
Paper	01	8646	658	1461	1004	1008.57	101.02
Paper	02	8593	658	1390	1004	1006.89	100.87
Paper	03	8586	690	1461	1012	1010.88	102.35
Paper	04	8588	600	1346	1012	1009.48	100.28
Paper	05	8588	658	1461	1012	1009.37	100.52
Paper	06	8596	658	1461	1012	1012.22	102.92
Paper	07	8562	690	1461	1004	1009.29	100.36
Paper	08	8615	658	1583	1012	1011.70	99.39
Paper	09	8577	658	1461	1012	1010.16	103.79
CBT	00	39075	658	1583	1004	1007.95	97.49
CBT	01	8977	690	1390	948	965.67	96.61
CBT	02	3767	755	1390	1020	1018.00	92.14
CBT	03	3763	736	1346	1020	1022.53	94.62
CBT	04	3790	736	1390	1020	1020.79	93.27
CBT	05	3759	658	1346	1020	1018.57	92.91
CBT	06	3786	690	1461	1020	1022.06	97.41
CBT	07	3720	755	1390	1020	1019.92	95.09
CBT	08	3784	715	1346	1020	1021.56	92.29
CBT	09	3729	715	1583	1020	1021.00	95.24

ELA Grade 7 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	117431	600	1589	1010	1011.97	110.18
All	01	17166	613	1589	979	990.58	113.42
All	02	12514	689	1589	1017	1016.02	108.11
All	03	12545	715	1589	1010	1013.03	108.59
All	04	12519	715	1465	1010	1014.92	108.47
All	05	12523	689	1589	1010	1015.38	109.11
All	06	12555	689	1465	1017	1016.29	109.76
All	07	12546	657	1589	1017	1018.54	110.39
All	08	12543	600	1465	1010	1015.12	109.04
All	09	12520	600	1589	1017	1015.78	109.99
Paper	00	76968	600	1589	1010	1013.56	110.42
Paper	01	8618	613	1589	1017	1015.70	111.81
Paper	02	8544	689	1589	1010	1013.23	109.21
Paper	03	8544	715	1465	1010	1011.60	109.90
Paper	04	8529	715	1465	1010	1012.90	109.57
Paper	05	8520	689	1589	1010	1012.36	110.23
Paper	06	8558	689	1465	1010	1014.09	110.18
Paper	07	8546	657	1589	1017	1016.03	111.10
Paper	08	8567	600	1465	1010	1011.92	109.87
Paper	09	8542	600	1589	1017	1014.20	111.76
CBT	00	40463	689	1589	1002	1008.96	109.66
CBT	01	8548	689	1589	941	965.25	109.32
CBT	02	3970	736	1589	1017	1022.03	105.45
CBT	03	4001	755	1589	1017	1016.08	105.69
CBT	04	3990	736	1465	1017	1019.23	105.94
CBT	05	4003	715	1589	1017	1021.80	106.40
CBT	06	3997	715	1465	1017	1021.01	108.71
CBT	07	4000	689	1391	1025	1023.92	108.67
CBT	08	3976	689	1391	1017	1022.03	106.90
CBT	09	3978	689	1589	1017	1019.18	106.02

ELA Grade 8 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	116655	600	1474	1005	1004.75	109.41
All	01	16642	600	1398	980	982.23	114.60
All	02	12433	668	1474	1005	1005.08	106.64
All	03	12535	668	1474	1013	1007.82	107.53
All	04	12519	638	1474	1013	1010.42	108.67
All	05	12489	693	1474	1013	1008.72	107.94
All	06	12466	668	1474	1013	1010.52	109.06
All	07	12509	638	1474	1013	1007.94	108.69
All	08	12555	638	1474	1005	1006.29	107.21
All	09	12507	600	1474	1013	1011.19	108.59
Paper	00	75628	600	1474	1013	1006.53	108.64
Paper	01	8532	600	1398	1005	1005.53	110.19
Paper	02	8365	668	1474	1005	1004.18	107.35
Paper	03	8419	668	1474	1013	1006.15	108.38
Paper	04	8410	638	1474	1013	1007.91	109.10
Paper	05	8368	693	1474	1013	1007.26	108.12
Paper	06	8362	668	1474	1013	1007.87	109.88
Paper	07	8397	638	1398	1005	1006.01	109.05
Paper	08	8425	638	1474	1005	1004.52	107.25
Paper	09	8350	600	1474	1013	1009.36	108.26
CBT	00	41027	638	1474	1005	1001.47	110.73
CBT	01	8110	638	1398	946	957.71	114.04
CBT	02	4068	713	1474	1005	1006.92	105.16
CBT	03	4116	693	1474	1013	1011.23	105.69
CBT	04	4109	693	1398	1022	1015.56	107.58
CBT	05	4121	713	1398	1013	1011.70	107.52
CBT	06	4104	693	1398	1022	1015.91	107.16
CBT	07	4112	693	1474	1013	1011.87	107.85
CBT	08	4130	713	1398	1013	1009.89	107.02
CBT	09	4157	693	1398	1022	1014.86	109.15

Science Grade 4 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	116630	1050	2302	1418	1417.56	174.00
All	01	15051	1050	2085	1354	1367.32	172.90
All	02	9266	1050	2302	1418	1424.18	173.10
All	03	9180	1050	2302	1418	1423.67	170.98
All	04	9220	1050	2302	1435	1426.34	173.70
All	05	9235	1050	2302	1435	1424.79	173.29
All	06	9222	1050	2302	1418	1424.15	174.49
All	07	9262	1050	2302	1435	1425.23	174.66
All	08	9251	1050	2302	1418	1424.55	172.36
All	09	9223	1050	2302	1418	1425.32	172.23
All	10	9217	1050	2302	1418	1426.12	171.71
All	11	9294	1050	2302	1435	1426.19	173.42
All	12	9209	1050	2302	1435	1424.49	172.14
Paper	00	84332	1050	2302	1418	1415.92	174.64
Paper	01	7508	1050	2085	1402	1399.29	176.21
Paper	02	7016	1050	2302	1418	1416.86	175.51
Paper	03	6925	1050	2302	1418	1416.23	172.09
Paper	04	6977	1050	2302	1418	1418.20	174.92
Paper	05	6971	1050	2302	1418	1418.29	174.74
Paper	06	6963	1050	2302	1418	1415.45	176.01
Paper	07	7015	1050	2302	1418	1417.28	175.41
Paper	08	7022	1050	2302	1418	1418.01	173.72
Paper	09	6965	1050	2302	1418	1417.70	173.76
Paper	10	6963	1050	2302	1418	1419.97	173.04
Paper	11	7016	1050	2085	1418	1418.99	175.61
Paper	12	6991	1050	2302	1418	1415.94	173.46
CBT	00	32298	1050	2302	1418	1421.85	172.24
CBT	01	7543	1050	2085	1321	1335.50	163.44
CBT	02	2250	1050	2085	1452	1447.02	163.25
CBT	03	2255	1050	2085	1452	1446.53	165.46
CBT	04	2243	1050	2085	1452	1451.65	167.33
CBT	05	2264	1050	2302	1435	1444.79	167.16
CBT	06	2259	1050	2085	1452	1450.97	166.89
CBT	07	2247	1050	2302	1452	1450.04	169.92
CBT	08	2229	1050	2085	1452	1445.14	166.36
CBT	09	2258	1050	2302	1452	1448.83	165.22
CBT	10	2254	1050	2302	1452	1445.13	166.13
CBT	11	2278	1050	2302	1452	1448.34	164.55
CBT	12	2218	1050	2302	1452	1451.44	165.03

Science Grade 8 Scaled Score Summary Statistics

Mode	Form	N	Min	Max	Median	Mean	STD
All	00	116048	925	2265	1298	1306.67	204.77
All	01	14358	925	2265	1230	1254.06	204.26
All	02	9213	925	2265	1298	1310.19	203.85
All	03	9276	925	2265	1315	1316.34	204.44
All	04	9221	925	2265	1298	1313.88	204.13
All	05	9234	925	2265	1315	1310.24	204.47
All	06	9188	925	2265	1315	1313.76	205.30
All	07	9174	925	2265	1315	1313.91	204.54
All	08	9288	925	2265	1315	1316.64	200.77
All	09	9256	925	2265	1315	1313.39	204.53
All	10	9266	925	2265	1315	1317.44	203.42
All	11	9264	925	2265	1315	1315.70	201.03
All	12	9310	925	2265	1315	1313.59	204.65
Paper	00	71616	925	2265	1298	1300.28	205.47
Paper	01	6657	925	2265	1264	1281.42	208.02
Paper	02	5891	925	2265	1281	1294.88	203.86
Paper	03	5939	925	2265	1298	1304.60	206.16
Paper	04	5883	925	2265	1298	1301.82	204.78
Paper	05	5877	925	2265	1298	1298.15	204.64
Paper	06	5902	925	2265	1298	1300.21	206.03
Paper	07	5855	925	2265	1298	1302.26	206.82
Paper	08	5955	925	2265	1298	1304.13	202.68
Paper	09	5909	925	2265	1298	1303.42	206.66
Paper	10	5904	925	2265	1298	1306.11	204.66
Paper	11	5896	925	2265	1298	1305.69	202.70
Paper	12	5948	925	2265	1298	1303.02	206.85
CBT	00	44432	925	2265	1315	1316.98	203.23
CBT	01	7701	925	2265	1196	1230.41	197.92
CBT	02	3322	925	2265	1332	1337.34	201.00
CBT	03	3337	925	2032	1349	1337.24	199.65
CBT	04	3338	925	2265	1332	1335.14	201.23
CBT	05	3357	925	2265	1332	1331.41	202.43
CBT	06	3286	925	2265	1332	1338.11	201.70
CBT	07	3319	925	2265	1332	1334.48	198.78
CBT	08	3333	925	2265	1332	1339.00	195.33
CBT	09	3347	925	2265	1332	1330.98	199.49
CBT	10	3362	925	2265	1332	1337.34	199.69
CBT	11	3368	925	2032	1332	1333.23	196.86
CBT	12	3362	925	2265	1332	1332.28	199.34

APPENDIX I: DEMOGRAPHIC CHARACTERISTICS OF STUDENTS

Demographic Characteristics of Students Taking the 2024 PSSA: Mathematics

Demographic or Educational Characteristic	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Female (Number)	42,693	13,202	55,895	42,689	14,686	57,375	41,526	15,727	57,253	38,018	18,852	56,870	38,784	18,683	57,467	37,493	18,795	56,288
Female (Percent)	49.7	48.9	49.5	49.2	48.7	49	49.1	48.7	49	48.8	48.8	48.8	49.3	48.2	48.9	48.4	47.9	48.2
Male (Number)	43,230	13,813	57,043	44,108	15,499	59,607	43,134	16,561	59,695	39,866	19,809	59,675	39,963	20,105	60,068	39,952	20,455	60,407
Male (Percent)	50.3	51.1	50.5	50.8	51.3	51	50.9	51.3	51	51.2	51.2	51.2	50.7	51.8	51.1	51.6	52.1	51.8
American Indian/Alaskan Native (not Hispanic) (Number)	133	69	202	122	67	189	112	71	183	116	78	194	115	83	198	120	76	196
American Indian/Alaskan Native (not Hispanic) (Percent)	.2	.3	.2	.1	.2	.2	.1	.2	.2	.1	.2	.2	.1	.2	.2	.2	.2	.2
Asian (not Hispanic) (Number)	3,861	1,556	5,417	3,983	1,740	5,723	4,063	1,935	5,998	3,399	2,381	5,780	3,371	2,259	5,630	3,294	2,246	5,540
Asian (not Hispanic) (Percent)	4.5	5.8	4.8	4.6	5.8	4.9	4.8	6	5.1	4.4	6.2	5	4.3	5.8	4.8	4.3	5.7	4.7
Black or African American (not Hispanic) (Number)	11,848	3,307	15,155	12,424	3,852	16,276	12,629	3,947	16,576	12,032	4,136	16,168	12,024	4,617	16,641	11,665	4,723	16,388
Black or African American (not Hispanic) (Percent)	13.8	12.2	13.4	14.3	12.8	13.9	14.9	12.2	14.2	15.4	10.7	13.9	15.3	11.9	14.2	15.1	12	14
Hispanic (any race) (Number)	12,709	3,853	16,562	12,869	3,967	16,836	12,654	4,174	16,828	12,169	4,737	16,906	11,951	4,787	16,738	11,880	4,816	16,696
Hispanic (any race) (Percent)	14.8	14.3	14.7	14.8	13.1	14.4	14.9	12.9	14.4	15.6	12.3	14.5	15.2	12.3	14.2	15.3	12.3	14.3
Multi-Racial (not Hispanic) (Number)	4,902	1,591	6,493	4,726	1,688	6,414	4,573	1,806	6,379	4,052	1,992	6,044	4,002	1,961	5,963	3,800	1,951	5,751
Multi-Racial (not Hispanic) (Percent)	5.7	5.9	5.7	5.4	5.6	5.5	5.4	5.6	5.5	5.2	5.2	5.2	5.1	5.1	5.1	4.9	5	4.9
White (not Hispanic) (Number)	52,397	16,621	69,018	52,614	18,842	71,456	50,551	20,334	70,885	46,054	25,293	71,347	47,219	25,052	72,271	46,609	25,396	72,005
White (not Hispanic) (Percent)	61	61.5	61.1	60.6	62.4	61.1	59.7	63	60.6	59.1	65.4	61.2	60	64.6	61.5	60.2	64.7	61.7
Native Hawaiian or Other Pacific Islander (not Hispanic) (Number)	73	18	91	59	29	88	78	21	99	62	44	106	65	29	94	77	42	119
Native Hawaiian or Other Pacific Islander (not Hispanic) (Percent)	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
IEP (not gifted) (Number)	16,961	5,845	22,806	17,828	6,789	24,617	16,530	7,115	23,645	14,569	8,159	22,728	14,259	8,136	22,395	14,047	7,961	22,008
IEP (not gifted) (Percent)	19.7	21.6	20.2	20.5	22.5	21	19.5	22	20.2	18.7	21.1	19.5	18.1	21	19.1	18.1	20.3	18.9

Demographic or Educational Characteristic	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Student exited IEP in last 2 years (Number)	1,121	363	1,484	1,154	361	1,515	1,184	434	1,618	1,004	493	1,497	833	412	1,245	903	449	1,352
Student exited IEP in last 2 years (Percent)	1.3	1.3	1.3	1.3	1.2	1.3	1.4	1.3	1.4	1.3	1.3	1.3	1.1	1.1	1.1	1.2	1.1	1.2
Title I (Number)	50,052	14,796	64,848	50,361	15,319	65,680	46,930	14,465	61,395	35,621	13,698	49,319	30,570	10,872	41,442	28,315	11,033	39,348
Title I (Percent)	58.3	54.8	57.4	58	50.8	56.1	55.4	44.8	52.5	45.7	35.4	42.3	38.8	28	35.3	36.6	28.1	33.7
Title III served (Number)	5,332	1,612	6,944	4,903	1,496	6,399	4,294	1,280	5,574	3,710	1,214	4,924	3,824	1,147	4,971	3,940	1,217	5,157
Title III served (Percent)	6.2	6	6.1	5.6	5	5.5	5.1	4	4.8	4.8	3.1	4.2	4.9	3	4.2	5.1	3.1	4.4
Title III not served (Number)	10,418	2,397	12,815	9,950	2,930	12,880	10,159	3,099	13,258	8,879	4,114	12,993	9,237	4,243	13,480	8,788	4,545	13,333
Title III not served (Percent)	12.1	8.9	11.3	11.5	9.7	11	12	9.6	11.3	11.4	10.6	11.1	11.7	10.9	11.5	11.3	11.6	11.4
Migrant student (Number)	189	45	234	166	34	200	168	40	208	166	51	217	137	39	176	158	36	194
Migrant student (Percent)	.2	.2	.2	.2	.1	.2	.2	.1	.2	.2	.1	.2	.2	.1	.1	.2	.1	.2
EL enrolled first year (Number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EL enrolled first year (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EL enrolled not first year (Number)	5,761	1,871	7,632	5,249	1,649	6,898	4,584	1,449	6,033	3,954	1,378	5,332	4,069	1,333	5,402	4,123	1,393	5,516
EL enrolled not first year (Percent)	6.7	6.9	6.8	6	5.5	5.9	5.4	4.5	5.2	5.1	3.6	4.6	5.2	3.4	4.6	5.3	3.5	4.7
Exited ESL/bilingual program and in first year of monitoring (Number)	210	76	286	361	154	515	953	419	1,372	638	349	987	195	95	290	210	128	338
Exited ESL/bilingual program and in first year of monitoring (Percent)	.2	.3	.3	.4	.5	.4	1.1	1.3	1.2	.8	.9	.8	.2	.2	.2	.3	.3	.3
Exited ESL/bilingual program and in 2nd year of monitoring (Number)	94	32	126	171	71	242	305	120	425	709	416	1,125	694	371	1,065	247	113	360
Exited ESL/bilingual program and in 2nd year of monitoring (Percent)	.1	.1	.1	.2	.2	.2	.4	.4	.4	.9	1.1	1	.9	1	.9	.3	.3	.3
Former EL no longer monitored (Number)	3	0	3	9	16	25	77	42	119	135	100	235	269	159	428	502	368	870
Former EL no longer monitored (Percent)	0	0	0	0	.1	0	.1	.1	.1	.2	.3	.2	.3	.4	.4	.6	.9	.7
LIFE first year (Number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIFE first year (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIFE not first year (Number)	16	5	21	25	8	33	36	13	49	34	7	41	38	14	52	60	11	71
LIFE not first year (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.1	0	.1

Demographic or Educational Characteristic	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Former EL exited and in 3rd year of monitoring (Number)	58	25	83	57	30	87	140	60	200	166	140	306	405	236	641	320	174	494
Former EL exited and in 3rd year of monitoring (Percent)	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.4	.3	.5	.6	.5	.4	.4	.4
Former EL exited and in 4th year of monitoring (Number)	9	7	16	45	35	80	56	36	92	185	83	268	257	134	391	608	334	942
Former EL exited and in 4th year of monitoring (Percent)	0	0	0	.1	.1	.1	.1	.1	.1	.2	.2	.2	.3	.3	.3	.8	.9	.8
Economically disadvantaged (Number)	45,338	12,976	58,314	46,020	14,542	60,562	44,891	15,274	60,165	41,101	17,952	59,053	40,689	18,199	58,888	39,645	18,052	57,697
Economically disadvantaged (Percent)	52.8	48	51.6	53	48.2	51.8	53	47.3	51.4	52.8	46.4	50.7	51.7	46.9	50.1	51.2	46	49.4
Historically Underperforming Subgroup (Number)	52,616	15,700	68,316	53,339	17,499	70,838	51,377	18,233	69,610	46,628	21,376	68,004	46,217	21,456	67,673	45,080	21,327	66,407
Historically Underperforming Subgroup (Percent)	61.2	58.1	60.5	61.5	58	60.6	60.7	56.5	59.5	59.9	55.3	58.3	58.7	55.3	57.6	58.2	54.3	56.9
Enrollment in school of residence after Oct 1 (Number)	1,506	473	1,979	1,606	528	2,134	1,471	501	1,972	1,418	673	2,091	1,546	662	2,208	1,541	701	2,242
Enrollment in school of residence after Oct 1 (Percent)	1.8	1.8	1.8	1.9	1.7	1.8	1.7	1.6	1.7	1.8	1.7	1.8	2	1.7	1.9	2	1.8	1.9
Enrollment in district of residence after Oct 1 (Number)	1,023	315	1,338	1,076	351	1,427	956	361	1,317	937	497	1,434	998	514	1,512	997	539	1,536
Enrollment in district of residence after Oct 1 (Percent)	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.2	1.3	1.2	1.3	1.3	1.3	1.3	1.4	1.3
Enrollment as PA resident after Oct 1 (Number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enrollment as PA resident after Oct 1 (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enrollment in school of residence after previous Oct 1 but on/before current Oct 1 (Number)	18,818	4,236	23,054	17,819	5,438	23,257	22,154	7,862	30,016	31,272	14,196	45,468	25,392	11,172	36,564	13,757	5,007	18,764
Enrollment in school of residence after previous Oct 1 but on/before current Oct 1 (Percent)	21.9	15.7	20.4	20.5	18	19.9	26.2	24.3	25.7	40.2	36.7	39	32.2	28.8	31.1	17.8	12.8	16.1

Demographic or Educational Characteristic	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Enrollment in district of residence after previous Oct 1 but on/before current Oct 1 (Number)	6,786	2,327	9,113	6,347	2,236	8,583	6,280	2,320	8,600	6,603	3,003	9,606	6,166	2,749	8,915	5,442	2,633	8,075
Enrollment in district of residence after previous Oct 1 but on/before current Oct 1 (Percent)	7.9	8.6	8.1	7.3	7.4	7.3	7.4	7.2	7.4	8.5	7.8	8.2	7.8	7.1	7.6	7	6.7	6.9
Court/agency placed (Number)	7	0	7	10	3	13	21	2	23	19	4	23	39	8	47	78	14	92
Court/agency placed (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.1	0	.1
Military family (Number)	529	167	696	586	173	759	534	162	696	495	251	746	457	240	697	438	207	645
Military family (Percent)	.6	.6	.6	.7	.6	.6	.6	.5	.6	.6	.6	.6	.6	.6	.6	.6	.5	.6
Homeless (Number)	1,040	285	1,325	1,105	335	1,440	1,087	336	1,423	979	402	1,381	916	436	1,352	946	378	1,324
Homeless (Percent)	1.2	1.1	1.2	1.3	1.1	1.2	1.3	1	1.2	1.3	1	1.2	1.2	1.1	1.2	1.2	1	1.1
Foster (Number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Foster (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Students with scores used in state summaries (Number)	85,923	27,015	112,938	86,797	30,185	116,982	84,660	32,288	116,948	77,884	38,661	116,545	78,747	38,788	117,535	77,445	39,250	116,695

Demographic Characteristics of Students Taking the 2024 PSSA: English Language Arts

Demographic or Educational Characteristic	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Female (Number)	43,007	12,807	55,814	43,066	14,195	57,261	41,826	15,396	57,222	37,886	19,062	56,948	38,005	19,551	57,556	36,813	19,678	56,491
Female (Percent)	49.7	48.8	49.5	49.2	48.7	49.1	49.1	48.6	48.9	48.8	48.7	48.8	49.2	48.2	48.9	48.5	47.9	48.3
Male (Number)	43,515	13,423	56,938	44,501	14,937	59,438	43,424	16,285	59,709	39,691	20,067	59,758	39,214	20,996	60,210	39,085	21,434	60,519
Male (Percent)	50.3	51.2	50.5	50.8	51.3	50.9	50.9	51.4	51.1	51.2	51.3	51.2	50.8	51.8	51.1	51.5	52.1	51.7
American Indian/Alaskan Native (not Hispanic) (Number)	136	67	203	123	66	189	114	69	183	116	77	193	113	83	196	121	76	197
American Indian/Alaskan Native (not Hispanic) (Percent)	.2	.3	.2	.1	.2	.2	.1	.2	.2	.1	.2	.2	.1	.2	.2	.2	.2	.2
Asian (not Hispanic) (Number)	3,952	1,463	5,415	4,059	1,639	5,698	4,150	1,837	5,987	3,426	2,356	5,782	3,292	2,335	5,627	3,223	2,321	5,544
Asian (not Hispanic) (Percent)	4.6	5.6	4.8	4.6	5.6	4.9	4.9	5.8	5.1	4.4	6	5	4.3	5.8	4.8	4.2	5.6	4.7
Black or African American (not Hispanic) (Number)	11,847	3,227	15,074	12,492	3,704	16,196	12,721	3,860	16,581	12,101	4,134	16,235	12,125	4,567	16,692	11,763	4,677	16,440
Black or African American (not Hispanic) (Percent)	13.7	12.3	13.4	14.3	12.7	13.9	14.9	12.2	14.2	15.6	10.6	13.9	15.7	11.3	14.2	15.5	11.4	14.1
Hispanic (any race) (Number)	12,703	3,819	16,522	12,864	3,923	16,787	12,600	4,215	16,815	12,076	4,841	16,917	11,758	5,007	16,765	11,690	5,047	16,737
Hispanic (any race) (Percent)	14.7	14.6	14.7	14.7	13.5	14.4	14.8	13.3	14.4	15.6	12.4	14.5	15.2	12.3	14.2	15.4	12.3	14.3
Multi-Racial (not Hispanic) (Number)	4,917	1,568	6,485	4,742	1,649	6,391	4,590	1,793	6,383	4,052	1,999	6,051	3,972	2,008	5,980	3,766	2,019	5,785
Multi-Racial (not Hispanic) (Percent)	5.7	6	5.8	5.4	5.7	5.5	5.4	5.7	5.5	5.2	5.1	5.2	5.1	5	5.1	5	4.9	4.9
White (not Hispanic) (Number)	52,893	16,069	68,962	53,227	18,123	71,350	50,996	19,888	70,884	45,746	25,675	71,421	45,895	26,519	72,414	45,257	26,931	72,188
White (not Hispanic) (Percent)	61.1	61.3	61.2	60.8	62.2	61.1	59.8	62.8	60.6	59	65.6	61.2	59.4	65.4	61.5	59.6	65.5	61.7
Native Hawaiian or Other Pacific Islander (not Hispanic) (Number)	74	17	91	60	28	88	79	19	98	60	47	107	64	28	92	78	41	119
Native Hawaiian or Other Pacific Islander (not Hispanic) (Percent)	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
IEP (not gifted) (Number)	17,148	5,663	22,811	18,085	6,551	24,636	16,713	6,987	23,700	14,600	8,230	22,830	14,145	8,397	22,542	13,965	8,231	22,196
IEP (not gifted) (Percent)	19.8	21.6	20.2	20.7	22.5	21.1	19.6	22.1	20.3	18.8	21	19.6	18.3	20.7	19.1	18.4	20	19
Student exited IEP in last 2 years (Number)	1,127	355	1,482	1,149	360	1,509	1,180	438	1,618	998	501	1,499	829	421	1,250	894	464	1,358
Student exited IEP in last 2 years (Percent)	1.3	1.4	1.3	1.3	1.2	1.3	1.4	1.4	1.4	1.3	1.3	1.3	1.1	1	1.1	1.2	1.1	1.2

Demographic or Educational Characteristic	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Title I (Number)	50,126	14,585	64,711	50,351	15,150	65,501	46,770	14,605	61,375	35,341	14,053	49,394	30,866	10,679	41,545	28,599	10,828	39,427
Title I (Percent)	57.9	55.6	57.4	57.5	52	56.1	54.9	46.1	52.5	45.6	35.9	42.3	40	26.3	35.3	37.7	26.3	33.7
Title III served (Number)	5,349	1,567	6,916	4,909	1,460	6,369	4,278	1,284	5,562	3,639	1,275	4,914	3,699	1,248	4,947	3,849	1,317	5,166
Title III served (Percent)	6.2	6	6.1	5.6	5	5.5	5	4.1	4.8	4.7	3.3	4.2	4.8	3.1	4.2	5.1	3.2	4.4
Title III not served (Number)	10,351	2,431	12,782	9,858	2,987	12,845	10,081	3,174	13,255	8,524	4,492	13,016	8,877	4,616	13,493	8,640	4,730	13,370
Title III not served (Percent)	12	9.3	11.3	11.3	10.3	11	11.8	10	11.3	11	11.5	11.2	11.5	11.4	11.5	11.4	11.5	11.4
Migrant student (Number)	172	58	230	160	38	198	161	47	208	151	65	216	121	53	174	145	48	193
Migrant student (Percent)	.2	.2	.2	.2	.1	.2	.2	.1	.2	.2	.2	.2	.2	.1	.1	.2	.1	.2
EL enrolled first year (Number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EL enrolled first year (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EL enrolled not first year (Number)	5,758	1,842	7,600	5,251	1,617	6,868	4,556	1,470	6,026	3,857	1,464	5,321	3,928	1,452	5,380	4,019	1,507	5,526
EL enrolled not first year (Percent)	6.7	7	6.7	6	5.6	5.9	5.3	4.6	5.2	5	3.7	4.6	5.1	3.6	4.6	5.3	3.7	4.7
Exited ESL/bilingual program and in first year of monitoring (Number)	210	75	285	368	146	514	980	389	1,369	647	339	986	196	97	293	209	128	337
Exited ESL/bilingual program and in first year of monitoring (Percent)	.2	.3	.3	.4	.5	.4	1.1	1.2	1.2	.8	.9	.8	.3	.2	.2	.3	.3	.3
Exited ESL/bilingual program and in 2nd year of monitoring (Number)	95	29	124	178	64	242	316	108	424	720	405	1,125	687	375	1,062	245	115	360
Exited ESL/bilingual program and in 2nd year of monitoring (Percent)	.1	.1	.1	.2	.2	.2	.4	.3	.4	.9	1	1	.9	.9	.9	.3	.3	.3
Former EL no longer monitored (Number)	2	0	2	9	16	25	76	43	119	136	100	236	261	166	427	493	379	872
Former EL no longer monitored (Percent)	0	0	0	0	.1	0	.1	.1	.1	.2	.3	.2	.3	.4	.4	.6	.9	.7
LIFE first year (Number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIFE first year (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIFE not first year (Number)	15	6	21	22	9	31	32	15	47	34	10	44	32	17	49	51	18	69
LIFE not first year (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.1	0	.1
Former EL exited and in 3rd year of monitoring (Number)	58	25	83	58	29	87	143	57	200	169	135	304	403	237	640	317	179	496
Former EL exited and in 3rd year of monitoring (Percent)	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.3	.3	.5	.6	.5	.4	.4	.4

Demographic or Educational Characteristic	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Former EL exited and in 4th year of monitoring (Number)	9	7	16	47	33	80	59	33	92	187	83	270	263	130	393	622	324	946
Former EL exited and in 4th year of monitoring (Percent)	0	0	0	.1	.1	.1	.1	.1	.1	.2	.2	.2	.3	.3	.3	.8	.8	.8
Economically disadvantaged (Number)	45,552	12,623	58,175	46,308	14,077	60,385	45,136	15,039	60,175	41,150	18,055	59,205	40,511	18,563	59,074	39,434	18,470	57,904
Economically disadvantaged (Percent)	52.6	48.1	51.6	52.9	48.3	51.7	52.9	47.5	51.5	53	46.1	50.7	52.5	45.8	50.2	52	44.9	49.5
Historically Underperforming Subgroup (Number)	52,881	15,280	68,161	53,691	16,953	70,644	51,648	17,977	69,625	46,584	21,580	68,164	45,835	22,042	67,877	44,698	21,958	66,656
Historically Underperforming Subgroup (Percent)	61.1	58.3	60.5	61.3	58.2	60.5	60.6	56.7	59.5	60	55.2	58.4	59.4	54.4	57.6	58.9	53.4	57
Enrollment in school of residence after Oct 1 (Number)	1,482	470	1,952	1,594	532	2,126	1,448	502	1,950	1,390	708	2,098	1,528	685	2,213	1,523	723	2,246
Enrollment in school of residence after Oct 1 (Percent)	1.7	1.8	1.7	1.8	1.8	1.8	1.7	1.6	1.7	1.8	1.8	1.8	2	1.7	1.9	2	1.8	1.9
Enrollment in district of residence after Oct 1 (Number)	1,009	309	1,318	1,059	354	1,413	943	358	1,301	907	523	1,430	985	519	1,504	996	547	1,543
Enrollment in district of residence after Oct 1 (Percent)	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.2	1.3	1.2	1.3	1.3	1.3	1.3	1.3	1.3
Enrollment as PA resident after Oct 1 (Number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enrollment as PA resident after Oct 1 (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enrollment in school of residence after previous Oct 1 but on/before current Oct 1 (Number)	19,048	3,931	22,979	18,181	5,001	23,182	21,989	8,026	30,015	31,225	14,323	45,548	24,327	12,258	36,585	13,706	5,076	18,782
Enrollment in school of residence after previous Oct 1 but on/before current Oct 1 (Percent)	22	15	20.4	20.8	17.2	19.9	25.8	25.3	25.7	40.3	36.6	39	31.5	30.2	31.1	18.1	12.3	16.1
Enrollment in district of residence after previous Oct 1 but on/before current Oct 1 (Number)	7,047	2,038	9,085	6,409	2,164	8,573	6,284	2,299	8,583	6,546	3,061	9,607	6,076	2,838	8,914	5,349	2,734	8,083

Demographic or Educational Characteristic	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Enrollment in district of residence after previous Oct 1 but on/before current Oct 1 (Percent)	8.1	7.8	8.1	7.3	7.4	7.3	7.4	7.3	7.3	8.4	7.8	8.2	7.9	7	7.6	7	6.7	6.9
Court/agency placed (Number)	13	0	13	15	3	18	20	2	22	26	4	30	37	7	44	85	10	95
Court/agency placed (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.1	0	.1
Military family (Number)	537	161	698	594	163	757	539	159	698	497	251	748	452	244	696	438	208	646
Military family (Percent)	.6	.6	.6	.7	.6	.6	.6	.5	.6	.6	.6	.6	.6	.6	.6	.6	.5	.6
Homeless (Number)	1,045	274	1,319	1,097	330	1,427	1,090	336	1,426	963	420	1,383	915	443	1,358	923	408	1,331
Homeless (Percent)	1.2	1	1.2	1.3	1.1	1.2	1.3	1.1	1.2	1.2	1.1	1.2	1.2	1.1	1.2	1.2	1	1.1
Foster (Number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Foster (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Students with scores used in state summaries (Number)	86,522	26,230	112,752	87,567	29,132	116,699	85,250	31,681	116,931	77,577	39,129	116,706	77,219	40,547	117,766	75,898	41,112	117,010

Demographic Characteristics of Students Taking the 2024 PSSA: Science

Demographic or Educational Characteristic	Gr 4 PPT	Gr 4 CBT	Gr 4 Total	Gr 8 PPT	Gr 8 CBT	Gr 8 Total
Female (Number)	41,470	15,779	57,249	34,812	21,261	56,073
Female (Percent)	49.1	48.8	49	48.5	47.8	48.2
Male (Number)	42,937	16,542	59,479	36,944	23,230	60,174
Male (Percent)	50.9	51.2	51	51.5	52.2	51.8
American Indian/Alaskan Native (not Hispanic) (Number)	118	69	187	115	82	197
American Indian/Alaskan Native (not Hispanic) (Percent)	.1	.2	.2	.2	.2	.2
Asian (not Hispanic) (Number)	3,792	1,916	5,708	3,025	2,518	5,543
Asian (not Hispanic) (Percent)	4.5	5.9	4.9	4.2	5.7	4.8
Black or African American (not Hispanic) (Number)	12,232	3,973	16,205	11,037	5,230	16,267
Black or African American (not Hispanic) (Percent)	14.5	12.3	13.9	15.4	11.8	14
Hispanic (any race) (Number)	12,492	4,307	16,799	11,429	5,169	16,598
Hispanic (any race) (Percent)	14.8	13.3	14.4	15.9	11.6	14.3
Multi-Racial (not Hispanic) (Number)	4,597	1,807	6,404	3,579	2,144	5,723
Multi-Racial (not Hispanic) (Percent)	5.4	5.6	5.5	5	4.8	4.9
White (not Hispanic) (Number)	51,119	20,218	71,337	42,500	29,300	71,800
White (not Hispanic) (Percent)	60.6	62.6	61.1	59.2	65.9	61.8
Native Hawaiian or Other Pacific Islander (not Hispanic) (Number)	57	31	88	71	48	119
Native Hawaiian or Other Pacific Islander (not Hispanic) (Percent)	.1	.1	.1	.1	.1	.1
IEP (not gifted) (Number)	17,364	7,167	24,531	13,164	8,696	21,860
IEP (not gifted) (Percent)	20.6	22.2	21	18.3	19.5	18.8
Student exited IEP in last 2 years (Number)	1,133	381	1,514	846	504	1,350
Student exited IEP in last 2 years (Percent)	1.3	1.2	1.3	1.2	1.1	1.2
Title I (Number)	49,309	16,212	65,521	27,402	11,726	39,128
Title I (Percent)	58.4	50.2	56.1	38.2	26.4	33.7
Title III served (Number)	4,661	1,732	6,393	3,829	1,296	5,125
Title III served (Percent)	5.5	5.4	5.5	5.3	2.9	4.4
Title III not served (Number)	9,683	3,149	12,832	7,887	5,389	13,276
Title III not served (Percent)	11.5	9.7	11	11	12.1	11.4

Demographic or Educational Characteristic	Gr 4 PPT	Gr 4 CBT	Gr 4 Total	Gr 8 PPT	Gr 8 CBT	Gr 8 Total
Migrant student (Number)	159	41	200	157	36	193
Migrant student (Percent)	.2	.1	.2	.2	.1	.2
EL enrolled first year (Number)	0	0	0	0	0	0
EL enrolled first year (Percent)	0	0	0	0	0	0
EL enrolled not first year (Number)	5,006	1,886	6,892	4,000	1,485	5,485
EL enrolled not first year (Percent)	5.9	5.8	5.9	5.6	3.3	4.7
Exited ESL/bilingual program and in first year of monitoring (Number)	349	165	514	202	133	335
Exited ESL/bilingual program and in first year of monitoring (Percent)	.4	.5	.4	.3	.3	.3
Exited ESL/bilingual program and in 2nd year of monitoring (Number)	165	77	242	237	122	359
Exited ESL/bilingual program and in 2nd year of monitoring (Percent)	.2	.2	.2	.3	.3	.3
Former EL no longer monitored (Number)	9	16	25	469	400	869
Former EL no longer monitored (Percent)	0	0	0	.7	.9	.7
LIFE first year (Number)	0	0	0	0	0	0
LIFE first year (Percent)	0	0	0	0	0	0
LIFE not first year (Number)	25	8	33	60	11	71
LIFE not first year (Percent)	0	0	0	.1	0	.1
Former EL exited and in 3rd year of monitoring (Number)	54	33	87	290	202	492
Former EL exited and in 3rd year of monitoring (Percent)	.1	.1	.1	.4	.5	.4
Former EL exited and in 4th year of monitoring (Number)	43	37	80	586	352	938
Former EL exited and in 4th year of monitoring (Percent)	.1	.1	.1	.8	.8	.8
Economically disadvantaged (Number)	45,055	15,329	60,384	37,537	19,834	57,371
Economically disadvantaged (Percent)	53.4	47.4	51.7	52.3	44.6	49.4
Historically Underperforming Subgroup (Number)	52,115	18,531	70,646	42,524	23,520	66,044
Historically Underperforming Subgroup (Percent)	61.7	57.3	60.5	59.3	52.9	56.8
Enrollment in school of residence after Oct 1 (Number)	1,575	549	2,124	1,469	730	2,199
Enrollment in school of residence after Oct 1 (Percent)	1.9	1.7	1.8	2	1.6	1.9
Enrollment in district of residence after Oct 1 (Number)	1,043	373	1,416	956	561	1,517
Enrollment in district of residence after Oct 1 (Percent)	1.2	1.2	1.2	1.3	1.3	1.3
Enrollment as PA resident after Oct 1 (Number)	0	0	0	0	0	0
Enrollment as PA resident after Oct 1 (Percent)	0	0	0	0	0	0

Demographic or Educational Characteristic	Gr 4 PPT	Gr 4 CBT	Gr 4 Total	Gr 8 PPT	Gr 8 CBT	Gr 8 Total
Enrollment in school of residence after previous Oct 1 but on/before current Oct 1 (Number)	17,497	5,716	23,213	13,325	5,332	18,657
Enrollment in school of residence after previous Oct 1 but on/before current Oct 1 (Percent)	20.7	17.7	19.9	18.6	12	16
Enrollment in district of residence after previous Oct 1 but on/before current Oct 1 (Number)	6,217	2,352	8,569	5,075	2,935	8,010
Enrollment in district of residence after previous Oct 1 but on/before current Oct 1 (Percent)	7.4	7.3	7.3	7.1	6.6	6.9
Court/agency placed (Number)	9	3	12	81	13	94
Court/agency placed (Percent)	0	0	0	.1	0	.1
Military family (Number)	536	221	757	415	233	648
Military family (Percent)	.6	.7	.6	.6	.5	.6
Homeless (Number)	1,069	360	1,429	878	435	1,313
Homeless (Percent)	1.3	1.1	1.2	1.2	1	1.1
Foster (Number)	0	0	0	0	0	0
Foster (Percent)	0	0	0	0	0	0
Students with scores used in state summaries (Number)	84,407	32,321	116,728	71,756	44,491	116,247

APPENDIX J: INCIDENCE OF ACCOMMODATIONS RECEIVED

Incidence of Presentation Accommodations Received on the 2024 PSSA: Mathematics

Type of Presentation Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Braille format (Number)	5	N/A	5	3	N/A	3	6	N/A	6	5	N/A	5	7	N/A	7	4	N/A	4
Braille format (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Large print format (Number)	59	N/A	59	83	N/A	83	69	N/A	69	52	N/A	52	61	N/A	61	55	N/A	55
Large print format (Percent)	.1	N/A	.1	.1	N/A	.1	.1	N/A	.1	.1	N/A	0	.1	N/A	.1	.1	N/A	0
Computer Assistive Technology (Number)	2	N/A	2	2	N/A	2	2	N/A	2	1	N/A	1	4	N/A	4	2	N/A	2
Computer Assistive Technology (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Some test items/questions read aloud (Number)	6,340	890	7,230	6,241	1,184	7,425	4,438	1,095	5,533	2,119	1,261	3,380	1,346	1,369	2,715	1,224	1,374	2,598
Some test items/questions read aloud (Percent)	7.4	3.3	6.4	7.2	3.9	6.3	5.2	3.4	4.7	2.7	3.3	2.9	1.7	3.5	2.3	1.6	3.5	2.2
All test items/questions read aloud (Number)	4,553	2,112	6,665	4,408	2,635	7,043	3,194	2,535	5,729	1,504	2,428	3,932	995	1,807	2,802	787	1,454	2,241
All test items/questions read aloud (Percent)	5.3	7.8	5.9	5.1	8.7	6	3.8	7.9	4.9	1.9	6.3	3.4	1.3	4.7	2.4	1	3.7	1.9
Test items/questions signed (Number)	6	13	19	6	13	19	5	13	18	2	4	6	5	18	23	0	8	8
Test items/questions signed (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Test items/questions interpreted for EL student (Number)	111	28	139	93	39	132	58	30	88	49	19	68	63	8	71	47	10	57
Test items/questions interpreted for EL student (Percent)	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	0	.1	.1	0	.1	.1	0	0
Amplification device (Number)	29	31	60	37	29	66	44	32	76	25	36	61	20	36	56	6	12	18
Amplification device (Percent)	0	.1	.1	0	.1	.1	.1	.1	.1	0	.1	.1	0	.1	0	0	0	0
Magnification device (Number)	13	9	22	8	11	19	4	16	20	3	16	19	9	10	19	12	9	21
Magnification device (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Color overlay (Number)	20	N/A	20	10	N/A	10	3	N/A	3	3	N/A	3	0	N/A	0	4	N/A	4
Color overlay (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Other (per Accommodations Guidelines) (Number)	224	154	378	264	205	469	233	248	481	117	213	330	80	134	214	56	185	241
Other (per Accommodations Guidelines) (Percent)	.3	.6	.3	.3	.7	.4	.3	.8	.4	.2	.6	.3	.1	.3	.2	.1	.5	.2

Type of Presentation Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Spanish version (Number)	375	N/A	375	419	N/A	419	487	N/A	487	584	N/A	584	612	N/A	612	663	N/A	663
Spanish version (Percent)	.4	N/A	.3	.5	N/A	.4	.6	N/A	.4	.7	N/A	.5	.8	N/A	.5	.9	N/A	.6
Audio (Number)	N/A	4,306	4,306	N/A	5,075	5,075	N/A	4,965	4,965	N/A	5,236	5,236	N/A	4,532	4,532	N/A	3,960	3,960
Audio (Percent)	N/A	15.9	3.8	N/A	16.8	4.3	N/A	15.4	4.2	N/A	13.5	4.5	N/A	11.7	3.9	N/A	10.1	3.4
Video sign language (Number)	N/A	14	14	N/A	21	21	N/A	14	14	N/A	14	14	N/A	21	21	N/A	12	12
Video sign language (Percent)	N/A	.1	0	N/A	.1	0	N/A	0	0	N/A	0	0	N/A	.1	0	N/A	0	0
Color Chooser (Number)	N/A	10	10	N/A	8	8	N/A	42	42	N/A	33	33	N/A	19	19	N/A	30	30
Color Chooser (Percent)	N/A	0	0	N/A	0	0	N/A	.1	0	N/A	.1	0	N/A	0	0	N/A	.1	0
Contrasting Text Chooser (Number)	N/A	3	3	N/A	5	5	N/A	40	40	N/A	27	27	N/A	9	9	N/A	9	9
Contrasting Text Chooser (Percent)	N/A	0	0	N/A	0	0	N/A	.1	0	N/A	.1	0	N/A	0	0	N/A	0	0
Reverse Contrast (Number)	N/A	2	2	N/A	2	2	N/A	0	0	N/A	1	1	N/A	3	3	N/A	3	3
Reverse Contrast (Percent)	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0
Refreshable Braille (Number)	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0
Refreshable Braille (Percent)	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0

Incidence of Presentation Accommodations Received on the 2024 PSSA: English Language Arts

Type of Presentation Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Braille format (Number)	11	N/A	11	8	N/A	8	10	N/A	10	6	N/A	6	8	N/A	8	5	N/A	5
Braille format (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Large print format (Number)	71	N/A	71	86	N/A	86	82	N/A	82	65	N/A	65	67	N/A	67	63	N/A	63
Large print format (Percent)	.1	N/A	.1	.1	N/A	.1	.1	N/A	.1	.1	N/A	.1	.1	N/A	.1	.1	N/A	.1
Computer Assistive Technology (Number)	8	N/A	8	8	N/A	8	7	N/A	7	11	N/A	11	9	N/A	9	9	N/A	9
Computer Assistive Technology (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Some conventions questions/text-dependent analysis prompts read aloud (Number)	3,101	483	3,584	4,148	958	5,106	3,161	903	4,064	1,669	1,205	2,874	1,108	1,295	2,403	1,006	1,274	2,280
Some conventions questions/text-dependent analysis prompts read aloud (Percent)	3.6	1.8	3.2	4.7	3.3	4.4	3.7	2.9	3.5	2.2	3.1	2.5	1.4	3.2	2	1.3	3.1	1.9
All conventions questions/text-dependent analysis prompts read aloud (Number)	3,755	1,091	4,846	3,631	2,075	5,706	2,720	2,108	4,828	1,385	2,141	3,526	800	1,527	2,327	757	1,209	1,966
All conventions questions/text-dependent analysis prompts read aloud (Percent)	4.3	4.2	4.3	4.1	7.1	4.9	3.2	6.7	4.1	1.8	5.5	3	1	3.8	2	1	2.9	1.7
All test items/questions read aloud (Number)	36	N/A	36	45	N/A	45	39	N/A	39	32	N/A	32	24	N/A	24	26	N/A	26
All test items/questions read aloud (Percent)	0	N/A	0	.1	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Conventions questions/text-dependent analysis prompts signed (Number)	0	12	12	7	14	21	6	16	22	8	8	16	6	16	22	2	14	16
Conventions questions/text-dependent analysis prompts signed (Percent)	0	0	0	0	0	0	0	.1	0	0	0	0	0	0	0	0	0	0
Conventions questions/text-dependent analysis prompts interpreted for EL student (Number)	0	30	30	47	41	88	30	35	65	50	19	69	28	27	55	37	33	70
Conventions questions/text-dependent analysis prompts interpreted for EL student (Percent)	0	.1	0	.1	.1	.1	0	.1	.1	.1	0	.1	0	.1	0	0	.1	.1
Amplification device (Number)	38	31	69	45	29	74	32	31	63	36	38	74	20	36	56	13	12	25
Amplification device (Percent)	0	.1	.1	.1	.1	.1	0	.1	.1	0	.1	.1	0	.1	0	0	0	0
Magnification device (Number)	16	9	25	15	11	26	8	16	24	8	18	26	7	11	18	14	10	24
Magnification device (Percent)	0	0	0	0	0	0	0	.1	0	0	0	0	0	0	0	0	0	0
Color overlay (Number)	51	N/A	51	76	N/A	76	31	N/A	31	14	N/A	14	4	N/A	4	12	N/A	12
Color overlay (Percent)	.1	N/A	0	.1	N/A	.1	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Other (per Accommodations Guidelines) (Number)	280	174	454	397	219	616	320	248	568	124	231	355	85	199	284	72	257	329

Type of Presentation Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Other (per Accommodations Guidelines) (Percent)	.3	.7	.4	.5	.8	.5	.4	.8	.5	.2	.6	.3	.1	.5	.2	.1	.6	.3
Audio (Number)	N/A	3,966	3,966	N/A	4,649	4,649	N/A	4,688	4,688	N/A	5,197	5,197	N/A	4,632	4,632	N/A	4,086	4,086
Audio (Percent)	N/A	15.1	3.5	N/A	16	4	N/A	14.8	4	N/A	13.3	4.5	N/A	11.4	3.9	N/A	9.9	3.5
Color Chooser (Number)	N/A	11	11	N/A	9	9	N/A	45	45	N/A	39	39	N/A	27	27	N/A	33	33
Color Chooser (Percent)	N/A	0	0	N/A	0	0	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0
Contrasting Text Chooser (Number)	N/A	4	4	N/A	6	6	N/A	43	43	N/A	32	32	N/A	12	12	N/A	12	12
Contrasting Text Chooser (Percent)	N/A	0	0	N/A	0	0	N/A	.1	0	N/A	.1	0	N/A	0	0	N/A	0	0
Reverse Contrast (Number)	N/A	2	2	N/A	2	2	N/A	0	0	N/A	1	1	N/A	3	3	N/A	2	2
Reverse Contrast (Percent)	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0
Refreshable Braille (Number)	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0
Refreshable Braille (Percent)	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0

Incidence of Presentation Accommodations Received on the 2024 PSSA: Science

Type of Presentation Accommodation	Gr 4 PPT	Gr 4 CBT	Gr 4 Total	Gr 8 PPT	Gr 8 CBT	Gr 8 Total
Braille format (Number)	3	N/A	3	4	N/A	4
Braille format (Percent)	0	N/A	0	0	N/A	0
Large print format (Number)	63	N/A	63	49	N/A	49
Large print format (Percent)	.1	N/A	.1	.1	N/A	0
Computer Assistive Technology (Number)	1	N/A	1	3	N/A	3
Computer Assistive Technology (Percent)	0	N/A	0	0	N/A	0
Some test items/questions read aloud (Number)	5,588	1,183	6,771	981	1,403	2,384
Some test items/questions read aloud (Percent)	6.6	3.7	5.8	1.4	3.2	2.1
All test items/questions read aloud (Number)	4,468	2,721	7,189	810	1,500	2,310
All test items/questions read aloud (Percent)	5.3	8.4	6.2	1.1	3.4	2
Test items/questions signed (Number)	6	13	19	1	9	10
Test items/questions signed (Percent)	0	0	0	0	0	0
Test items/questions interpreted for EL student (Number)	82	51	133	63	14	77
Test items/questions interpreted for EL student (Percent)	.1	.2	.1	.1	0	.1
Amplification device (Number)	38	29	67	7	15	22
Amplification device (Percent)	0	.1	.1	0	0	0
Magnification device (Number)	7	11	18	11	10	21
Magnification device (Percent)	0	0	0	0	0	0
Color overlay (Number)	16	N/A	16	0	N/A	0
Color overlay (Percent)	0	N/A	0	0	N/A	0
Other (per Accommodations Guidelines) (Number)	233	208	441	94	244	338
Other (per Accommodations Guidelines) (Percent)	.3	.6	.4	.1	.5	.3
Spanish version (Number)	419	N/A	419	670	N/A	670
Spanish version (Percent)	.5	N/A	.4	.9	N/A	.6
Audio (Number)	N/A	5,191	5,191	N/A	4,335	4,335
Audio (Percent)	N/A	16.1	4.4	N/A	9.7	3.7
Video sign language (Number)	N/A	19	19	N/A	12	12
Video sign language (Percent)	N/A	.1	0	N/A	0	0

Type of Presentation Accommodation	Gr 4 PPT	Gr 4 CBT	Gr 4 Total	Gr 8 PPT	Gr 8 CBT	Gr 8 Total
Color Chooser (Number)	N/A	13	13	N/A	34	34
Color Chooser (Percent)	N/A	0	0	N/A	.1	0
Contrasting Text Chooser (Number)	N/A	10	10	N/A	11	11
Contrasting Text Chooser (Percent)	N/A	0	0	N/A	0	0
Reverse Contrast (Number)	N/A	1	1	N/A	3	3
Reverse Contrast (Percent)	N/A	0	0	N/A	0	0
Refreshable Braille (Number)	N/A	0	0	N/A	0	0
Refreshable Braille (Percent)	N/A	0	0	N/A	0	0

Incidence of Response Accommodations Received on the 2024 PSSA: Mathematics

Type of Response Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Assessment Coordinator marked multiple-choice responses at student's direction (Number)	69	13	82	96	6	102	55	3	58	44	1	45	31	3	34	18	6	24
Assessment Coordinator marked multiple-choice responses at student's direction (Percent)	.1	0	.1	.1	0	.1	.1	0	0	.1	0	0	0	0	0	0	0	0
Assessment Coordinator scribed open-ended responses at student's direction (Number)	148	45	193	160	38	198	117	55	172	72	28	100	64	18	82	45	27	72
Assessment Coordinator scribed open-ended responses at student's direction (Percent)	.2	.2	.2	.2	.1	.2	.1	.2	.1	.1	.1	.1	.1	0	.1	.1	.1	.1
Assessment Coordinator transcribed student responses (Number)	132	19	151	151	21	172	153	16	169	107	12	119	105	7	112	98	6	104
Assessment Coordinator transcribed student responses (Percent)	.2	.1	.1	.2	.1	.1	.2	0	.1	.1	0	.1	.1	0	.1	.1	0	.1
Qualified interpreter translated, transcribed, and/or scribed student's signed responses (Number)	5	2	7	10	5	15	7	4	11	1	3	4	2	3	5	1	1	2
Qualified interpreter translated, transcribed, and/or scribed student's signed responses (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Qualified interpreter translated, transcribed, and/or scribed EL student responses (Number)	12	1	13	8	6	14	14	10	24	10	3	13	6	5	11	13	0	13
Qualified interpreter translated, transcribed, and/or scribed EL student responses (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Keyboard, word processor, or computer (Number)	10	N/A	10	19	N/A	19	30	N/A	30	12	N/A	12	9	N/A	9	23	N/A	23
Keyboard, word processor, or computer (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Brailler/Notetaker (Number)	3	N/A	3	2	N/A	2	5	N/A	5	3	N/A	3	1	N/A	1	2	N/A	2
Brailler/Notetaker (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Augmentative communication device (Number)	1	N/A	1	2	N/A	2	1	N/A	1	0	N/A	0	0	N/A	0	1	N/A	1
Augmentative communication device (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Computer Assistive Technology (Number)	5	N/A	5	6	N/A	6	3	N/A	3	2	N/A	2	1	N/A	1	3	N/A	3
Computer Assistive Technology (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Translation dictionary for EL student (Number)	30	61	91	67	72	139	62	57	119	97	134	231	110	121	231	97	85	182
Translation dictionary for EL student (Percent)	0	.2	.1	.1	.2	.1	.1	.2	.1	.1	.3	.2	.1	.3	.2	.1	.2	.2
Other (per Accommodations Guidelines) (Number)	122	51	173	137	73	210	129	142	271	59	143	202	40	84	124	71	78	149

Type of Response Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Other (per Accommodations Guidelines) (Percent)	.1	.2	.2	.2	.2	.2	.2	.4	.2	.1	.4	.2	.1	.2	.1	.1	.2	.1
Mixed-Mode (Number)	N/A	51	51	N/A	42	42	N/A	53	53	N/A	37	37	N/A	24	24	N/A	9	9
Mixed-Mode (Percent)	N/A	.2	0	N/A	.1	0	N/A	.2	0	N/A	.1	0	N/A	.1	0	N/A	0	0

Incidence of Response Accommodations Received on the 2024 PSSA: English Language Arts

Type of Response Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Assessment Coordinator marked multiple-choice responses at student's direction (Number)	73	13	86	118	6	124	102	2	104	48	2	50	37	4	41	31	5	36
Assessment Coordinator marked multiple-choice responses at student's direction (Percent)	.1	0	.1	.1	0	.1	.1	0	.1	.1	0	0	0	0	0	0	0	0
Assessment Coordinator scribed open-ended responses at student's direction (Number)	159	44	203	183	41	224	143	62	205	95	36	131	86	26	112	65	20	85
Assessment Coordinator scribed open-ended responses at student's direction (Percent)	.2	.2	.2	.2	.1	.2	.2	.2	.2	.1	.1	.1	.1	.1	.1	.1	0	.1
Assessment Coordinator transcribed student responses (Number)	170	18	188	275	22	297	298	18	316	202	13	215	218	9	227	167	10	177
Assessment Coordinator transcribed student responses (Percent)	.2	.1	.2	.3	.1	.3	.3	.1	.3	.3	0	.2	.3	0	.2	.2	0	.2
Keyboard, word processor, or computer (Number)	25	N/A	25	81	N/A	81	143	N/A	143	128	N/A	128	83	N/A	83	102	N/A	102
Keyboard, word processor, or computer (Percent)	0	N/A	0	.1	N/A	.1	.2	N/A	.1	.2	N/A	.1	.1	N/A	.1	.1	N/A	.1
Brailler/Notetaker (Number)	6	N/A	6	2	N/A	2	1	N/A	1	4	N/A	4	4	N/A	4	2	N/A	2
Brailler/Notetaker (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Augmentative communication device (Number)	2	N/A	2	5	N/A	5	4	N/A	4	0	N/A	0	1	N/A	1	0	N/A	0
Augmentative communication device (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Computer Assistive Technology (Number)	10	N/A	10	12	N/A	12	9	N/A	9	4	N/A	4	4	N/A	4	3	N/A	3
Computer Assistive Technology (Percent)	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A	0
Other (per Accommodations Guidelines) (Number)	55	46	101	67	47	114	123	105	228	37	49	86	41	44	85	46	63	109
Other (per Accommodations Guidelines) (Percent)	.1	.2	.1	.1	.2	.1	.1	.3	.2	0	.1	.1	.1	.1	.1	.1	.2	.1
Mixed-Mode (Number)	N/A	41	41	N/A	31	31	N/A	42	42	N/A	20	20	N/A	26	26	N/A	9	9
Mixed-Mode (Percent)	N/A	.2	0	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	.1	0	N/A	0	0

Incidence of Response Accommodations Received on the 2024 PSSA: Science

Type of Response Accommodation	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Assessment Coordinator marked multiple-choice responses at student's direction (Number)	79	8	87	23	7	30
Assessment Coordinator marked multiple-choice responses at student's direction (Percent)	.1	0	.1	0	0	0
Assessment Coordinator scribed open-ended responses at student's direction (Number)	170	42	212	53	27	80
Assessment Coordinator scribed open-ended responses at student's direction (Percent)	.2	.1	.2	.1	.1	.1
Assessment Coordinator transcribed student responses (Number)	156	24	180	81	8	89
Assessment Coordinator transcribed student responses (Percent)	.2	.1	.2	.1	0	.1
Qualified interpreter translated, transcribed, and/or scribed student's signed responses (Number)	4	4	8	2	1	3
Qualified interpreter translated, transcribed, and/or scribed student's signed responses (Percent)	0	0	0	0	0	0
Qualified interpreter translated, transcribed, and/or scribed EL student responses (Number)	10	6	16	9	0	9
Qualified interpreter translated, transcribed, and/or scribed EL student responses (Percent)	0	0	0	0	0	0
Keyboard, word processor, or computer (Number)	21	N/A	21	27	N/A	27
Keyboard, word processor, or computer (Percent)	0	N/A	0	0	N/A	0
Brailler/Notetaker (Number)	1	N/A	1	2	N/A	2
Brailler/Notetaker (Percent)	0	N/A	0	0	N/A	0
Augmentative communication device (Number)	3	N/A	3	1	N/A	1
Augmentative communication device (Percent)	0	N/A	0	0	N/A	0
Computer Assistive Technology (Number)	8	N/A	8	3	N/A	3
Computer Assistive Technology (Percent)	0	N/A	0	0	N/A	0
Translation dictionary for EL student (Number)	66	70	136	93	97	190
Translation dictionary for EL student (Percent)	.1	.2	.1	.1	.2	.2
Other (per Accommodations Guidelines) (Number)	67	50	117	33	57	90
Other (per Accommodations Guidelines) (Percent)	.1	.2	.1	0	.1	.1
Mixed-Mode (Number)	N/A	31	31	N/A	9	9
Mixed-Mode (Percent)	N/A	.1	0	N/A	0	0

Incidence of Setting Accommodations Received on the 2024 PSSA: Mathematics

Type of Setting Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Hospital/home setting (Number)	2	0	2	5	2	7	6	9	15	8	0	8	7	2	9	12	0	12
Hospital/home setting (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
One-on-one setting (Number)	412	101	513	399	115	514	359	105	464	224	99	323	174	94	268	162	64	226
One-on-one setting (Percent)	.5	.4	.5	.5	.4	.4	.4	.3	.4	.3	.3	.3	.2	.2	.2	.2	.2	.2
Small group setting (Number)	12,750	4,389	17,139	13,690	5,390	19,080	12,438	5,651	18,089	9,752	6,178	15,930	9,376	5,993	15,369	9,154	5,895	15,049
Small group setting (Percent)	14.8	16.2	15.2	15.8	17.9	16.3	14.7	17.5	15.5	12.5	16	13.7	11.9	15.5	13.1	11.8	15	12.9
Other (per Accommodations Guidelines) (Number)	59	66	125	79	36	115	91	108	199	73	91	164	32	112	144	42	101	143
Other (per Accommodations Guidelines) (Percent)	.1	.2	.1	.1	.1	.1	.1	.3	.2	.1	.2	.1	0	.3	.1	.1	.3	.1
Smartphone or smartwatch for medical/glucose monitoring (Number)	49	34	83	58	35	93	70	39	109	55	57	112	59	60	119	52	50	102
Smartphone or smartwatch for medical/glucose monitoring (Percent)	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.2	.1	.1	.1	.1

Incidence of Setting Accommodations Received on the 2024 PSSA: English Language Arts

Type of Setting Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Hospital/home setting (Number)	4	0	4	5	1	6	7	9	16	17	0	17	11	2	13	10	0	10
Hospital/home setting (Percent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
One-on-one setting (Number)	404	99	503	421	121	542	365	106	471	235	106	341	184	96	280	181	73	254
One-on-one setting (Percent)	.5	.4	.4	.5	.4	.5	.4	.3	.4	.3	.3	.3	.2	.2	.2	.2	.2	.2
Small group setting (Number)	12,807	4,315	17,122	13,972	5,195	19,167	12,654	5,578	18,232	9,962	6,193	16,155	9,500	6,206	15,706	9,178	6,059	15,237
Small group setting (Percent)	14.8	16.5	15.2	16	17.8	16.4	14.8	17.6	15.6	12.8	15.8	13.8	12.3	15.3	13.3	12.1	14.7	13
Other (per Accommodations Guidelines) (Number)	107	66	173	96	36	132	84	108	192	100	120	220	68	172	240	101	153	254
Other (per Accommodations Guidelines) (Percent)	.1	.3	.2	.1	.1	.1	.1	.3	.2	.1	.3	.2	.1	.4	.2	.1	.4	.2
Smartphone or smartwatch for medical/glucose monitoring (Number)	59	35	94	60	34	94	71	40	111	67	57	124	57	60	117	58	60	118
Smartphone or smartwatch for medical/glucose monitoring (Percent)	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1

Incidence of Setting Accommodations Received on the 2024 PSSA: Science

Type of Setting Accommodation	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Hospital/home setting (Number)	2	1	3	10	0	10
Hospital/home setting (Percent)	0	0	0	0	0	0
One-on-one setting (Number)	403	121	524	164	67	231
One-on-one setting (Percent)	.5	.4	.4	.2	.2	.2
Small group setting (Number)	12,969	5,539	18,508	8,180	6,176	14,356
Small group setting (Percent)	15.4	17.1	15.9	11.4	13.9	12.3
Other (per Accommodations Guidelines) (Number)	46	36	82	54	152	206
Other (per Accommodations Guidelines) (Percent)	.1	.1	.1	.1	.3	.2
Smartphone or smartwatch for medical/glucose monitoring (Number)	52	34	86	50	58	108
Smartphone or smartwatch for medical/glucose monitoring (Percent)	.1	.1	.1	.1	.1	.1

Incidence of Timing Accommodations Received on the 2024 PSSA: Mathematics

Type of Timing Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Extended time (Number)	4,117	2,766	6,883	4,066	3,143	7,209	3,780	3,291	7,071	2,845	3,176	6,021	2,989	3,226	6,215	1,963	2,967	4,930
Extended time (Percent)	4.8	10.2	6.1	4.7	10.4	6.2	4.5	10.2	6	3.7	8.2	5.2	3.8	8.3	5.3	2.5	7.6	4.2
Frequent breaks (Number)	2,892	2,110	5,002	3,140	2,691	5,831	2,728	2,876	5,604	1,972	3,018	4,990	1,521	2,340	3,861	1,365	2,256	3,621
Frequent breaks (Percent)	3.4	7.8	4.4	3.6	8.9	5	3.2	8.9	4.8	2.5	7.8	4.3	1.9	6	3.3	1.8	5.7	3.1
Changed test schedule (Number)	201	37	238	240	48	288	265	51	316	193	103	296	131	74	205	168	92	260
Changed test schedule (Percent)	.2	.1	.2	.3	.2	.2	.3	.2	.3	.2	.3	.3	.2	.2	.2	.2	.2	.2
Other (per Accommodations Guidelines) (Number)	66	22	88	45	36	81	52	28	80	101	25	126	77	18	95	86	16	102
Other (per Accommodations Guidelines) (Percent)	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	0	.1	.1	0	.1

Incidence of Timing Accommodations Received on the 2024 PSSA: English Language Arts

Type of Timing Accommodation	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Extended time (Number)	4,791	2,645	7,436	8,127	3,473	11,600	6,911	3,700	10,611	6,069	3,726	9,795	4,844	3,370	8,214	3,837	3,331	7,168
Extended time (Percent)	5.5	10.1	6.6	9.3	11.9	9.9	8.1	11.7	9.1	7.8	9.5	8.4	6.3	8.3	7	5.1	8.1	6.1
Frequent breaks (Number)	3,051	2,074	5,125	3,449	2,602	6,051	3,048	2,823	5,871	2,154	3,027	5,181	1,624	2,462	4,086	1,501	2,376	3,877
Frequent breaks (Percent)	3.5	7.9	4.5	3.9	8.9	5.2	3.6	8.9	5	2.8	7.7	4.4	2.1	6.1	3.5	2	5.8	3.3
Changed test schedule (Number)	270	39	309	256	59	315	267	83	350	200	148	348	172	108	280	272	117	389
Changed test schedule (Percent)	.3	.1	.3	.3	.2	.3	.3	.3	.3	.3	.4	.3	.2	.3	.2	.4	.3	.3
Other (per Accommodations Guidelines) (Number)	86	22	108	61	42	103	19	28	47	35	28	63	57	21	78	43	20	63
Other (per Accommodations Guidelines) (Percent)	.1	.1	.1	.1	.1	.1	0	.1	0	0	.1	.1	.1	.1	.1	.1	0	.1

Incidence of Timing Accommodations Received on the 2024 PSSA: Science

Type of Timing Accommodation	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Extended time (Number)	2,840	2,865	5,705	1,529	3,079	4,608
Extended time (Percent)	3.4	8.9	4.9	2.1	6.9	4
Frequent breaks (Number)	2,826	2,650	5,476	1,159	2,366	3,525
Frequent breaks (Percent)	3.3	8.2	4.7	1.6	5.3	3
Changed test schedule (Number)	186	43	229	223	95	318
Changed test schedule (Percent)	.2	.1	.2	.3	.2	.3
Other (per Accommodations Guidelines) (Number)	68	34	102	56	22	78
Other (per Accommodations Guidelines) (Percent)	.1	.1	.1	.1	0	.1

APPENDIX K: ACCOMMODATION RATE FOR NON-IEP AND IEP STUDENTS

Accommodation Rate for Non-IEP and IEP Students on the 2024 PSSA: Mathematics

Student Subgroup	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Non-IEP Students (Number)	68,962	21,170	90,132	68,969	23,396	92,365	68,130	25,173	93,303	63,315	30,502	93,817	64,488	30,652	95,140	63,398	31,289	94,687
Non-Accommodated (Number)	60,972	18,964	79,936	61,890	21,187	83,077	62,642	23,233	85,875	60,058	28,861	88,919	61,537	29,061	90,598	61,342	30,100	91,442
Non-Accommodated (Percent)	88.4	89.6	88.7	89.7	90.6	89.9	91.9	92.3	92	94.9	94.6	94.8	95.4	94.8	95.2	96.8	96.2	96.6
Accommodated (Number)	7,990	2,206	10,196	7,079	2,209	9,288	5,488	1,940	7,428	3,257	1,641	4,898	2,951	1,591	4,542	2,056	1,189	3,245
Accommodated (Percent)	11.6	10.4	11.3	10.3	9.4	10.1	8.1	7.7	8	5.1	5.4	5.2	4.6	5.2	4.8	3.2	3.8	3.4
IEP Students (Number)	16,961	5,845	22,806	17,828	6,789	24,617	16,530	7,115	23,645	14,569	8,159	22,728	14,259	8,136	22,395	14,047	7,961	22,008
Non-Accommodated (Number)	6,368	1,541	7,909	5,979	1,391	7,370	5,432	1,220	6,652	5,602	1,554	7,156	5,542	1,714	7,256	5,680	1,732	7,412
Non-Accommodated (Percent)	37.5	26.4	34.7	33.5	20.5	29.9	32.9	17.1	28.1	38.5	19	31.5	38.9	21.1	32.4	40.4	21.8	33.7
Accommodated (Number)	10,593	4,304	14,897	11,849	5,398	17,247	11,098	5,895	16,993	8,967	6,605	15,572	8,717	6,422	15,139	8,367	6,229	14,596
Accommodated (Percent)	62.5	73.6	65.3	66.5	79.5	70.1	67.1	82.9	71.9	61.5	81	68.5	61.1	78.9	67.6	59.6	78.2	66.3

Accommodation Rate for Non-IEP and IEP Students on the 2024 PSSA: English Language Arts

Student Subgroup	Gr. 3 PPT	Gr. 3 CBT	Gr. 3 Total	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 5 PPT	Gr. 5 CBT	Gr. 5 Total	Gr. 6 PPT	Gr. 6 CBT	Gr. 6 Total	Gr. 7 PPT	Gr. 7 CBT	Gr. 7 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Non-IEP Students (Number)	69,374	20,567	89,941	69,482	22,581	92,063	68,537	24,694	93,231	62,977	30,899	93,876	63,074	32,150	95,224	61,933	32,881	94,814
Non-Accommodated (Number)	62,807	18,576	81,383	60,108	20,137	80,245	60,918	22,382	83,300	57,222	28,568	85,790	58,554	30,371	88,925	58,297	31,339	89,636
Non-Accommodated (Percent)	90.5	90.3	90.5	86.5	89.2	87.2	88.9	90.6	89.3	90.9	92.5	91.4	92.8	94.5	93.4	94.1	95.3	94.5
Accommodated (Number)	6,567	1,991	8,558	9,374	2,444	11,818	7,619	2,312	9,931	5,755	2,331	8,086	4,520	1,779	6,299	3,636	1,542	5,178
Accommodated (Percent)	9.5	9.7	9.5	13.5	10.8	12.8	11.1	9.4	10.7	9.1	7.5	8.6	7.2	5.5	6.6	5.9	4.7	5.5
IEP Students (Number)	17,148	5,663	22,811	18,085	6,551	24,636	16,713	6,987	23,700	14,600	8,230	22,830	14,145	8,397	22,542	13,965	8,231	22,196
Non-Accommodated (Number)	6,484	1,515	7,999	5,752	1,366	7,118	5,235	1,190	6,425	5,238	1,600	6,838	5,241	1,838	7,079	5,453	1,833	7,286
Non-Accommodated (Percent)	37.8	26.8	35.1	31.8	20.9	28.9	31.3	17	27.1	35.9	19.4	30	37.1	21.9	31.4	39	22.3	32.8
Accommodated (Number)	10,664	4,148	14,812	12,333	5,185	17,518	11,478	5,797	17,275	9,362	6,630	15,992	8,904	6,559	15,463	8,512	6,398	14,910
Accommodated (Percent)	62.2	73.2	64.9	68.2	79.1	71.1	68.7	83	72.9	64.1	80.6	70	62.9	78.1	68.6	61	77.7	67.2

Accommodation Rate for Non-IEP and IEP Students on the 2024 PSSA: Science

Student Subgroup	Gr. 4 PPT	Gr. 4 CBT	Gr. 4 Total	Gr. 8 PPT	Gr. 8 CBT	Gr. 8 Total
Non-IEP Students (Number)	67,043	25,154	92,197	58,592	35,795	94,387
Non-Accommodated (Number)	61,398	23,030	84,428	56,805	34,460	91,265
Non-Accommodated (Percent)	91.6	91.6	91.6	97	96.3	96.7
Accommodated (Number)	5,645	2,124	7,769	1,787	1,335	3,122
Accommodated (Percent)	8.4	8.4	8.4	3	3.7	3.3
IEP Students (Number)	17,364	7,167	24,531	13,164	8,696	21,860
Non-Accommodated (Number)	6,067	1,601	7,668	5,626	2,115	7,741
Non-Accommodated (Percent)	34.9	22.3	31.3	42.7	24.3	35.4
Accommodated (Number)	11,297	5,566	16,863	7,538	6,581	14,119
Accommodated (Percent)	65.1	77.7	68.7	57.3	75.7	64.6

APPENDIX L: INCIDENCE OF ACCOMMODATIONS RECEIVED BY IEP AND EL STUDENTS

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2024 PSSA: Mathematics Grade 3

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some test items/questions read aloud (Number)	2,823	2,728	607	182
PPT - Some test items/questions read aloud (Percent)	4.4	16.9	11.4	22.2
PPT - All test items/questions read aloud (Number)	444	3,737	201	171
PPT - All test items/questions read aloud (Percent)	.7	23.2	3.8	20.8
PPT - Small group setting (Number)	2,033	9,139	1,051	527
PPT - Small group setting (Percent)	3.2	56.6	19.7	64.2
PPT - Extended time (Number)	2,234	1,639	154	90
PPT - Extended time (Percent)	3.5	10.2	2.9	11
PPT - Frequent breaks (Number)	305	2,419	46	122
PPT - Frequent breaks (Percent)	.5	15	.9	14.9
PPT - Number assessed (Number)	63,635	16,140	5,327	821
CBT - Some test items/questions read aloud (Number)	219	554	68	49
CBT - Some test items/questions read aloud (Percent)	1.1	10.1	4.1	13.7
CBT - All test items/questions read aloud (Number)	210	1,628	148	126
CBT - All test items/questions read aloud (Percent)	1.1	29.7	8.9	35.2
CBT - Small group setting (Number)	437	3,354	346	252
CBT - Small group setting (Percent)	2.2	61.1	20.9	70.4
CBT - Extended time (Number)	752	1,731	169	114
CBT - Extended time (Percent)	3.9	31.5	10.2	31.8
CBT - Frequent breaks (Number)	165	1,793	57	95
CBT - Frequent breaks (Percent)	.8	32.7	3.4	26.5
CBT - Number assessed (Number)	19,512	5,487	1,658	358
Total - Some test items/questions read aloud (Number)	3,042	3,282	675	231
Total - Some test items/questions read aloud (Percent)	3.7	15.2	9.7	19.6
Total - All test items/questions read aloud (Number)	654	5,365	349	297
Total - All test items/questions read aloud (Percent)	.8	24.8	5	25.2
Total - Small group setting (Number)	2,470	12,493	1,397	779
Total - Small group setting (Percent)	3	57.8	20	66.1
Total - Extended time (Number)	2,986	3,370	323	204
Total - Extended time (Percent)	3.6	15.6	4.6	17.3
Total - Frequent breaks (Number)	470	4,212	103	217
Total - Frequent breaks (Percent)	.6	19.5	1.5	18.4
Total - Number assessed (Number)	83,147	21,627	6,985	1,179

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2024 PSSA: Mathematics Grade 4

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some test items/questions read aloud (Number)	2,272	3,220	507	242
PPT - Some test items/questions read aloud (Percent)	3.5	19.1	10.3	24.5
PPT - All test items/questions read aloud (Number)	337	3,729	158	184
PPT - All test items/questions read aloud (Percent)	.5	22.1	3.2	18.6
PPT - Small group setting (Number)	1,743	10,363	936	648
PPT - Small group setting (Percent)	2.7	61.5	19	65.6
PPT - Extended time (Number)	2,094	1,679	207	86
PPT - Extended time (Percent)	3.3	10	4.2	8.7
PPT - Frequent breaks (Number)	285	2,698	43	114
PPT - Frequent breaks (Percent)	.4	16	.9	11.5
PPT - Number assessed (Number)	64,049	16,840	4,920	988
CBT - Some test items/questions read aloud (Number)	323	735	66	60
CBT - Some test items/questions read aloud (Percent)	1.5	11.5	4.2	15.8
CBT - All test items/questions read aloud (Number)	182	2,150	161	142
CBT - All test items/questions read aloud (Percent)	.8	33.5	10.3	37.5
CBT - Small group setting (Number)	472	4,330	305	283
CBT - Small group setting (Percent)	2.2	67.6	19.5	74.7
CBT - Extended time (Number)	748	2,119	154	122
CBT - Extended time (Percent)	3.4	33.1	9.8	32.2
CBT - Frequent breaks (Number)	187	2,324	50	130
CBT - Frequent breaks (Percent)	.9	36.3	3.2	34.3
CBT - Number assessed (Number)	21,828	6,410	1,568	379
Total - Some test items/questions read aloud (Number)	2,595	3,955	573	302
Total - Some test items/questions read aloud (Percent)	3	17	8.8	22.1
Total - All test items/questions read aloud (Number)	519	5,879	319	326
Total - All test items/questions read aloud (Percent)	.6	25.3	4.9	23.8
Total - Small group setting (Number)	2,215	14,693	1,241	931
Total - Small group setting (Percent)	2.6	63.2	19.1	68.1
Total - Extended time (Number)	2,842	3,798	361	208
Total - Extended time (Percent)	3.3	16.3	5.6	15.2
Total - Frequent breaks (Number)	472	5,022	93	244
Total - Frequent breaks (Percent)	.5	21.6	1.4	17.8
Total - Number assessed (Number)	85,877	23,250	6,488	1,367

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2024 PSSA: Mathematics 5

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some test items/questions read aloud (Number)	1,361	2,595	313	169
PPT - Some test items/questions read aloud (Percent)	2.2	16.6	6.1	18.4
PPT - All test items/questions read aloud (Number)	187	2,782	90	135
PPT - All test items/questions read aloud (Percent)	.3	17.8	1.7	14.7
PPT - Small group setting (Number)	1,465	9,721	687	565
PPT - Small group setting (Percent)	2.3	62.3	13.3	61.4
PPT - Extended time (Number)	1,854	1,672	182	72
PPT - Extended time (Percent)	2.9	10.7	3.5	7.8
PPT - Frequent breaks (Number)	251	2,367	32	78
PPT - Frequent breaks (Percent)	.4	15.2	.6	8.5
PPT - Number assessed (Number)	62,976	15,610	5,154	920
CBT - Some test items/questions read aloud (Number)	155	824	44	72
CBT - Some test items/questions read aloud (Percent)	.7	12.3	2.6	17
CBT - All test items/questions read aloud (Number)	108	2,191	116	120
CBT - All test items/questions read aloud (Percent)	.5	32.7	6.9	28.4
CBT - Small group setting (Number)	451	4,678	214	308
CBT - Small group setting (Percent)	1.9	69.9	12.8	72.8
CBT - Extended time (Number)	785	2,220	147	139
CBT - Extended time (Percent)	3.3	33.2	8.8	32.9
CBT - Frequent breaks (Number)	201	2,517	31	127
CBT - Frequent breaks (Percent)	.9	37.6	1.9	30
CBT - Number assessed (Number)	23,499	6,692	1,674	423
Total - Some test items/questions read aloud (Number)	1,516	3,419	357	241
Total - Some test items/questions read aloud (Percent)	1.8	15.3	5.2	17.9
Total - All test items/questions read aloud (Number)	295	4,973	206	255
Total - All test items/questions read aloud (Percent)	.3	22.3	3	19
Total - Small group setting (Number)	1,916	14,399	901	873
Total - Small group setting (Percent)	2.2	64.6	13.2	65
Total - Extended time (Number)	2,639	3,892	329	211
Total - Extended time (Percent)	3.1	17.5	4.8	15.7
Total - Frequent breaks (Number)	452	4,884	63	205
Total - Frequent breaks (Percent)	.5	21.9	.9	15.3
Total - Number assessed (Number)	86,475	22,302	6,828	1,343

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2024 PSSA: Mathematics Grade 6

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some test items/questions read aloud (Number)	314	1,612	86	107
PPT - Some test items/questions read aloud (Percent)	.5	11.8	1.8	11.4
PPT - All test items/questions read aloud (Number)	53	1,362	24	65
PPT - All test items/questions read aloud (Percent)	.1	10	.5	6.9
PPT - Small group setting (Number)	917	7,887	436	512
PPT - Small group setting (Percent)	1.6	57.9	9.2	54.5
PPT - Extended time (Number)	1,374	1,257	168	46
PPT - Extended time (Percent)	2.3	9.2	3.5	4.9
PPT - Frequent breaks (Number)	133	1,729	30	80
PPT - Frequent breaks (Percent)	.2	12.7	.6	8.5
PPT - Number assessed (Number)	58,569	13,629	4,746	940
CBT - Some test items/questions read aloud (Number)	53	1,119	30	59
CBT - Some test items/questions read aloud (Percent)	.2	14.5	1.6	13
CBT - All test items/questions read aloud (Number)	60	2,130	81	157
CBT - All test items/questions read aloud (Percent)	.2	27.6	4.2	34.6
CBT - Small group setting (Number)	351	5,389	119	319
CBT - Small group setting (Percent)	1.2	69.9	6.2	70.3
CBT - Extended time (Number)	492	2,430	105	149
CBT - Extended time (Percent)	1.7	31.5	5.5	32.8
CBT - Frequent breaks (Number)	210	2,644	26	138
CBT - Frequent breaks (Percent)	.7	34.3	1.4	30.4
CBT - Number assessed (Number)	28,583	7,705	1,919	454
Total - Some test items/questions read aloud (Number)	367	2,731	116	166
Total - Some test items/questions read aloud (Percent)	.4	12.8	1.7	11.9
Total - All test items/questions read aloud (Number)	113	3,492	105	222
Total - All test items/questions read aloud (Percent)	.1	16.4	1.6	15.9
Total - Small group setting (Number)	1,268	13,276	555	831
Total - Small group setting (Percent)	1.5	62.2	8.3	59.6
Total - Extended time (Number)	1,866	3,687	273	195
Total - Extended time (Percent)	2.1	17.3	4.1	14
Total - Frequent breaks (Number)	343	4,373	56	218
Total - Frequent breaks (Percent)	.4	20.5	.8	15.6
Total - Number assessed (Number)	87,152	21,334	6,665	1,394

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2024 PSSA: Mathematics Grade 7

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some test items/questions read aloud (Number)	86	1,134	41	85
PPT - Some test items/questions read aloud (Percent)	.1	8.5	.9	9.1
PPT - All test items/questions read aloud (Number)	28	900	34	33
PPT - All test items/questions read aloud (Percent)	0	6.8	.7	3.5
PPT - Small group setting (Number)	800	7,711	357	508
PPT - Small group setting (Percent)	1.3	57.9	7.6	54.2
PPT - Extended time (Number)	1,435	1,284	196	74
PPT - Extended time (Percent)	2.4	9.6	4.2	7.9
PPT - Frequent breaks (Number)	91	1,349	21	60
PPT - Frequent breaks (Percent)	.2	10.1	.4	6.4
PPT - Number assessed (Number)	59,767	13,322	4,721	937
CBT - Some test items/questions read aloud (Number)	58	1,231	16	64
CBT - Some test items/questions read aloud (Percent)	.2	15.9	.9	16.1
CBT - All test items/questions read aloud (Number)	35	1,608	61	103
CBT - All test items/questions read aloud (Percent)	.1	20.8	3.4	25.9
CBT - Small group setting (Number)	345	5,274	110	264
CBT - Small group setting (Percent)	1.2	68.1	6.2	66.5
CBT - Extended time (Number)	605	2,367	111	143
CBT - Extended time (Percent)	2.1	30.6	6.2	36
CBT - Frequent breaks (Number)	133	2,095	14	98
CBT - Frequent breaks (Percent)	.5	27.1	.8	24.7
CBT - Number assessed (Number)	28,866	7,739	1,786	397
Total - Some test items/questions read aloud (Number)	144	2,365	57	149
Total - Some test items/questions read aloud (Percent)	.2	11.2	.9	11.2
Total - All test items/questions read aloud (Number)	63	2,508	95	136
Total - All test items/questions read aloud (Percent)	.1	11.9	1.5	10.2
Total - Small group setting (Number)	1,145	12,985	467	772
Total - Small group setting (Percent)	1.3	61.7	7.2	57.9
Total - Extended time (Number)	2,040	3,651	307	217
Total - Extended time (Percent)	2.3	17.3	4.7	16.3
Total - Frequent breaks (Number)	224	3,444	35	158
Total - Frequent breaks (Percent)	.3	16.4	.5	11.8
Total - Number assessed (Number)	88,633	21,061	6,507	1,334

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2024 PSSA: Mathematics Grade 8

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some test items/questions read aloud (Number)	79	1,028	52	65
PPT - Some test items/questions read aloud (Percent)	.1	7.8	1.1	7.4
PPT - All test items/questions read aloud (Number)	27	714	17	29
PPT - All test items/questions read aloud (Percent)	0	5.4	.4	3.3
PPT - Small group setting (Number)	795	7,537	379	443
PPT - Small group setting (Percent)	1.4	57.2	8.1	50.5
PPT - Extended time (Number)	598	1,205	102	58
PPT - Extended time (Percent)	1	9.2	2.2	6.6
PPT - Frequent breaks (Number)	72	1,231	15	47
PPT - Frequent breaks (Percent)	.1	9.3	.3	5.4
PPT - Number assessed (Number)	58,708	13,169	4,690	878
CBT - Some test items/questions read aloud (Number)	34	1,235	18	87
CBT - Some test items/questions read aloud (Percent)	.1	16.4	1	21.1
CBT - All test items/questions read aloud (Number)	23	1,298	51	82
CBT - All test items/questions read aloud (Percent)	.1	17.2	2.9	19.9
CBT - Small group setting (Number)	346	5,140	93	316
CBT - Small group setting (Percent)	1.2	68.1	5.3	76.5
CBT - Extended time (Number)	381	2,344	96	146
CBT - Extended time (Percent)	1.3	31.1	5.5	35.4
CBT - Frequent breaks (Number)	109	2,015	16	116
CBT - Frequent breaks (Percent)	.4	26.7	.9	28.1
CBT - Number assessed (Number)	29,549	7,548	1,740	413
Total - Some test items/questions read aloud (Number)	113	2,263	70	152
Total - Some test items/questions read aloud (Percent)	.1	10.9	1.1	11.8
Total - All test items/questions read aloud (Number)	50	2,012	68	111
Total - All test items/questions read aloud (Percent)	.1	9.7	1.1	8.6
Total - Small group setting (Number)	1,141	12,677	472	759
Total - Small group setting (Percent)	1.3	61.2	7.3	58.8
Total - Extended time (Number)	979	3,549	198	204
Total - Extended time (Percent)	1.1	17.1	3.1	15.8
Total - Frequent breaks (Number)	181	3,246	31	163
Total - Frequent breaks (Percent)	.2	15.7	.5	12.6
Total - Number assessed (Number)	88,257	20,717	6,430	1,291

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2024 PSSA: English Language Arts Grade 3

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	1,056	1,720	211	114
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	1.6	10.5	4	13.7
PPT - All test items/questions read aloud (Number)	6	26	3	1
PPT - All test items/questions read aloud (Percent)	0	.2	.1	.1
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	362	3,119	143	131
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.6	19.1	2.7	15.7
PPT - Small group setting (Number)	1,975	9,283	1,005	544
PPT - Small group setting (Percent)	3.1	56.9	18.9	65.3
PPT - Extended time (Number)	2,495	1,993	207	96
PPT - Extended time (Percent)	3.9	12.2	3.9	11.5
PPT - Frequent breaks (Number)	297	2,597	34	123
PPT - Frequent breaks (Percent)	.5	15.9	.6	14.8
PPT - Number assessed (Number)	64,062	16,315	5,312	833
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	82	290	73	38
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.4	5.5	4.4	11.1
CBT - All test items/questions read aloud (Number)	0	0	0	0
CBT - All test items/questions read aloud (Percent)	0	0	0	0
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	122	840	72	57
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.6	15.8	4.4	16.6
CBT - Small group setting (Number)	450	3,265	360	240
CBT - Small group setting (Percent)	2.4	61.4	21.9	70
CBT - Extended time (Number)	661	1,713	161	110
CBT - Extended time (Percent)	3.5	32.2	9.8	32.1
CBT - Frequent breaks (Number)	166	1,763	54	91
CBT - Frequent breaks (Percent)	.9	33.1	3.3	26.5
CBT - Number assessed (Number)	18,926	5,320	1,641	343
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	1,138	2,010	284	152
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	1.4	9.3	4.1	12.9
Total - All test items/questions read aloud (Number)	6	26	3	1

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
Total - All test items/questions read aloud (Percent)	0	.2	.1	.1
Total - All conventions questions/ text-dependent analysis prompts read aloud (Number)	484	3,959	215	188
Total - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.6	18.3	3.1	16
Total - Small group setting (Number)	2,425	12,548	1,365	784
Total - Small group setting (Percent)	2.9	58	19.6	66.7
Total - Extended time (Number)	3,156	3,706	368	206
Total - Extended time (Percent)	3.8	17.1	5.3	17.5
Total - Frequent breaks (Number)	463	4,360	88	214
Total - Frequent breaks (Percent)	.6	20.2	1.3	18.2
Total - Number assessed (Number)	82,988	21,635	6,953	1,176

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2024 PSSA: English Language Arts Grade 4

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	1,158	2,538	288	164
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	1.8	14.9	5.8	16.4
PPT - All test items/questions read aloud (Number)	3	38	1	3
PPT - All test items/questions read aloud (Percent)	0	.2	0	.3
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	241	3,107	122	161
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.4	18.2	2.5	16.1
PPT - Small group setting (Number)	1,720	10,637	937	678
PPT - Small group setting (Percent)	2.7	62.2	19	68
PPT - Extended time (Number)	5,325	2,286	400	116
PPT - Extended time (Percent)	8.2	13.4	8.1	11.6
PPT - Frequent breaks (Number)	300	2,942	61	146
PPT - Frequent breaks (Percent)	.5	17.2	1.2	14.6
PPT - Number assessed (Number)	64,555	17,088	4,927	997
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	240	567	102	49
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	1.1	9.2	6.7	13.3
CBT - All test items/questions read aloud (Number)	0	0	0	0
CBT - All test items/questions read aloud (Percent)	0	0	0	0
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	164	1,702	100	109
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.8	27.5	6.5	29.5
CBT - Small group setting (Number)	447	4,184	293	271
CBT - Small group setting (Percent)	2.1	67.7	19.2	73.4
CBT - Extended time (Number)	1,112	2,085	155	121
CBT - Extended time (Percent)	5.3	33.7	10.1	32.8
CBT - Frequent breaks (Number)	182	2,251	43	126
CBT - Frequent breaks (Percent)	.9	36.4	2.8	34.1
CBT - Number assessed (Number)	21,052	6,182	1,529	369
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	1,398	3,105	390	213
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	1.6	13.3	6	15.6
Total - All test items/questions read aloud (Number)	3	38	1	3

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
Total - All test items/questions read aloud (Percent)	0	.2	0	.3
Total - All conventions questions/ text-dependent analysis prompts read aloud (Number)	405	4,809	222	270
Total - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.5	20.7	3.4	19.8
Total - Small group setting (Number)	2,167	14,821	1,230	949
Total - Small group setting (Percent)	2.5	63.7	19.1	69.5
Total - Extended time (Number)	6,437	4,371	555	237
Total - Extended time (Percent)	7.5	18.8	8.6	17.3
Total - Frequent breaks (Number)	482	5,193	104	272
Total - Frequent breaks (Percent)	.6	22.3	1.6	19.9
Total - Number assessed (Number)	85,607	23,270	6,456	1,366

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2024 PSSA: English Language Arts Grade 5

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	752	2,076	207	126
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	1.2	13.2	4	13.5
PPT - All test items/questions read aloud (Number)	2	35	2	0
PPT - All test items/questions read aloud (Percent)	0	.2	0	0
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	139	2,402	63	116
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.2	15.2	1.2	12.4
PPT - Small group setting (Number)	1,418	9,991	645	600
PPT - Small group setting (Percent)	2.2	63.3	12.5	64.2
PPT - Extended time (Number)	4,449	2,005	359	98
PPT - Extended time (Percent)	7	12.7	7	10.5
PPT - Frequent breaks (Number)	280	2,639	35	94
PPT - Frequent breaks (Percent)	.4	16.7	.7	10.1
PPT - Number assessed (Number)	63,385	15,779	5,152	934
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	130	653	59	61
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.6	9.9	3.5	15
CBT - All test items/questions read aloud (Number)	0	0	0	0
CBT - All test items/questions read aloud (Percent)	0	0	0	0
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	102	1,826	85	95
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.4	27.8	5.1	23.3
CBT - Small group setting (Number)	443	4,605	232	298
CBT - Small group setting (Percent)	1.9	70	13.9	73.2
CBT - Extended time (Number)	1,169	2,245	151	135
CBT - Extended time (Percent)	5.1	34.1	9.1	33.2
CBT - Frequent breaks (Number)	198	2,475	30	120
CBT - Frequent breaks (Percent)	.9	37.6	1.8	29.5
CBT - Number assessed (Number)	23,029	6,580	1,665	407
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	882	2,729	266	187
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	1	12.2	3.9	13.9
Total - All test items/questions read aloud (Number)	2	35	2	0

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
Total - All test items/questions read aloud (Percent)	0	.2	0	0
Total - All conventions questions/ text-dependent analysis prompts read aloud (Number)	241	4,228	148	211
Total - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.3	18.9	2.2	15.7
Total - Small group setting (Number)	1,861	14,596	877	898
Total - Small group setting (Percent)	2.2	65.3	12.9	67
Total - Extended time (Number)	5,618	4,250	510	233
Total - Extended time (Percent)	6.5	19	7.5	17.4
Total - Frequent breaks (Number)	478	5,114	65	214
Total - Frequent breaks (Percent)	.6	22.9	1	16
Total - Number assessed (Number)	86,414	22,359	6,817	1,341

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2024 PSSA: English Language Arts Grade 6

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	169	1,361	62	77
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.3	10	1.3	8.1
PPT - All test items/questions read aloud (Number)	3	23	2	4
PPT - All test items/questions read aloud (Percent)	0	.2	0	.4
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	67	1,231	26	61
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	9	.6	6.5
PPT - Small group setting (Number)	910	8,133	393	526
PPT - Small group setting (Percent)	1.6	59.6	8.4	55.7
PPT - Extended time (Number)	3,941	1,719	328	81
PPT - Extended time (Percent)	6.8	12.6	7	8.6
PPT - Frequent breaks (Number)	153	1,898	19	84
PPT - Frequent breaks (Percent)	.3	13.9	.4	8.9
PPT - Number assessed (Number)	58,308	13,655	4,669	945
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	67	1,025	53	60
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.2	13.2	2.7	13.3
CBT - All test items/questions read aloud (Number)	0	0	0	0
CBT - All test items/questions read aloud (Percent)	0	0	0	0
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	56	1,874	76	135
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.2	24.1	3.8	30
CBT - Small group setting (Number)	346	5,387	152	308
CBT - Small group setting (Percent)	1.2	69.2	7.7	68.4
CBT - Extended time (Number)	956	2,493	133	144
CBT - Extended time (Percent)	3.3	32	6.7	32
CBT - Frequent breaks (Number)	199	2,669	28	131
CBT - Frequent breaks (Percent)	.7	34.3	1.4	29.1
CBT - Number assessed (Number)	28,913	7,780	1,986	450
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	236	2,386	115	137
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.3	11.1	1.7	9.8
Total - All test items/questions read aloud (Number)	3	23	2	4

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
Total - All test items/questions read aloud (Percent)	0	.2	0	.4
Total - All conventions questions/ text-dependent analysis prompts read aloud (Number)	123	3,105	102	196
Total - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	14.5	1.5	14.1
Total - Small group setting (Number)	1,256	13,520	545	834
Total - Small group setting (Percent)	1.4	63.1	8.2	59.8
Total - Extended time (Number)	4,897	4,212	461	225
Total - Extended time (Percent)	5.6	19.7	6.9	16.1
Total - Frequent breaks (Number)	352	4,567	47	215
Total - Frequent breaks (Percent)	.4	21.3	.7	15.4
Total - Number assessed (Number)	87,221	21,435	6,655	1,395

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2024 PSSA: English Language Arts Grade 7

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	60	966	27	55
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	7.3	.6	5.9
PPT - All test items/questions read aloud (Number)	2	20	2	0
PPT - All test items/questions read aloud (Percent)	0	.2	0	0
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	17	723	19	41
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	0	5.5	.4	4.4
PPT - Small group setting (Number)	796	7,856	344	504
PPT - Small group setting (Percent)	1.4	59.5	7.5	53.9
PPT - Extended time (Number)	3,005	1,495	244	100
PPT - Extended time (Percent)	5.1	11.3	5.3	10.7
PPT - Frequent breaks (Number)	112	1,440	9	63
PPT - Frequent breaks (Percent)	.2	10.9	.2	6.7
PPT - Number assessed (Number)	58,500	13,210	4,574	935
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	52	1,145	34	64
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.2	14.3	1.8	16
CBT - All test items/questions read aloud (Number)	0	0	0	0
CBT - All test items/questions read aloud (Percent)	0	0	0	0
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	32	1,357	51	87
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	17	2.7	21.7
CBT - Small group setting (Number)	351	5,439	151	265
CBT - Small group setting (Percent)	1.2	68	7.9	66.1
CBT - Extended time (Number)	598	2,520	105	147
CBT - Extended time (Percent)	2	31.5	5.5	36.7
CBT - Frequent breaks (Number)	151	2,193	18	100
CBT - Frequent breaks (Percent)	.5	27.4	.9	24.9
CBT - Number assessed (Number)	30,243	7,996	1,907	401
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	112	2,111	61	119
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	10	.9	8.9
Total - All test items/questions read aloud (Number)	2	20	2	0

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
Total - All test items/questions read aloud (Percent)	0	.2	0	0
Total - All conventions questions/ text-dependent analysis prompts read aloud (Number)	49	2,080	70	128
Total - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	9.8	1.1	9.6
Total - Small group setting (Number)	1,147	13,295	495	769
Total - Small group setting (Percent)	1.3	62.7	7.6	57.6
Total - Extended time (Number)	3,603	4,015	349	247
Total - Extended time (Percent)	4.1	18.9	5.4	18.5
Total - Frequent breaks (Number)	263	3,633	27	163
Total - Frequent breaks (Percent)	.3	17.1	.4	12.2
Total - Number assessed (Number)	88,743	21,206	6,481	1,336

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2024 PSSA: English Language Arts Grade 8

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	62	861	33	50
PPT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	6.6	.7	5.7
PPT - All test items/questions read aloud (Number)	3	20	1	2
PPT - All test items/questions read aloud (Percent)	0	.2	0	.2
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	35	673	11	38
PPT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	5.1	.2	4.4
PPT - Small group setting (Number)	818	7,554	364	442
PPT - Small group setting (Percent)	1.4	57.7	7.9	50.7
PPT - Extended time (Number)	2,080	1,468	203	86
PPT - Extended time (Percent)	3.6	11.2	4.4	9.9
PPT - Frequent breaks (Number)	95	1,336	10	60
PPT - Frequent breaks (Percent)	.2	10.2	.2	6.9
PPT - Number assessed (Number)	57,342	13,093	4,591	872
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	31	1,123	39	81
CBT - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	14.4	2.1	19.1
CBT - All test items/questions read aloud (Number)	0	0	0	0
CBT - All test items/questions read aloud (Percent)	0	0	0	0
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Number)	18	1,082	34	75
CBT - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	13.9	1.8	17.7
CBT - Small group setting (Number)	356	5,264	123	316
CBT - Small group setting (Percent)	1.1	67.4	6.7	74.7
CBT - Extended time (Number)	509	2,552	104	166
CBT - Extended time (Percent)	1.6	32.7	5.6	39.2
CBT - Frequent breaks (Number)	119	2,112	21	124
CBT - Frequent breaks (Percent)	.4	27	1.1	29.3
CBT - Number assessed (Number)	31,033	7,808	1,848	423
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Number)	93	1,984	72	131
Total - Some conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	9.5	1.1	10.1
Total - All test items/questions read aloud (Number)	3	20	1	2

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
Total - All test items/questions read aloud (Percent)	0	.2	0	.2
Total - All conventions questions/ text-dependent analysis prompts read aloud (Number)	53	1,755	45	113
Total - All conventions questions/ text-dependent analysis prompts read aloud (Percent)	.1	8.4	.7	8.7
Total - Small group setting (Number)	1,174	12,818	487	758
Total - Small group setting (Percent)	1.3	61.3	7.6	58.5
Total - Extended time (Number)	2,589	4,020	307	252
Total - Extended time (Percent)	2.9	19.2	4.8	19.5
Total - Frequent breaks (Number)	214	3,448	31	184
Total - Frequent breaks (Percent)	.2	16.5	.5	14.2
Total - Number assessed (Number)	88,375	20,901	6,439	1,295

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2024 PSSA: Science Grade 4

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some test items/questions read aloud (Number)	1,916	3,002	450	220
PPT - Some test items/questions read aloud (Percent)	3.1	18.3	9.6	23.5
PPT - All test items/questions read aloud (Number)	334	3,796	159	179
PPT - All test items/questions read aloud (Percent)	.5	23.1	3.4	19.1
PPT - Small group setting (Number)	1,595	9,914	864	596
PPT - Small group setting (Percent)	2.6	60.4	18.4	63.5
PPT - Extended time (Number)	1,205	1,466	98	71
PPT - Extended time (Percent)	1.9	8.9	2.1	7.6
PPT - Frequent breaks (Number)	238	2,444	44	100
PPT - Frequent breaks (Percent)	.4	14.9	.9	10.7
PPT - Number assessed (Number)	62,339	16,426	4,704	938
CBT - Some test items/questions read aloud (Number)	294	729	95	65
CBT - Some test items/questions read aloud (Percent)	1.3	10.8	5.3	15.2
CBT - All test items/questions read aloud (Number)	188	2,205	175	153
CBT - All test items/questions read aloud (Percent)	.8	32.7	9.8	35.7
CBT - Small group setting (Number)	489	4,406	339	305
CBT - Small group setting (Percent)	2.1	65.4	19.1	71.3
CBT - Extended time (Number)	552	2,048	139	126
CBT - Extended time (Percent)	2.4	30.4	7.8	29.4
CBT - Frequent breaks (Number)	173	2,293	51	133
CBT - Frequent breaks (Percent)	.7	34	2.9	31.1
CBT - Number assessed (Number)	23,376	6,739	1,778	428
Total - Some test items/questions read aloud (Number)	2,210	3,731	545	285
Total - Some test items/questions read aloud (Percent)	2.6	16.1	8.4	20.9
Total - All test items/questions read aloud (Number)	522	6,001	334	332
Total - All test items/questions read aloud (Percent)	.6	25.9	5.2	24.3
Total - Small group setting (Number)	2,084	14,320	1,203	901
Total - Small group setting (Percent)	2.4	61.8	18.6	66
Total - Extended time (Number)	1,757	3,514	237	197
Total - Extended time (Percent)	2	15.2	3.7	14.4
Total - Frequent breaks (Number)	411	4,737	95	233
Total - Frequent breaks (Percent)	.5	20.4	1.5	17.1
Total - Number assessed (Number)	85,715	23,165	6,482	1,366

Incidence of IEP and EL Students Receiving Selected Accommodations on the 2024 PSSA: Science Grade 8

Accommodation Received by Administration Mode	General Education (non-IEP or EL)	IEP and non-EL	EL and non-IEP	Both IEP and EL
PPT - Some test items/questions read aloud (Number)	85	799	46	51
PPT - Some test items/questions read aloud (Percent)	.2	6.5	1	6.1
PPT - All test items/questions read aloud (Number)	30	731	16	33
PPT - All test items/questions read aloud (Percent)	.1	5.9	.4	3.9
PPT - Small group setting (Number)	697	6,735	350	398
PPT - Small group setting (Percent)	1.3	54.7	7.7	47.3
PPT - Extended time (Number)	410	998	69	52
PPT - Extended time (Percent)	.8	8.1	1.5	6.2
PPT - Frequent breaks (Number)	62	1,030	14	53
PPT - Frequent breaks (Percent)	.1	8.4	.3	6.3
PPT - Number assessed (Number)	54,058	12,323	4,534	841
CBT - Some test items/questions read aloud (Number)	30	1,263	23	87
CBT - Some test items/questions read aloud (Percent)	.1	15.3	1.2	19.6
CBT - All test items/questions read aloud (Number)	23	1,335	55	87
CBT - All test items/questions read aloud (Percent)	.1	16.2	3	19.6
CBT - Small group setting (Number)	361	5,387	100	328
CBT - Small group setting (Percent)	1.1	65.3	5.4	73.7
CBT - Extended time (Number)	331	2,490	98	160
CBT - Extended time (Percent)	1	30.2	5.3	36
CBT - Frequent breaks (Number)	113	2,114	16	123
CBT - Frequent breaks (Percent)	.3	25.6	.9	27.6
CBT - Number assessed (Number)	33,935	8,251	1,860	445
Total - Some test items/questions read aloud (Number)	115	2,062	69	138
Total - Some test items/questions read aloud (Percent)	.1	10	1.1	10.7
Total - All test items/questions read aloud (Number)	53	2,066	71	120
Total - All test items/questions read aloud (Percent)	.1	10	1.1	9.3
Total - Small group setting (Number)	1,058	12,122	450	726
Total - Small group setting (Percent)	1.2	58.9	7	56.5
Total - Extended time (Number)	741	3,488	167	212
Total - Extended time (Percent)	.8	17	2.6	16.5
Total - Frequent breaks (Number)	175	3,144	30	176
Total - Frequent breaks (Percent)	.2	15.3	.5	13.7
Total - Number assessed (Number)	87,993	20,574	6,394	1,286

APPENDIX M: CUT SCORES AND SCALE TRANSFORMATIONS

Subject	Grade	Scaling Intercept	Scaling Slope	Lowest Observed Scaled Score	Scaled Score Cut: Bel. Basic/Basic	Scaled Score Cut: Basic/ Prof.	Scaled Score Cut: Prof./ Adv.
Mathematics	3	956.31	100	600	923	1000	1110
Mathematics	4	981.92	100	600	908	1000	1107
Mathematics	5	961.69	100	600	901	1000	1113
Mathematics	6	931.41	100	600	897	1000	1105
Mathematics	7	956.16	100	600	904	1000	1109
Mathematics	8	951.76	100	600	906	1000	1108
ELA	3	962.47	100	600	905	1000	1143
ELA	4	957.49	100	600	887	1000	1107
ELA	5	958.32	100	600	893	1000	1139
ELA	6	940.78	100	600	875	1000	1115
ELA	7	947.65	100	600	845	1000	1130
ELA	8	961.11	100	600	886	1000	1130
Science	4	1225.65	176.75	1050	1150	1275	1483
Science	8	1196.64	191.54	925	1150	1275	1464

APPENDIX N: RAW-TO-SCALED SCORE CONVERSION TABLES

The raw-to-scaled score conversion tables are presented for each subject and grade level. For each raw score point, the IRT difficulty estimates, standard errors (SE), frequencies, percent, cumulative frequencies, cumulative percent and percentiles were estimated using WINSTEPS (Linacre, 2019). Percentiles were calculated as the cumulative percent for the score below added to half the frequency percent for the current score (half-rounded) and then constrained to the range 1–99 for non-zero frequencies (Linacre, 2009).

Grade 3 Mathematics

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-4.9149	1.833	600	183	3	0.0	3	0.0	1
1	-3.6925	1.0131	600	101	15	0.0	18	0.0	1
2	-2.9731	0.7254	659	73	24	0.0	42	0.0	1
3	-2.5413	0.5997	702	60	78	0.1	120	0.1	1
4	-2.2273	0.5258	734	53	203	0.2	323	0.3	1
5	-1.9775	0.4762	759	48	367	0.3	690	0.6	1
6	-1.7683	0.4402	779	44	750	0.7	1440	1.3	1
7	-1.5868	0.4128	798	41	1140	1.0	2580	2.3	2
8	-1.4254	0.3913	814	39	1627	1.4	4207	3.7	3
9	-1.2792	0.374	828	37	2162	1.9	6369	5.6	5
10	-1.1448	0.3598	842	36	2511	2.2	8880	7.9	7
11	-1.0197	0.348	854	35	2729	2.4	11609	10.3	9
12	-0.9021	0.3381	866	34	2990	2.6	14599	12.9	12
13	-0.7907	0.3297	877	33	2991	2.7	17590	15.6	14
14	-0.6844	0.3227	888	32	3037	2.7	20627	18.3	17
15	-0.5822	0.3167	898	32	3041	2.7	23668	21.0	20
16	-0.4836	0.3116	908	31	3005	2.7	26673	23.6	22
17	-0.3879	0.3072	918	31	2793	2.5	29466	26.1	25
18	-0.2947	0.3036	927	30	2862	2.5	32328	28.6	27
19	-0.2035	0.3005	936	30	2809	2.5	35137	31.1	30
20	-0.114	0.298	945	30	2769	2.5	37906	33.6	32
21	-0.0258	0.2959	954	30	2742	2.4	40648	36.0	35
22	0.0612	0.2943	962	29	2839	2.5	43487	38.5	37
23	0.1475	0.2931	971	29	2719	2.4	46206	40.9	40
24	0.2331	0.2923	980	29	2868	2.5	49074	43.5	42
25	0.3185	0.292	988	29	2903	2.6	51977	46.1	45
26	0.4037	0.292	997	29	2768	2.5	54745	48.5	47
27	0.489	0.2924	1005	29	2986	2.6	57731	51.2	50
28	0.5747	0.2932	1014	29	2897	2.6	60628	53.7	52
29	0.661	0.2944	1022	29	2916	2.6	63544	56.3	55

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
30	0.7481	0.296	1031	30	2997	2.7	66541	59.0	58
31	0.8363	0.298	1040	30	2878	2.6	69419	61.5	60
32	0.9259	0.3006	1049	30	3005	2.7	72424	64.2	63
33	1.0171	0.3037	1058	30	2839	2.5	75263	66.7	65
34	1.1104	0.3073	1067	31	2929	2.6	78192	69.3	68
35	1.2062	0.3116	1077	31	2866	2.5	81058	71.8	71
36	1.3048	0.3166	1087	32	2866	2.5	83924	74.4	73
37	1.4068	0.3223	1097	32	2865	2.5	86789	76.9	76
38	1.5128	0.329	1108	33	2779	2.5	89568	79.4	78
39	1.6236	0.3368	1119	34	2793	2.5	92361	81.8	81
40	1.74	0.3458	1130	35	2725	2.4	95086	84.3	83
41	1.8632	0.3564	1143	36	2598	2.3	97684	86.6	85
42	1.9946	0.3689	1156	37	2474	2.2	100158	88.8	88
43	2.1361	0.3837	1170	38	2408	2.1	102566	90.9	90
44	2.29	0.4016	1185	40	2216	2.0	104782	92.9	92
45	2.4601	0.4237	1202	42	1901	1.7	106683	94.5	94
46	2.6511	0.4515	1221	45	1824	1.6	108507	96.2	95
47	2.871	0.4878	1243	49	1545	1.4	110052	97.5	97
48	3.1326	0.5376	1270	54	1226	1.1	111278	98.6	98
49	3.46	0.6114	1302	61	824	0.7	112102	99.3	99
50	3.9069	0.7365	1347	74	499	0.4	112601	99.8	99
51	4.6437	1.0223	1421	102	192	0.2	112793	100.0	99
52	5.88	1.8387	1544	184	52	0.0	112845	100.0	99

Grade 4 Mathematics

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.4205	1.8354	600	184	0	0.0	0	0.0	0
1	-4.1919	1.0175	600	102	3	0.0	3	0.0	1
2	-3.4635	0.7316	636	73	6	0.0	9	0.0	1
3	-3.0229	0.607	680	61	27	0.0	36	0.0	1
4	-2.7	0.534	712	53	66	0.1	102	0.1	1
5	-2.4417	0.485	738	49	184	0.2	286	0.2	1
6	-2.2241	0.4495	760	45	351	0.3	637	0.5	1
7	-2.0345	0.4223	778	42	701	0.6	1338	1.1	1
8	-1.8654	0.4008	795	40	1100	0.9	2438	2.1	2
9	-1.7119	0.3833	811	38	1633	1.4	4071	3.5	3
10	-1.5706	0.3689	825	37	2249	1.9	6320	5.4	4
11	-1.4391	0.3567	838	36	2679	2.3	8999	7.7	7
12	-1.3156	0.3464	850	35	3047	2.6	12046	10.3	9
13	-1.1988	0.3375	862	34	3314	2.8	15360	13.1	12
14	-1.0875	0.3299	873	33	3397	2.9	18757	16.1	15
15	-0.9809	0.3233	884	32	3518	3.0	22275	19.1	18
16	-0.8783	0.3175	894	32	3431	2.9	25706	22.0	21
17	-0.7791	0.3126	904	31	3344	2.9	29050	24.9	23
18	-0.6827	0.3083	914	31	3271	2.8	32321	27.7	26
19	-0.5888	0.3046	923	30	3154	2.7	35475	30.4	29
20	-0.497	0.3015	932	30	3224	2.8	38699	33.1	32
21	-0.4069	0.2989	941	30	3177	2.7	41876	35.8	34
22	-0.3182	0.2968	950	30	3042	2.6	44918	38.4	37
23	-0.2306	0.2952	959	30	3092	2.6	48010	41.1	40
24	-0.1439	0.294	968	29	3027	2.6	51037	43.7	42
25	-0.0577	0.2932	976	29	3008	2.6	54045	46.2	45
26	0.0281	0.2929	985	29	2941	2.5	56986	48.8	48
27	0.1139	0.293	993	29	2981	2.6	59967	51.3	50
28	0.1999	0.2935	1002	29	2945	2.5	62912	53.8	53
29	0.2863	0.2945	1011	29	3026	2.6	65938	56.4	55
30	0.3735	0.296	1019	30	3002	2.6	68940	59.0	58
31	0.4616	0.2979	1028	30	2936	2.5	71876	61.5	60
32	0.5511	0.3003	1037	30	2986	2.6	74862	64.1	63
33	0.6421	0.3033	1046	30	2947	2.5	77809	66.6	65
34	0.7352	0.3069	1055	31	2935	2.5	80744	69.1	68
35	0.8306	0.3111	1065	31	2798	2.4	83542	71.5	70
36	0.9289	0.316	1075	32	2870	2.5	86412	73.9	73

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	1.0305	0.3217	1085	32	2793	2.4	89205	76.3	75
38	1.1361	0.3284	1096	33	2770	2.4	91975	78.7	78
39	1.2464	0.3361	1107	34	2733	2.3	94708	81.0	80
40	1.3624	0.3452	1118	35	2664	2.3	97372	83.3	82
41	1.4851	0.3558	1130	36	2642	2.3	100014	85.6	84
42	1.6161	0.3683	1144	37	2571	2.2	102585	87.8	87
43	1.7571	0.3832	1158	38	2511	2.1	105096	89.9	89
44	1.9108	0.4013	1173	40	2365	2.0	107461	92.0	91
45	2.0806	0.4236	1190	42	2226	1.9	109687	93.9	93
46	2.2717	0.4517	1209	45	1958	1.7	111645	95.5	95
47	2.492	0.4884	1231	49	1728	1.5	113373	97.0	96
48	2.7544	0.5386	1257	54	1381	1.2	114754	98.2	98
49	3.0832	0.6128	1290	61	1009	0.9	115763	99.1	99
50	3.5321	0.7381	1335	74	648	0.6	116411	99.6	99
51	4.2716	1.0237	1409	102	339	0.3	116750	99.9	99
52	5.5101	1.8395	1533	184	112	0.1	116862	100.0	99

Grade 5 Mathematics

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.1321	1.8352	600	184	0	0.0	0	0.0	0
1	-3.904	1.017	600	102	3	0.0	3	0.0	1
2	-3.1768	0.7306	644	73	11	0.0	14	0.0	1
3	-2.7379	0.6054	688	61	55	0.0	69	0.1	1
4	-2.4173	0.5316	720	53	131	0.1	200	0.2	1
5	-2.1618	0.4819	746	48	308	0.3	508	0.4	1
6	-1.9475	0.4455	767	45	629	0.5	1137	1.0	1
7	-1.7617	0.4176	786	42	1065	0.9	2202	1.9	1
8	-1.5967	0.3954	802	40	1588	1.4	3790	3.2	3
9	-1.4476	0.3773	817	38	2242	1.9	6032	5.2	4
10	-1.311	0.3623	831	36	2739	2.3	8771	7.5	6
11	-1.1844	0.3497	843	35	3119	2.7	11890	10.2	9
12	-1.0659	0.3391	855	34	3238	2.8	15128	12.9	12
13	-0.954	0.33	866	33	3486	3.0	18614	15.9	14
14	-0.8477	0.3223	877	32	3683	3.2	22297	19.1	18
15	-0.746	0.3157	887	32	3567	3.1	25864	22.1	21
16	-0.6481	0.3101	897	31	3699	3.2	29563	25.3	24
17	-0.5535	0.3054	906	31	3449	3.0	33012	28.3	27
18	-0.4615	0.3014	916	30	3583	3.1	36595	31.3	30
19	-0.3716	0.2982	925	30	3457	3.0	40052	34.3	33
20	-0.2835	0.2956	933	30	3364	2.9	43416	37.2	36
21	-0.1968	0.2935	942	29	3447	3.0	46863	40.1	39
22	-0.1111	0.292	951	29	3384	2.9	50247	43.0	42
23	-0.0261	0.291	959	29	3401	2.9	53648	45.9	44
24	0.0584	0.2905	968	29	3266	2.8	56914	48.7	47
25	0.1427	0.2903	976	29	3329	2.8	60243	51.6	50
26	0.2271	0.2906	984	29	3308	2.8	63551	54.4	53
27	0.3117	0.2913	993	29	3266	2.8	66817	57.2	56
28	0.3968	0.2924	1001	29	3114	2.7	69931	59.9	59
29	0.4827	0.2938	1010	29	3076	2.6	73007	62.5	61
30	0.5695	0.2956	1019	30	3031	2.6	76038	65.1	64
31	0.6576	0.2978	1027	30	2950	2.5	78988	67.6	66
32	0.747	0.3005	1036	30	2923	2.5	81911	70.1	69
33	0.8382	0.3035	1046	30	2768	2.4	84679	72.5	71
34	0.9314	0.307	1055	31	2739	2.3	87418	74.8	74
35	1.0269	0.3111	1064	31	2583	2.2	90001	77.0	76
36	1.125	0.3157	1074	32	2485	2.1	92486	79.2	78

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	1.2264	0.321	1084	32	2426	2.1	94912	81.2	80
38	1.3313	0.3271	1095	33	2297	2.0	97209	83.2	82
39	1.4406	0.3341	1106	33	2243	1.9	99452	85.1	84
40	1.5549	0.3423	1117	34	2146	1.8	101598	87.0	86
41	1.6753	0.3519	1129	35	1953	1.7	103551	88.6	88
42	1.8031	0.3633	1142	36	1917	1.6	105468	90.3	89
43	1.94	0.377	1156	38	1802	1.5	107270	91.8	91
44	2.0883	0.3937	1171	39	1638	1.4	108908	93.2	93
45	2.2512	0.4144	1187	41	1571	1.3	110479	94.6	94
46	2.4337	0.441	1205	44	1391	1.2	111870	95.8	95
47	2.6432	0.4761	1226	48	1296	1.1	113166	96.9	96
48	2.8924	0.5249	1251	52	1217	1.0	114383	97.9	97
49	3.2051	0.5981	1282	60	987	0.8	115370	98.7	98
50	3.6343	0.7234	1325	72	735	0.6	116105	99.4	99
51	4.3502	1.0111	1397	101	496	0.4	116601	99.8	99
52	5.5695	1.8317	1519	183	233	0.2	116834	100.0	99

Grade 6 Mathematics

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.1473	1.8389	600	184	1	0.0	1	0.0	1
1	-3.9102	1.0229	600	102	4	0.0	5	0.0	1
2	-3.1719	0.7376	614	74	10	0.0	15	0.0	1
3	-2.7234	0.6128	659	61	23	0.0	38	0.0	1
4	-2.3942	0.5393	692	54	96	0.1	134	0.1	1
5	-2.1307	0.4897	718	49	236	0.2	370	0.3	1
6	-1.9089	0.4536	741	45	508	0.4	878	0.8	1
7	-1.716	0.4259	760	43	916	0.8	1794	1.5	1
8	-1.544	0.404	777	40	1533	1.3	3327	2.9	2
9	-1.3882	0.3862	793	39	2205	1.9	5532	4.8	4
10	-1.2448	0.3714	807	37	2909	2.5	8441	7.3	6
11	-1.1116	0.359	820	36	3606	3.1	12047	10.4	9
12	-0.9865	0.3485	833	35	4039	3.5	16086	13.8	12
13	-0.8683	0.3395	845	34	4237	3.6	20323	17.5	16
14	-0.7557	0.3318	856	33	4322	3.7	24645	21.2	19
15	-0.6479	0.3251	867	33	4132	3.6	28777	24.7	23
16	-0.5441	0.3193	877	32	4208	3.6	32985	28.3	27
17	-0.4437	0.3144	887	31	3899	3.4	36884	31.7	30
18	-0.3463	0.3101	897	31	3751	3.2	40635	34.9	33
19	-0.2512	0.3065	906	31	3440	3.0	44075	37.9	36
20	-0.1582	0.3034	916	30	3343	2.9	47418	40.8	39
21	-0.067	0.3009	925	30	3225	2.8	50643	43.5	42
22	0.0229	0.2989	934	30	3037	2.6	53680	46.1	45
23	0.1118	0.2973	943	30	2921	2.5	56601	48.6	47
24	0.1998	0.2961	951	30	2923	2.5	59524	51.2	50
25	0.2872	0.2954	960	30	2776	2.4	62300	53.5	52
26	0.3744	0.2951	969	30	2709	2.3	65009	55.9	55
27	0.4615	0.2952	978	30	2616	2.2	67625	58.1	57
28	0.5488	0.2958	986	30	2651	2.3	70276	60.4	59
29	0.6365	0.2968	995	30	2548	2.2	72824	62.6	61
30	0.725	0.2982	1004	30	2625	2.3	75449	64.8	64
31	0.8145	0.3001	1013	30	2476	2.1	77925	67.0	66
32	0.9053	0.3025	1022	30	2398	2.1	80323	69.0	68
33	0.9977	0.3055	1031	31	2467	2.1	82790	71.2	70
34	1.0921	0.3091	1041	31	2346	2.0	85136	73.2	72
35	1.1888	0.3133	1050	31	2432	2.1	87568	75.3	74
36	1.2885	0.3182	1060	32	2401	2.1	89969	77.3	76

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	1.3916	0.324	1071	32	2314	2.0	92283	79.3	78
38	1.4987	0.3307	1081	33	2314	2.0	94597	81.3	80
39	1.6106	0.3386	1092	34	2283	2.0	96880	83.3	82
40	1.7282	0.3477	1104	35	2311	2.0	99191	85.2	84
41	1.8528	0.3585	1117	36	2248	1.9	101439	87.2	86
42	1.9858	0.3712	1130	37	2109	1.8	103548	89.0	88
43	2.1291	0.3863	1144	39	2101	1.8	105649	90.8	90
44	2.2853	0.4046	1160	40	1978	1.7	107627	92.5	92
45	2.4579	0.4271	1177	43	1799	1.5	109426	94.0	93
46	2.6523	0.4555	1197	46	1716	1.5	111142	95.5	95
47	2.8761	0.4924	1219	49	1518	1.3	112660	96.8	96
48	3.1427	0.5428	1246	54	1314	1.1	113974	98.0	97
49	3.4764	0.6171	1279	62	1074	0.9	115048	98.9	98
50	3.9311	0.7424	1325	74	705	0.6	115753	99.5	99
51	4.6777	1.0276	1399	103	465	0.4	116218	99.9	99
52	5.9222	1.8421	1524	184	140	0.1	116358	100.0	99

Grade 7 Mathematics

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.1805	1.8346	600	183	0	0.0	0	0.0	0
1	-3.9537	1.0162	600	102	5	0.0	5	0.0	1
2	-3.228	0.7298	633	73	29	0.0	34	0.0	1
3	-2.7898	0.605	677	61	86	0.1	120	0.1	1
4	-2.4694	0.5318	709	53	263	0.2	383	0.3	1
5	-2.2135	0.4826	735	48	595	0.5	978	0.8	1
6	-1.9982	0.4468	756	45	1169	1.0	2147	1.8	1
7	-1.811	0.4195	775	42	1842	1.6	3989	3.4	3
8	-1.6443	0.3979	792	40	2700	2.3	6689	5.7	5
9	-1.4931	0.3802	807	38	3626	3.1	10315	8.8	7
10	-1.3542	0.3656	821	37	4218	3.6	14533	12.4	11
11	-1.2251	0.3533	834	35	4650	4.0	19183	16.4	14
12	-1.104	0.3428	846	34	4570	3.9	23753	20.3	18
13	-0.9896	0.3338	857	33	4636	4.0	28389	24.2	22
14	-0.8808	0.326	868	33	4297	3.7	32686	27.9	26
15	-0.7767	0.3193	878	32	4122	3.5	36808	31.4	30
16	-0.6767	0.3135	888	31	3902	3.3	40710	34.7	33
17	-0.58	0.3084	898	31	3615	3.1	44325	37.8	36
18	-0.4862	0.3041	908	30	3416	2.9	47741	40.7	39
19	-0.3949	0.3005	917	30	3334	2.8	51075	43.5	42
20	-0.3056	0.2974	926	30	3162	2.7	54237	46.2	45
21	-0.2179	0.2949	934	29	3149	2.7	57386	48.9	48
22	-0.1315	0.293	943	29	3007	2.6	60393	51.5	50
23	-0.0461	0.2916	952	29	2924	2.5	63317	54.0	53
24	0.0386	0.2906	960	29	2840	2.4	66157	56.4	55
25	0.123	0.2902	968	29	2867	2.4	69024	58.9	58
26	0.2071	0.2902	977	29	2836	2.4	71860	61.3	60
27	0.2915	0.2907	985	29	2798	2.4	74658	63.7	62
28	0.3762	0.2916	994	29	2674	2.3	77332	65.9	65
29	0.4616	0.293	1002	29	2625	2.2	79957	68.2	67
30	0.548	0.2948	1011	29	2502	2.1	82459	70.3	69
31	0.6355	0.2971	1020	30	2518	2.1	84977	72.5	71
32	0.7246	0.2998	1029	30	2398	2.0	87375	74.5	73
33	0.8155	0.3031	1038	30	2302	2.0	89677	76.5	75
34	0.9085	0.3069	1047	31	2366	2.0	92043	78.5	77
35	1.004	0.3113	1057	31	2249	1.9	94292	80.4	79
36	1.1025	0.3164	1066	32	2239	1.9	96531	82.3	81

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	1.2044	0.3223	1077	32	2082	1.8	98613	84.1	83
38	1.3104	0.329	1087	33	2040	1.7	100653	85.8	85
39	1.4212	0.3369	1098	34	2002	1.7	102655	87.5	87
40	1.5377	0.346	1110	35	1938	1.7	104593	89.2	88
41	1.6611	0.3567	1122	36	1816	1.5	106409	90.7	90
42	1.7928	0.3695	1135	37	1750	1.5	108159	92.2	91
43	1.9348	0.3847	1150	38	1691	1.4	109850	93.7	93
44	2.0898	0.4033	1165	40	1566	1.3	111416	95.0	94
45	2.2616	0.4263	1182	43	1356	1.2	112772	96.2	96
46	2.4554	0.4555	1202	46	1198	1.0	113970	97.2	97
47	2.6799	0.4937	1224	49	1045	0.9	115015	98.1	98
48	2.9489	0.5462	1251	55	852	0.7	115867	98.8	98
49	3.2883	0.6235	1285	62	665	0.6	116532	99.4	99
50	3.7542	0.7525	1332	75	447	0.4	116979	99.7	99
51	4.5212	1.0405	1408	104	227	0.2	117206	99.9	99
52	5.7882	1.8523	1535	185	73	0.1	117279	100.0	99

Grade 8 Mathematics

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.3756	1.8343	600	183	2	0.0	2	0.0	1
1	-4.1495	1.0157	600	102	2	0.0	4	0.0	1
2	-3.4246	0.7293	609	73	9	0.0	13	0.0	1
3	-2.9871	0.6046	653	60	46	0.0	59	0.1	1
4	-2.6672	0.5315	685	53	134	0.1	193	0.2	1
5	-2.4114	0.4824	711	48	323	0.3	516	0.4	1
6	-2.1962	0.4469	732	45	672	0.6	1188	1.0	1
7	-2.0088	0.4198	751	42	1224	1.1	2412	2.1	2
8	-1.8417	0.3984	768	40	1929	1.7	4341	3.7	3
9	-1.69	0.3811	783	38	2676	2.3	7017	6.0	5
10	-1.5503	0.3668	797	37	3490	3.0	10507	9.0	8
11	-1.4203	0.3547	810	35	4090	3.5	14597	12.5	11
12	-1.2982	0.3444	822	34	4475	3.8	19072	16.4	14
13	-1.1826	0.3356	834	34	4815	4.1	23887	20.5	18
14	-1.0726	0.328	845	33	4676	4.0	28563	24.5	23
15	-0.9672	0.3213	855	32	4517	3.9	33080	28.4	26
16	-0.8658	0.3155	865	32	4383	3.8	37463	32.2	30
17	-0.7679	0.3104	875	31	4197	3.6	41660	35.8	34
18	-0.673	0.3059	884	31	3811	3.3	45471	39.0	37
19	-0.5807	0.3019	894	30	3741	3.2	49212	42.3	41
20	-0.4906	0.2984	903	30	3594	3.1	52806	45.3	44
21	-0.4025	0.2954	912	30	3345	2.9	56151	48.2	47
22	-0.3161	0.2927	920	29	3156	2.7	59307	50.9	50
23	-0.2311	0.2904	929	29	2956	2.5	62263	53.5	52
24	-0.1473	0.2886	937	29	2944	2.5	65207	56.0	55
25	-0.0645	0.287	945	29	2791	2.4	67998	58.4	57
26	0.0175	0.2859	954	29	2685	2.3	70683	60.7	60
27	0.099	0.2851	962	29	2748	2.4	73431	63.0	62
28	0.1801	0.2847	970	28	2530	2.2	75961	65.2	64
29	0.2612	0.2846	978	28	2468	2.1	78429	67.3	66
30	0.3423	0.2851	986	29	2391	2.1	80820	69.4	68
31	0.4238	0.2859	994	29	2369	2.0	83189	71.4	70
32	0.5059	0.2873	1002	29	2299	2.0	85488	73.4	72
33	0.5889	0.2892	1011	29	2114	1.8	87602	75.2	74
34	0.6733	0.2917	1019	29	2162	1.9	89764	77.1	76
35	0.7592	0.2948	1028	29	2113	1.8	91877	78.9	78
36	0.8473	0.2987	1036	30	1985	1.7	93862	80.6	80

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	0.9379	0.3035	1046	30	1970	1.7	95832	82.3	81
38	1.0317	0.3092	1055	31	1985	1.7	97817	84.0	83
39	1.1294	0.3161	1065	32	1907	1.6	99724	85.6	85
40	1.2319	0.3244	1075	32	1810	1.6	101534	87.2	86
41	1.3402	0.3343	1086	33	1842	1.6	103376	88.8	88
42	1.4559	0.3462	1097	35	1704	1.5	105080	90.2	89
43	1.5807	0.3607	1110	36	1749	1.5	106829	91.7	91
44	1.7171	0.3785	1123	38	1642	1.4	108471	93.1	92
45	1.8686	0.4007	1139	40	1533	1.3	110004	94.4	94
46	2.0403	0.429	1156	43	1470	1.3	111474	95.7	95
47	2.24	0.4662	1176	47	1291	1.1	112765	96.8	96
48	2.4805	0.5172	1200	52	1208	1.0	113973	97.9	97
49	2.7859	0.5928	1230	59	974	0.8	114947	98.7	98
50	3.2099	0.7204	1273	72	778	0.7	115725	99.4	99
51	3.9226	1.0101	1344	101	515	0.4	116240	99.8	99
52	5.1411	1.8316	1466	183	228	0.2	116468	100.0	99

Grade 3 English Language Arts

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-4.8351	1.8368	600	184	4	0.0	4	0.0	1
1	-3.6028	1.0201	602	102	8	0.0	12	0.0	1
2	-2.8688	0.7355	676	74	19	0.0	31	0.0	1
3	-2.4221	0.6122	720	61	57	0.1	88	0.1	1
4	-2.0928	0.5403	753	54	148	0.1	236	0.2	1
5	-1.8275	0.4923	780	49	378	0.3	614	0.5	1
6	-1.6026	0.4577	802	46	760	0.7	1374	1.2	1
7	-1.4054	0.4315	822	43	1308	1.2	2682	2.4	2
8	-1.2283	0.411	840	41	1977	1.8	4659	4.1	3
9	-1.0663	0.3944	856	39	2737	2.4	7396	6.6	5
10	-0.9162	0.3809	871	38	3194	2.8	10590	9.4	8
11	-0.7755	0.3696	885	37	3614	3.2	14204	12.6	11
12	-0.6424	0.3602	898	36	3856	3.4	18060	16.1	14
13	-0.5156	0.3523	911	35	4020	3.6	22080	19.6	18
14	-0.3939	0.3455	923	35	3963	3.5	26043	23.1	21
15	-0.2765	0.3398	935	34	3963	3.5	30006	26.7	25
16	-0.1627	0.335	946	34	4014	3.6	34020	30.2	28
17	-0.0519	0.331	957	33	3930	3.5	37950	33.7	32
18	0.0565	0.3277	968	33	3851	3.4	41801	37.2	35
19	0.163	0.325	979	33	3912	3.5	45713	40.6	39
20	0.2679	0.3229	989	32	3880	3.4	49593	44.1	42
21	0.3717	0.3214	1000	32	3996	3.6	53589	47.6	46
22	0.4746	0.3204	1010	32	3998	3.6	57587	51.2	49
23	0.5771	0.32	1020	32	4013	3.6	61600	54.8	53
24	0.6796	0.3202	1030	32	4157	3.7	65757	58.5	57
25	0.7823	0.3208	1041	32	4012	3.6	69769	62.0	60
26	0.8856	0.3221	1051	32	4023	3.6	73792	65.6	64
27	0.9899	0.324	1061	32	4064	3.6	77856	69.2	67
28	1.0957	0.3266	1072	33	3952	3.5	81808	72.7	71
29	1.2034	0.3299	1083	33	3913	3.5	85721	76.2	74
30	1.3136	0.3341	1094	33	3660	3.3	89381	79.5	78
31	1.4269	0.3392	1105	34	3539	3.1	92920	82.6	81
32	1.544	0.3454	1117	35	3382	3.0	96302	85.6	84
33	1.6659	0.353	1129	35	3201	2.8	99503	88.4	87
34	1.7936	0.3621	1142	36	2710	2.4	102213	90.9	90
35	1.9286	0.3731	1155	37	2490	2.2	104703	93.1	92
36	2.0727	0.3865	1170	39	2098	1.9	106801	94.9	94

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	2.2283	0.403	1185	40	1807	1.6	108608	96.5	96
38	2.3989	0.4237	1202	42	1354	1.2	109962	97.7	97
39	2.5894	0.4502	1221	45	1039	0.9	111001	98.7	98
40	2.8074	0.4852	1243	49	682	0.6	111683	99.3	99
41	3.0657	0.5338	1269	53	437	0.4	112120	99.7	99
42	3.3881	0.6065	1301	61	227	0.2	112347	99.9	99
43	3.8278	0.7309	1345	73	111	0.1	112458	100.0	99
44	4.555	1.0168	1418	102	35	0.0	112493	100.0	99
45	5.7827	1.835	1541	184	6	0.0	112499	100.0	99

Grade 4 English Language Arts

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.3086	1.8339	600	183	2	0.0	2	0.0	1
1	-4.0837	1.0148	600	101	1	0.0	3	0.0	1
2	-3.3607	0.7279	621	73	12	0.0	15	0.0	1
3	-2.9255	0.6026	665	60	22	0.0	37	0.0	1
4	-2.608	0.529	697	53	50	0.0	87	0.1	1
5	-2.3549	0.4795	722	48	104	0.1	191	0.2	1
6	-2.1426	0.4435	743	44	213	0.2	404	0.3	1
7	-1.9584	0.416	762	42	347	0.3	751	0.6	1
8	-1.7946	0.3942	778	39	593	0.5	1344	1.2	1
9	-1.6463	0.3765	793	38	929	0.8	2273	2.0	2
10	-1.5102	0.3618	806	36	1199	1.0	3472	3.0	2
11	-1.3839	0.3494	819	35	1535	1.3	5007	4.3	4
12	-1.2655	0.3389	831	34	1873	1.6	6880	5.9	5
13	-1.1538	0.3298	842	33	2084	1.8	8964	7.7	7
14	-1.0476	0.322	853	32	2246	1.9	11210	9.6	9
15	-0.9461	0.3153	863	32	2307	2.0	13517	11.6	11
16	-0.8486	0.3094	873	31	2543	2.2	16060	13.8	13
17	-0.7545	0.3042	882	30	2583	2.2	18643	16.0	15
18	-0.6633	0.2997	891	30	2568	2.2	21211	18.2	17
19	-0.5747	0.2958	900	30	2641	2.3	23852	20.5	19
20	-0.4882	0.2925	909	29	2660	2.3	26512	22.8	22
21	-0.4035	0.2895	917	29	2624	2.3	29136	25.0	24
22	-0.3204	0.287	925	29	2666	2.3	31802	27.3	26
23	-0.2387	0.2849	934	28	2653	2.3	34455	29.6	28
24	-0.158	0.2832	942	28	2622	2.3	37077	31.9	31
25	-0.0782	0.2818	950	28	2685	2.3	39762	34.2	33
26	0.0009	0.2807	958	28	2634	2.3	42396	36.4	35
27	0.0794	0.2799	965	28	2658	2.3	45054	38.7	38
28	0.1575	0.2793	973	28	2794	2.4	47848	41.1	40
29	0.2355	0.2791	981	28	2715	2.3	50563	43.4	42
30	0.3134	0.2791	989	28	2885	2.5	53448	45.9	45
31	0.3913	0.2794	997	28	2977	2.6	56425	48.5	47
32	0.4695	0.2799	1004	28	2990	2.6	59415	51.0	50
33	0.5481	0.2807	1012	28	3071	2.6	62486	53.7	52
34	0.6272	0.2818	1020	28	3103	2.7	65589	56.3	55
35	0.707	0.2831	1028	28	3094	2.7	68683	59.0	58
36	0.7875	0.2847	1036	28	3129	2.7	71812	61.7	60

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	0.8691	0.2865	1044	29	3264	2.8	75076	64.5	63
38	0.9518	0.2886	1053	29	3218	2.8	78294	67.3	66
39	1.0358	0.2911	1061	29	3099	2.7	81393	69.9	69
40	1.1213	0.2938	1070	29	3217	2.8	84610	72.7	71
41	1.2085	0.2969	1078	30	3169	2.7	87779	75.4	74
42	1.2976	0.3003	1087	30	3146	2.7	90925	78.1	77
43	1.3889	0.3041	1096	30	2946	2.5	93871	80.6	79
44	1.4827	0.3084	1106	31	2870	2.5	96741	83.1	82
45	1.5792	0.3131	1115	31	2771	2.4	99512	85.5	84
46	1.6789	0.3183	1125	32	2687	2.3	102199	87.8	87
47	1.782	0.3242	1136	32	2361	2.0	104560	89.8	89
48	1.8892	0.3307	1146	33	2205	1.9	106765	91.7	91
49	2.0009	0.338	1158	34	1915	1.6	108680	93.4	93
50	2.1179	0.3462	1169	35	1749	1.5	110429	94.9	94
51	2.241	0.3556	1182	36	1368	1.2	111797	96.0	95
52	2.3712	0.3664	1195	37	1233	1.1	113030	97.1	97
53	2.51	0.3789	1208	38	949	0.8	113979	97.9	98
54	2.659	0.3935	1223	39	740	0.6	114719	98.5	98
55	2.8207	0.4111	1240	41	563	0.5	115282	99.0	99
56	2.9983	0.4325	1257	43	393	0.3	115675	99.4	99
57	3.1968	0.4594	1277	46	293	0.3	115968	99.6	99
58	3.4236	0.4946	1300	49	186	0.2	116154	99.8	99
59	3.6915	0.5429	1327	54	114	0.1	116268	99.9	99
60	4.024	0.615	1360	62	71	0.1	116339	99.9	99
61	4.4744	0.7382	1405	74	47	0.0	116386	100.0	99
62	5.2126	1.0223	1479	102	24	0.0	116410	100.0	99
63	6.448	1.838	1602	184	1	0.0	116411	100.0	99

Grade 5 English Language Arts

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.6702	1.8384	600	184	1	0.0	1	0.0	1
1	-4.4339	1.0227	600	102	1	0.0	2	0.0	1
2	-3.6953	0.7383	600	74	1	0.0	3	0.0	1
3	-3.2452	0.6145	634	61	9	0.0	12	0.0	1
4	-2.9136	0.5417	667	54	25	0.0	37	0.0	1
5	-2.6474	0.4927	694	49	71	0.1	108	0.1	1
6	-2.4227	0.4569	716	46	129	0.1	237	0.2	1
7	-2.2267	0.4294	736	43	277	0.2	514	0.4	1
8	-2.052	0.4075	753	41	425	0.4	939	0.8	1
9	-1.8934	0.3895	769	39	683	0.6	1622	1.4	1
10	-1.7476	0.3745	784	37	844	0.7	2466	2.1	2
11	-1.6121	0.3619	797	36	1194	1.0	3660	3.1	3
12	-1.4851	0.351	810	35	1261	1.1	4921	4.2	4
13	-1.3653	0.3416	822	34	1530	1.3	6451	5.5	5
14	-1.2514	0.3334	833	33	1811	1.6	8262	7.1	6
15	-1.1427	0.3262	844	33	2010	1.7	10272	8.8	8
16	-1.0384	0.3199	854	32	2071	1.8	12343	10.6	10
17	-0.9378	0.3143	865	31	2122	1.8	14465	12.4	11
18	-0.8406	0.3094	874	31	2412	2.1	16877	14.5	13
19	-0.7462	0.3051	884	31	2505	2.1	19382	16.6	16
20	-0.6544	0.3012	893	30	2558	2.2	21940	18.8	18
21	-0.5647	0.2978	902	30	2570	2.2	24510	21.0	20
22	-0.4769	0.2949	911	29	2670	2.3	27180	23.3	22
23	-0.3907	0.2923	919	29	2633	2.3	29813	25.5	24
24	-0.3059	0.2901	928	29	2637	2.3	32450	27.8	27
25	-0.2223	0.2882	936	29	2742	2.3	35192	30.2	29
26	-0.1397	0.2866	944	29	2697	2.3	37889	32.5	31
27	-0.0579	0.2854	953	29	2853	2.4	40742	34.9	34
28	0.0232	0.2844	961	28	2904	2.5	43646	37.4	36
29	0.1039	0.2837	969	28	2862	2.5	46508	39.9	39
30	0.1842	0.2832	977	28	2959	2.5	49467	42.4	41
31	0.2643	0.283	985	28	3049	2.6	52516	45.0	44
32	0.3445	0.2831	993	28	3166	2.7	55682	47.7	46
33	0.4247	0.2835	1001	28	3181	2.7	58863	50.4	49
34	0.5052	0.2841	1009	28	3211	2.8	62074	53.2	52
35	0.5862	0.285	1017	29	3146	2.7	65220	55.9	55
36	0.6677	0.2861	1025	29	3187	2.7	68407	58.6	57

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	0.7499	0.2876	1033	29	3323	2.8	71730	61.5	60
38	0.8331	0.2893	1042	29	3238	2.8	74968	64.2	63
39	0.9174	0.2914	1050	29	3181	2.7	78149	67.0	66
40	1.0031	0.2939	1059	29	3193	2.7	81342	69.7	68
41	1.0902	0.2967	1067	30	3236	2.8	84578	72.5	71
42	1.1792	0.2999	1076	30	3249	2.8	87827	75.3	74
43	1.2702	0.3036	1085	30	3125	2.7	90952	77.9	77
44	1.3636	0.3077	1095	31	3067	2.6	94019	80.6	79
45	1.4597	0.3125	1104	31	2927	2.5	96946	83.1	82
46	1.559	0.3178	1114	32	2748	2.4	99694	85.4	84
47	1.6619	0.3239	1125	32	2602	2.2	102296	87.7	87
48	1.769	0.3308	1135	33	2440	2.1	104736	89.7	89
49	1.881	0.3386	1146	34	2252	1.9	106988	91.7	91
50	1.9987	0.3476	1158	35	1996	1.7	108984	93.4	93
51	2.123	0.3578	1171	36	1709	1.5	110693	94.9	94
52	2.2551	0.3696	1184	37	1515	1.3	112208	96.2	96
53	2.3967	0.3832	1198	38	1197	1.0	113405	97.2	97
54	2.5496	0.3992	1213	40	1011	0.9	114416	98.0	98
55	2.7165	0.4182	1230	42	781	0.7	115197	98.7	98
56	2.9008	0.4412	1248	44	560	0.5	115757	99.2	99
57	3.1077	0.4696	1269	47	364	0.3	116121	99.5	99
58	3.345	0.506	1293	51	234	0.2	116355	99.7	99
59	3.6253	0.5553	1321	56	136	0.1	116491	99.8	99
60	3.9726	0.6277	1356	63	99	0.1	116590	99.9	99
61	4.4399	0.7503	1402	75	62	0.1	116652	100.0	99
62	5.197	1.0319	1478	103	36	0.0	116688	100.0	99
63	6.4468	1.8437	1603	184	10	0.0	116698	100.0	99

Grade 6 English Language Arts

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.1959	1.8325	600	183	0	0.0	0	0.0	0
1	-3.9744	1.0125	600	101	1	0.0	1	0.0	1
2	-3.2557	0.7252	615	73	0	0.0	1	0.0	1
3	-2.8238	0.6001	658	60	14	0.0	15	0.0	1
4	-2.509	0.5269	690	53	26	0.0	41	0.0	1
5	-2.2578	0.4779	715	48	56	0.0	97	0.1	1
6	-2.0467	0.4427	736	44	96	0.1	193	0.2	1
7	-1.8628	0.4159	755	42	169	0.1	362	0.3	1
8	-1.6987	0.395	771	40	327	0.3	689	0.6	1
9	-1.5495	0.3781	786	38	474	0.4	1163	1.0	1
10	-1.4119	0.3642	800	36	691	0.6	1854	1.6	1
11	-1.2836	0.3526	812	35	863	0.7	2717	2.3	2
12	-1.1628	0.3428	825	34	1085	0.9	3802	3.3	3
13	-1.0482	0.3344	836	33	1230	1.1	5032	4.3	4
14	-0.9389	0.3271	847	33	1443	1.2	6475	5.6	5
15	-0.8339	0.3208	857	32	1645	1.4	8120	7.0	6
16	-0.7328	0.3153	868	32	1854	1.6	9974	8.6	8
17	-0.635	0.3104	877	31	2009	1.7	11983	10.3	9
18	-0.54	0.306	887	31	2332	2.0	14315	12.3	11
19	-0.4475	0.3022	896	30	2410	2.1	16725	14.4	13
20	-0.3573	0.2988	905	30	2530	2.2	19255	16.5	15
21	-0.2689	0.2957	914	30	2774	2.4	22029	18.9	18
22	-0.1823	0.293	923	29	2984	2.6	25013	21.5	20
23	-0.0971	0.2907	931	29	3105	2.7	28118	24.2	23
24	-0.0132	0.2886	939	29	3147	2.7	31265	26.9	26
25	0.0695	0.2868	948	29	3193	2.7	34458	29.6	28
26	0.1514	0.2853	956	29	3332	2.9	37790	32.5	31
27	0.2324	0.2841	964	28	3333	2.9	41123	35.3	34
28	0.3128	0.2831	972	28	3351	2.9	44474	38.2	37
29	0.3928	0.2824	980	28	3347	2.9	47821	41.1	40
30	0.4724	0.282	988	28	3424	2.9	51245	44.0	43
31	0.5518	0.2818	996	28	3377	2.9	54622	46.9	45
32	0.6312	0.2819	1004	28	3437	3.0	58059	49.9	48
33	0.7108	0.2822	1012	28	3410	2.9	61469	52.8	51
34	0.7906	0.2828	1020	28	3538	3.0	65007	55.8	54
35	0.8708	0.2837	1028	28	3417	2.9	68424	58.8	57
36	0.9517	0.2849	1036	28	3521	3.0	71945	61.8	60

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	1.0332	0.2863	1044	29	3425	2.9	75370	64.7	63
38	1.1157	0.2881	1052	29	3453	3.0	78823	67.7	66
39	1.1993	0.2901	1061	29	3303	2.8	82126	70.5	69
40	1.2841	0.2925	1069	29	3349	2.9	85475	73.4	72
41	1.3704	0.2951	1078	30	3222	2.8	88697	76.2	75
42	1.4584	0.2982	1087	30	3133	2.7	91830	78.9	78
43	1.5483	0.3015	1096	30	3027	2.6	94857	81.5	80
44	1.6403	0.3053	1105	31	2813	2.4	97670	83.9	83
45	1.7348	0.3095	1114	31	2598	2.2	100268	86.1	85
46	1.832	0.3141	1124	31	2461	2.1	102729	88.2	87
47	1.9322	0.3193	1134	32	2320	2.0	105049	90.2	89
48	2.036	0.3251	1144	33	1953	1.7	107002	91.9	91
49	2.1438	0.3316	1155	33	1814	1.6	108816	93.5	93
50	2.2561	0.3389	1166	34	1570	1.3	110386	94.8	94
51	2.3738	0.3474	1178	35	1401	1.2	111787	96.0	95
52	2.4978	0.3571	1191	36	1112	1.0	112899	97.0	96
53	2.6293	0.3685	1204	37	941	0.8	113840	97.8	97
54	2.77	0.3821	1218	38	771	0.7	114611	98.4	98
55	2.9222	0.3986	1233	40	581	0.5	115192	98.9	99
56	3.0891	0.4191	1250	42	445	0.4	115637	99.3	99
57	3.2754	0.4452	1268	45	301	0.3	115938	99.6	99
58	3.4886	0.4798	1290	48	217	0.2	116155	99.8	99
59	3.7413	0.528	1315	53	138	0.1	116293	99.9	99
60	4.057	0.6005	1346	60	80	0.1	116373	100.0	99
61	4.4889	0.725	1390	73	38	0.0	116411	100.0	99
62	5.2067	1.0118	1461	101	13	0.0	116424	100.0	99
63	6.4268	1.8318	1583	183	2	0.0	116426	100.0	99

Grade 7 English Language Arts

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.3052	1.8358	600	184	1	0.0	1	0.0	1
1	-4.0757	1.0179	600	102	1	0.0	2	0.0	1
2	-3.3468	0.7317	613	73	2	0.0	4	0.0	1
3	-2.9063	0.6066	657	61	4	0.0	8	0.0	1
4	-2.5843	0.5329	689	53	13	0.0	21	0.0	1
5	-2.3275	0.483	715	48	34	0.0	55	0.0	1
6	-2.1122	0.4466	736	45	96	0.1	151	0.1	1
7	-1.9255	0.4185	755	42	168	0.1	319	0.3	1
8	-1.7598	0.3962	772	40	302	0.3	621	0.5	1
9	-1.6102	0.3778	787	38	469	0.4	1090	0.9	1
10	-1.4734	0.3625	800	36	736	0.6	1826	1.6	1
11	-1.3467	0.3496	813	35	941	0.8	2767	2.4	2
12	-1.2284	0.3385	825	34	1226	1.0	3993	3.4	3
13	-1.1171	0.329	836	33	1489	1.3	5482	4.7	4
14	-1.0116	0.3207	846	32	1826	1.6	7308	6.2	5
15	-0.9111	0.3135	857	31	2027	1.7	9335	7.9	7
16	-0.8149	0.3072	866	31	2396	2.0	11731	10.0	9
17	-0.7223	0.3016	875	30	2533	2.2	14264	12.1	11
18	-0.6328	0.2968	884	30	2610	2.2	16874	14.4	13
19	-0.5459	0.2926	893	29	2680	2.3	19554	16.7	16
20	-0.4614	0.289	902	29	2619	2.2	22173	18.9	18
21	-0.3788	0.2859	910	29	2675	2.3	24848	21.2	20
22	-0.2979	0.2832	918	28	2695	2.3	27543	23.5	22
23	-0.2183	0.2809	926	28	2596	2.2	30139	25.7	25
24	-0.14	0.279	934	28	2746	2.3	32885	28.0	27
25	-0.0626	0.2775	941	28	2753	2.3	35638	30.3	29
26	0.0141	0.2763	949	28	2608	2.2	38246	32.6	31
27	0.0901	0.2754	957	28	2710	2.3	40956	34.9	34
28	0.1658	0.2748	964	27	2588	2.2	43544	37.1	36
29	0.2412	0.2745	972	27	2730	2.3	46274	39.4	38
30	0.3165	0.2745	979	27	2683	2.3	48957	41.7	41
31	0.3919	0.2747	987	27	2673	2.3	51630	44.0	43
32	0.4675	0.2752	994	28	2909	2.5	54539	46.4	45
33	0.5435	0.276	1002	28	2858	2.4	57397	48.9	48
34	0.6199	0.2771	1010	28	2854	2.4	60251	51.3	50
35	0.697	0.2784	1017	28	2924	2.5	63175	53.8	53
36	0.775	0.28	1025	28	2946	2.5	66121	56.3	55

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	0.8538	0.2818	1033	28	2855	2.4	68976	58.7	58
38	0.9339	0.284	1041	28	3031	2.6	72007	61.3	60
39	1.0152	0.2864	1049	29	2990	2.5	74997	63.9	63
40	1.098	0.2892	1057	29	3024	2.6	78021	66.4	65
41	1.1826	0.2924	1066	29	3155	2.7	81176	69.1	68
42	1.2691	0.2959	1075	30	3141	2.7	84317	71.8	70
43	1.3578	0.2998	1083	30	3036	2.6	87353	74.4	73
44	1.4489	0.3042	1093	30	3037	2.6	90390	77.0	76
45	1.5429	0.3091	1102	31	3087	2.6	93477	79.6	78
46	1.6401	0.3145	1112	31	2862	2.4	96339	82.0	81
47	1.7409	0.3206	1122	32	2847	2.4	99186	84.5	83
48	1.8459	0.3274	1132	33	2775	2.4	101961	86.8	86
49	1.9555	0.3351	1143	34	2603	2.2	104564	89.0	88
50	2.0706	0.3437	1155	34	2344	2.0	106908	91.0	90
51	2.1921	0.3535	1167	35	2043	1.7	108951	92.8	92
52	2.321	0.3648	1180	36	1872	1.6	110823	94.4	94
53	2.4588	0.3778	1194	38	1459	1.2	112282	95.6	95
54	2.6072	0.3931	1208	39	1370	1.2	113652	96.8	96
55	2.7687	0.4112	1225	41	1062	0.9	114714	97.7	97
56	2.9467	0.4333	1242	43	850	0.7	115564	98.4	98
57	3.1462	0.4608	1262	46	603	0.5	116167	98.9	99
58	3.3746	0.4965	1285	50	481	0.4	116648	99.3	99
59	3.6448	0.5454	1312	55	335	0.3	116983	99.6	99
60	3.9803	0.6178	1346	62	224	0.2	117207	99.8	99
61	4.4345	0.7411	1391	74	152	0.1	117359	99.9	99
62	5.1772	1.0247	1465	102	60	0.1	117419	100.0	99
63	6.4164	1.8395	1589	184	12	0.0	117431	100.0	99

Grade 8 English Language Arts

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-5.5592	1.8273	600	183	1	0.0	1	0.0	1
1	-4.3504	1.004	600	100	0	0.0	1	0.0	1
2	-3.6476	0.7149	600	71	1	0.0	2	0.0	1
3	-3.2296	0.5892	638	59	8	0.0	10	0.0	1
4	-2.9268	0.5161	668	52	9	0.0	19	0.0	1
5	-2.6861	0.4676	693	47	35	0.0	54	0.0	1
6	-2.4841	0.4329	713	43	80	0.1	134	0.1	1
7	-2.3082	0.4069	730	41	126	0.1	260	0.2	1
8	-2.151	0.3867	746	39	247	0.2	507	0.4	1
9	-2.0078	0.3707	760	37	415	0.4	922	0.8	1
10	-1.8753	0.3577	774	36	530	0.5	1452	1.2	1
11	-1.7513	0.3469	786	35	765	0.7	2217	1.9	2
12	-1.6341	0.338	798	34	977	0.8	3194	2.7	2
13	-1.5224	0.3305	809	33	1097	0.9	4291	3.7	3
14	-1.4154	0.3241	820	32	1378	1.2	5669	4.9	4
15	-1.3121	0.3186	830	32	1556	1.3	7225	6.2	6
16	-1.2122	0.3139	840	31	1770	1.5	8995	7.7	7
17	-1.115	0.3098	850	31	1849	1.6	10844	9.3	9
18	-1.0201	0.3062	859	31	2077	1.8	12921	11.1	10
19	-0.9273	0.3031	868	30	2050	1.8	14971	12.8	12
20	-0.8363	0.3004	877	30	2183	1.9	17154	14.7	14
21	-0.7467	0.2981	886	30	2257	1.9	19411	16.6	16
22	-0.6585	0.2961	895	30	2381	2.0	21792	18.7	18
23	-0.5714	0.2943	904	29	2419	2.1	24211	20.8	20
24	-0.4852	0.2928	913	29	2492	2.1	26703	22.9	22
25	-0.3999	0.2916	921	29	2604	2.2	29307	25.1	24
26	-0.3151	0.2906	930	29	2571	2.2	31878	27.3	26
27	-0.2309	0.2898	938	29	2684	2.3	34562	29.6	28
28	-0.1471	0.2892	946	29	2645	2.3	37207	31.9	31
29	-0.0636	0.2889	955	29	2857	2.4	40064	34.3	33
30	0.0198	0.2887	963	29	2882	2.5	42946	36.8	36
31	0.1031	0.2888	971	29	3037	2.6	45983	39.4	38
32	0.1866	0.289	980	29	3017	2.6	49000	42.0	41
33	0.2702	0.2895	988	29	3241	2.8	52241	44.8	43
34	0.3543	0.2902	997	29	3322	2.8	55563	47.6	46
35	0.4387	0.2912	1005	29	3352	2.9	58915	50.5	49
36	0.5238	0.2923	1013	29	3433	2.9	62348	53.4	52

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	0.6097	0.2938	1022	29	3553	3.0	65901	56.5	55
38	0.6965	0.2955	1031	30	3728	3.2	69629	59.7	58
39	0.7845	0.2976	1040	30	3675	3.2	73304	62.8	61
40	0.8737	0.3	1048	30	3587	3.1	76891	65.9	64
41	0.9645	0.3027	1058	30	3465	3.0	80356	68.9	67
42	1.0571	0.3059	1067	31	3688	3.2	84044	72.0	70
43	1.1517	0.3094	1076	31	3401	2.9	87445	75.0	74
44	1.2487	0.3135	1086	31	3489	3.0	90934	78.0	76
45	1.3484	0.3182	1096	32	3252	2.8	94186	80.7	79
46	1.4513	0.3234	1106	32	3090	2.6	97276	83.4	82
47	1.5578	0.3294	1117	33	2922	2.5	100198	85.9	85
48	1.6685	0.3361	1128	34	2721	2.3	102919	88.2	87
49	1.784	0.3438	1140	34	2532	2.2	105451	90.4	89
50	1.9051	0.3525	1152	35	2207	1.9	107658	92.3	91
51	2.0328	0.3624	1164	36	1991	1.7	109649	94.0	93
52	2.1682	0.3739	1178	37	1600	1.4	111249	95.4	95
53	2.3129	0.3871	1192	39	1389	1.2	112638	96.6	96
54	2.4686	0.4026	1208	40	1165	1.0	113803	97.6	97
55	2.638	0.421	1225	42	894	0.8	114697	98.3	98
56	2.8244	0.4433	1244	44	685	0.6	115382	98.9	99
57	3.033	0.471	1264	47	474	0.4	115856	99.3	99
58	3.2713	0.5068	1288	51	343	0.3	116199	99.6	99
59	3.5523	0.5556	1316	56	243	0.2	116442	99.8	99
60	3.8997	0.6278	1351	63	128	0.1	116570	99.9	99
61	4.3671	0.7503	1398	75	70	0.1	116640	100.0	99
62	5.1244	1.0322	1474	103	15	0.0	116655	100.0	99
63	6.3749	1.8441	1599	184	0	0.0	116655	100.0	100

Grade 4 Science

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-4.451	1.8342	1050	324	0	0.0	0	0.0	0
1	-3.2253	1.0154	1050	179	3	0.0	3	0.0	1
2	-2.5009	0.7289	1050	129	10	0.0	13	0.0	1
3	-2.064	0.6041	1050	107	29	0.0	42	0.0	1
4	-1.7445	0.5309	1050	94	65	0.1	107	0.1	1
5	-1.4893	0.4819	1050	85	198	0.2	305	0.3	1
6	-1.2746	0.4464	1050	79	378	0.3	683	0.6	1
7	-1.0877	0.4194	1050	74	562	0.5	1245	1.1	1
8	-0.9209	0.3981	1063	70	987	0.8	2232	1.9	1
9	-0.7694	0.3809	1090	67	1293	1.1	3525	3.0	2
10	-0.6298	0.3667	1114	65	1638	1.4	5163	4.4	4
11	-0.4997	0.355	1137	63	2015	1.7	7178	6.2	5
12	-0.3773	0.3451	1159	61	2241	1.9	9419	8.1	7
13	-0.2612	0.3367	1179	60	2386	2.0	11805	10.1	9
14	-0.1502	0.3297	1199	58	2725	2.3	14530	12.5	11
15	-0.0435	0.3237	1218	57	2810	2.4	17340	14.9	14
16	0.0596	0.3186	1236	56	2939	2.5	20279	17.4	16
17	0.1597	0.3144	1254	56	3143	2.7	23422	20.1	19
18	0.2574	0.3109	1271	55	3203	2.7	26625	22.8	21
19	0.3532	0.308	1288	54	3315	2.8	29940	25.7	24
20	0.4473	0.3058	1305	54	3398	2.9	33338	28.6	27
21	0.5403	0.3041	1321	54	3498	3.0	36836	31.6	30
22	0.6323	0.3029	1337	54	3739	3.2	40575	34.8	33
23	0.7239	0.3023	1354	53	3782	3.2	44357	38.0	36
24	0.8152	0.3021	1370	53	3846	3.3	48203	41.3	40
25	0.9065	0.3024	1386	53	3971	3.4	52174	44.7	43
26	0.9982	0.3032	1402	54	4138	3.5	56312	48.3	47
27	1.0905	0.3045	1418	54	4180	3.6	60492	51.9	50
28	1.1837	0.3063	1435	54	4345	3.7	64837	55.6	54
29	1.2782	0.3087	1452	55	4505	3.9	69342	59.5	58
30	1.3744	0.3116	1469	55	4304	3.7	73646	63.1	61
31	1.4726	0.3152	1486	56	4374	3.8	78020	66.9	65
32	1.5732	0.3195	1504	56	4292	3.7	82312	70.6	69
33	1.6769	0.3245	1522	57	4249	3.6	86561	74.2	72
34	1.7841	0.3305	1541	58	4038	3.5	90599	77.7	76
35	1.8956	0.3376	1561	60	3924	3.4	94523	81.0	79
36	2.0123	0.3459	1581	61	3738	3.2	98261	84.3	83

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	2.1353	0.3557	1603	63	3456	3.0	101717	87.2	86
38	2.2658	0.3673	1626	65	3187	2.7	104904	89.9	89
39	2.4058	0.3813	1651	67	2745	2.4	107649	92.3	91
40	2.5576	0.3984	1678	70	2354	2.0	110003	94.3	93
41	2.7246	0.4196	1707	74	2018	1.7	112021	96.0	95
42	2.9117	0.4465	1740	79	1579	1.4	113600	97.4	97
43	3.1265	0.4819	1778	85	1226	1.1	114826	98.5	98
44	3.3816	0.5309	1823	94	835	0.7	115661	99.2	99
45	3.701	0.604	1880	107	542	0.5	116203	99.6	99
46	4.1377	0.7288	1957	129	279	0.2	116482	99.9	99
47	4.8618	1.0153	2085	179	118	0.1	116600	100.0	99
48	6.0873	1.8341	2302	324	30	0.0	116630	100.0	99

Grade 8 Science

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
0	-4.7301	1.8327	925	351	4	0.0	4	0.0	1
1	-3.5083	1.0128	925	194	4	0.0	8	0.0	1
2	-2.7892	0.7253	925	139	9	0.0	17	0.0	1
3	-2.3574	0.5999	925	115	63	0.1	80	0.1	1
4	-2.043	0.5263	925	101	135	0.1	215	0.2	1
5	-1.7925	0.477	925	91	340	0.3	555	0.5	1
6	-1.5824	0.4413	925	85	593	0.5	1148	1.0	1
7	-1.4	0.4141	928	79	1117	1.0	2265	2.0	1
8	-1.2375	0.3927	960	75	1663	1.4	3928	3.4	3
9	-1.0902	0.3754	988	72	2312	2.0	6240	5.4	4
10	-0.9547	0.3613	1014	69	2896	2.5	9136	7.9	7
11	-0.8285	0.3495	1038	67	3190	2.7	12326	10.6	9
12	-0.7099	0.3396	1061	65	3530	3.0	15856	13.7	12
13	-0.5974	0.3312	1082	63	3678	3.2	19534	16.8	15
14	-0.4901	0.3241	1103	62	3650	3.1	23184	20.0	18
15	-0.387	0.3181	1123	61	3432	3.0	26616	22.9	21
16	-0.2875	0.3131	1142	60	3415	2.9	30031	25.9	24
17	-0.1908	0.3088	1160	59	3286	2.8	33317	28.7	27
18	-0.0966	0.3053	1178	58	3261	2.8	36578	31.5	30
19	-0.0043	0.3024	1196	58	3262	2.8	39840	34.3	33
20	0.0864	0.3001	1213	57	3246	2.8	43086	37.1	36
21	0.1759	0.2983	1230	57	3174	2.7	46260	39.9	38
22	0.2645	0.2971	1247	57	3160	2.7	49420	42.6	41
23	0.3525	0.2964	1264	57	3264	2.8	52684	45.4	44
24	0.4403	0.2961	1281	57	3258	2.8	55942	48.2	47
25	0.528	0.2964	1298	57	3366	2.9	59308	51.1	50
26	0.616	0.2971	1315	57	3353	2.9	62661	54.0	53
27	0.7046	0.2983	1332	57	3478	3.0	66139	57.0	55
28	0.794	0.3	1349	57	3360	2.9	69499	59.9	58
29	0.8847	0.3022	1366	58	3417	2.9	72916	62.8	61
30	0.9768	0.305	1384	58	3475	3.0	76391	65.8	64
31	1.0709	0.3085	1402	59	3482	3.0	79873	68.8	67
32	1.1673	0.3126	1420	60	3502	3.0	83375	71.8	70
33	1.2665	0.3175	1439	61	3409	2.9	86784	74.8	73
34	1.3691	0.3234	1459	62	3427	3.0	90211	77.7	76
35	1.4759	0.3302	1479	63	3412	2.9	93623	80.7	79
36	1.5875	0.3384	1501	65	3234	2.8	96857	83.5	82

Raw Score	IRT Difficulty Estimate	IRT Difficulty SE	Scale Score	Scale Score SE	Frequency	Percent	Cumulative Frequency	Cumulative Percent	Percentile
37	1.7052	0.348	1523	67	3134	2.7	99991	86.2	85
38	1.8303	0.3596	1547	69	2883	2.5	102874	88.6	87
39	1.9645	0.3735	1573	72	2647	2.3	105521	90.9	90
40	2.1102	0.3905	1601	75	2472	2.1	107993	93.1	92
41	2.2707	0.4116	1632	79	2128	1.8	110121	94.9	94
42	2.451	0.4386	1666	84	1822	1.6	111943	96.5	96
43	2.6585	0.4741	1706	91	1470	1.3	113413	97.7	97
44	2.9061	0.5234	1753	100	1152	1.0	114565	98.7	98
45	3.2173	0.5971	1813	114	763	0.7	115328	99.4	99
46	3.6455	0.7227	1895	138	454	0.4	115782	99.8	99
47	4.3606	1.0107	2032	194	207	0.2	115989	99.9	99
48	5.5795	1.8315	2265	351	59	0.1	116048	100.0	99

APPENDIX O: OPERATIONAL ITEM STATISTICS

The Item Statistics are provided for all operational (OP) items. Item statistics include previous and current item sequence, previous and current *p*-value, and previous and current IRT difficulty estimates. Note that the previous IRT difficulty estimates and parameters were used for pre-equating.

Mathematics Grade 3

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
621395	MC	0	1	0	9	2023	0.73	0.74	-0.5473	-0.5473
394378	MC	0	2	2	24	2019	0.66	0.67	-0.2527	-0.2527
657711	MC	0	3	2	24	2022	0.32	0.42	1.4886	0.9577
493239	MC	0	4	8	22	2019	0.65	0.63	-0.1610	-0.1610
495186	MC	0	5	1	50	2023	0.53	0.58	0.3243	0.3243
713371	MC	0	6	4	48	2023	0.79	0.88	-1.1191	-1.8087
579656	MC	0	7	4	22	2019	0.49	0.46	0.7285	0.7285
495214	MC	0	8	0	19	2022	0.43	0.43	0.7198	0.7198
314244	MC	0	9	0	10	2022	0.41	0.49	0.9827	0.9827
713366	MC	0	10	8	47	2023	0.50	0.46	0.5696	0.5696
408674	MC	0	11	0	40	2022	0.49	0.49	0.6468	0.6468
711415	MC	0	12	6	23	2023	0.55	0.60	0.2646	0.2646
617235	MC	0	13	4	24	2022	0.40	0.46	1.0283	1.0283
408729	MC	0	14	0	14	2022	0.45	0.46	0.3127	0.3127
659903	MC	0	15	4	23	2022	0.53	0.56	0.3136	0.3136
662425	MC	0	16	0	34	2023	0.47	0.40	0.7786	0.7786
497750	MC	0	17	0	10	2023	0.62	0.61	-0.3361	-0.3361
495184	MC	0	18	4	23	2019	0.36	0.37	1.3919	1.3919
659917	MC	0	19	7	48	2022	0.36	0.37	1.2417	1.2417
579661	MC	0	20	0	4	2022	0.77	0.75	-0.9407	-0.9407
565863	OE	0	25	8	52	2019	0.61	0.54	0.2627	0.2627
499220	OE	0	26	0	25	2019	0.47	0.45	0.8248	0.8248
579664	MC	0	27	9	50	2022	0.76	0.80	-0.9544	-0.9544
479164	MC	0	28	0	38	2023	0.58	0.56	0.5115	0.5115
493231	MC	0	29	6	49	2019	0.48	0.46	0.7460	0.7460
659904	MC	0	30	0	16	2023	0.53	0.60	0.3602	0.3602
579647	MC	0	31	5	22	2022	0.63	0.63	-0.1932	-0.1932
493248	MC	0	32	0	8	2023	0.49	0.49	0.5417	0.5417
711418	MC	0	33	2	23	2023	0.60	0.63	0.0287	0.0287
579676	MC	0	34	9	22	2019	0.35	0.33	1.4391	1.4391
709878	MC	0	35	5	48	2023	0.39	0.40	1.0835	1.0835

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
408536	MC	0	36	0	39	2023	0.33	0.31	1.3164	1.3164
495193	MC	0	37	6	48	2019	0.38	0.39	1.2718	1.2718
711414	MC	0	38	1	22	2023	0.68	0.72	-0.4900	-0.4900
394382	MC	0	39	5	21	2019	0.58	0.60	0.2397	0.2397
711346	MC	0	40	4	22	2023	0.68	0.70	-0.4039	-0.4039
713618	MC	0	41	8	24	2023	0.46	0.43	0.7984	0.7984
624785	MC	0	42	9	21	2023	0.47	0.44	0.6565	0.6565
497751	MC	0	43	8	24	2019	0.48	0.46	0.7552	0.7552
493220	MC	0	44	0	28	2023	0.60	0.61	-0.0415	-0.0415
711343	MC	0	45	9	23	2023	0.44	0.43	0.8453	0.8453
622959	MC	0	46	7	47	2023	0.60	0.62	0.0043	0.0043
652779	OE	0	51	2	52	2023	0.53	0.53	0.4522	0.4522

Mathematics Grade 4

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
622939	MC	0	1	0	1	2023	0.71	0.71	-1.1913	-1.1913
622944	MC	0	2	3	4	2022	0.62	0.62	-0.5883	-0.5883
621396	MC	0	3	5	4	2022	0.62	0.66	-0.6395	-0.6395
493261	MC	0	5	0	27	2023	0.83	0.86	-1.7152	-1.7152
657726	MC	0	6	1	47	2022	0.53	0.57	-0.2676	-0.2676
706345	MC	0	7	7	48	2023	0.67	0.69	-0.8025	-0.8025
706338	MC	0	8	4	24	2023	0.75	0.83	-1.2108	-1.7207
713378	MC	0	9	3	22	2023	0.47	0.40	0.2306	0.7345
657737	MC	0	10	0	39	2023	0.64	0.63	-0.5737	-0.5737
313738	MC	0	11	0	13	2022	0.69	0.72	-0.8337	-0.8337
408641	MC	0	12	0	10	2022	0.39	0.39	0.4639	0.4639
314172	MC	0	13	9	23	2018	0.42	0.43	0.4393	0.4393
565998	MC	0	14	0	10	2023	0.58	0.59	-0.2113	-0.2113
495201	MC	0	15	0	16	2023	0.41	0.42	0.4033	0.4033
314656	MC	0	16	0	18	2022	0.56	0.57	-0.2593	-0.2593
706346	MC	0	17	8	48	2023	0.43	0.46	0.4273	0.4273
662438	MC	0	18	1	22	2022	0.62	0.67	-0.7369	-0.7369
711349	MC	0	19	9	47	2023	0.53	0.56	-0.0520	-0.0520
575720	MC	0	20	6	49	2019	0.46	0.51	0.3085	0.3085
622938	MC	0	21	3	24	2022	0.34	0.36	0.8734	0.8734
628162	OE	0	25	5	52	2023	0.43	0.44	0.5803	0.5803
628158	OE	0	26	0	51	2023	0.33	0.34	1.0774	1.0774
657730	MC	0	27	0	9	2023	0.82	0.84	-1.7601	-1.7601
709899	MC	0	28	4	22	2023	0.63	0.67	-0.5499	-0.5499
575715	MC	0	29	0	31	2023	0.74	0.75	-0.9487	-0.9487
493262	MC	0	30	0	11	2023	0.38	0.38	0.6809	0.6809
314659	MC	0	31	0	38	2022	0.62	0.63	-0.4402	-0.4402
621401	MC	0	32	0	32	2023	0.57	0.57	0.0458	0.0458
713628	MC	0	33	1	47	2023	0.46	0.51	0.0416	0.0416
706343	MC	0	34	1	21	2023	0.37	0.40	0.5853	0.5853
659934	MC	0	35	1	23	2022	0.36	0.43	0.7289	0.7289
479188	MC	0	36	0	43	2022	0.47	0.52	0.2783	0.2783
709883	MC	0	37	5	50	2023	0.62	0.65	-0.4875	-0.4875
657728	MC	0	38	0	35	2023	0.54	0.51	0.0511	0.0511
709847	MC	0	39	3	49	2023	0.51	0.58	-0.0028	-0.0028
709844	MC	0	40	9	23	2023	0.77	0.81	-1.3889	-1.3889

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
711438	MC	0	41	3	47	2023	0.55	0.59	-0.2194	-0.2194
711433	MC	0	42	5	48	2023	0.47	0.49	0.2217	0.2217
706340	MC	0	43	5	24	2023	0.48	0.56	0.1553	0.1553
617224	MC	0	44	5	48	2022	0.46	0.46	0.1785	0.1785
662427	MC	0	45	2	50	2023	0.42	0.39	0.4815	0.4815
709889	MC	0	46	6	50	2023	0.44	0.47	0.4255	0.4255
716157	OE	0	51	4	52	2023	0.41	0.42	0.6560	0.6560

Mathematics Grade 5

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
622924	MC	0	1	9	4	2022	0.62	0.65	-0.5093	-0.5093
313341	MC	0	2	2	4	2018	0.44	0.40	0.5959	0.5959
313760	MC	0	3	0	2	2022	0.48	0.48	-0.1171	-0.1171
715770	MC	0	5	6	49	2023	0.76	0.82	-1.2620	-1.2620
711367	MC	0	6	4	21	2023	0.63	0.66	-0.5207	-0.5207
493297	MC	0	7	3	50	2019	0.31	0.27	1.2445	1.2445
659949	MC	0	8	0	16	2023	0.83	0.89	-1.5485	-2.1738
662460	MC	0	9	2	48	2022	0.30	0.29	1.0531	1.0531
709852	MC	0	10	1	23	2023	0.69	0.80	-0.9106	-0.9106
642399	MC	0	11	0	8	2023	0.53	0.56	0.0527	0.0527
408608	MC	0	12	0	7	2022	0.34	0.33	1.2870	1.2870
715913	MC	0	13	2	50	2023	0.71	0.77	-0.8985	-0.8985
408790	MC	0	14	0	38	2022	0.35	0.35	0.9615	0.9615
711370	MC	0	15	6	47	2023	0.43	0.45	0.5659	0.5659
574137	MC	0	16	0	28	2022	0.40	0.37	0.9816	0.9816
706410	MC	0	17	9	48	2023	0.42	0.49	0.5756	0.5756
408806	MC	0	18	0	41	2022	0.41	0.49	0.3986	0.3986
706353	MC	0	19	1	22	2023	0.40	0.45	0.4764	0.4764
495254	MC	0	20	7	49	2019	0.30	0.24	1.3618	1.3618
497786	MC	0	21	2	48	2018	0.36	0.32	1.0192	1.0192
577938	OE	0	25	5	52	2022	0.51	0.53	0.1464	0.1464
716158	OE	0	26	1	52	2023	0.37	0.37	0.8775	0.8775
715773	MC	0	27	2	49	2023	0.79	0.84	-1.4558	-1.4558
710019	MC	0	28	9	23	2023	0.68	0.73	-0.7791	-0.7791
495248	MC	0	29	5	48	2019	0.37	0.35	0.9214	0.9214
709854	MC	0	30	8	50	2023	0.60	0.63	-0.2847	-0.2847
715915	MC	0	31	7	48	2023	0.49	0.49	0.1975	0.1975
408597	MC	0	32	5	49	2018	0.48	0.47	0.4022	0.4022
715909	MC	0	33	3	48	2023	0.65	0.72	-0.5892	-0.5892
706349	MC	0	34	8	48	2023	0.37	0.39	0.8739	0.8739
408813	MC	0	35	0	39	2023	0.57	0.59	-0.0553	-0.0553
566349	MC	0	36	0	42	2023	0.51	0.56	0.0836	0.0836
713632	MC	0	37	1	21	2023	0.53	0.60	-0.0045	-0.0045
574147	MC	0	38	7	48	2019	0.41	0.41	0.7523	0.7523
313325	MC	0	39	0	5	2022	0.44	0.47	0.5793	0.5793
715777	MC	0	40	7	22	2023	0.52	0.57	0.0419	0.0419

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
566040	MC	0	41	8	23	2019	0.28	0.27	1.4069	1.4069
313924	MC	0	42	0	34	2022	0.42	0.42	0.3953	0.3953
495241	MC	0	43	4	47	2023	0.47	0.48	0.3160	0.3160
659945	MC	0	44	0	12	2023	0.51	0.52	0.1344	0.1344
575694	MC	0	45	0	41	2023	0.55	0.61	-0.2123	-0.2123
495260	MC	0	46	6	47	2019	0.39	0.37	0.8289	0.8289
313770	OE	0	51	0	26	2022	0.49	0.50	-0.0413	-0.0413

Mathematics Grade 6

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
479690	MC	0	1	4	4	2018	0.78	0.74	-1.1256	-1.1256
491046	MC	0	2	0	3	2023	0.56	0.57	-0.1308	-0.1308
617644	MC	0	3	6	4	2022	0.60	0.62	-0.3598	-0.3598
663839	MC	0	5	8	48	2022	0.88	0.94	-2.1496	-2.7564
711379	MC	0	6	9	48	2023	0.42	0.43	0.7127	0.7127
663836	MC	0	7	0	12	2023	0.63	0.67	-0.3529	-0.3529
653194	MC	0	8	1	47	2022	0.46	0.62	0.3044	-0.2580
654994	MC	0	9	2	49	2022	0.59	0.59	-0.3109	-0.3109
622370	MC	0	10	7	23	2023	0.44	0.42	0.5751	0.5751
706361	MC	0	11	7	47	2023	0.54	0.52	0.0837	0.0837
624654	MC	0	12	9	50	2023	0.52	0.53	0.1612	0.1612
715779	MC	0	13	9	22	2023	0.67	0.70	-0.6177	-0.6177
652192	MC	0	14	2	24	2023	0.45	0.43	0.5899	0.5899
575149	MC	0	15	0	36	2023	0.40	0.41	0.7042	0.7042
574849	MC	0	16	0	32	2023	0.47	0.44	0.5477	0.5477
312500	MC	0	17	0	43	2022	0.44	0.47	0.4275	0.4275
413106	MC	0	18	1	50	2018	0.39	0.34	0.9400	0.9400
713400	MC	0	19	8	24	2023	0.37	0.37	1.0061	1.0061
622368	MC	0	20	0	43	2023	0.38	0.32	0.8880	0.8880
624649	MC	0	21	9	23	2023	0.34	0.33	1.2656	1.2656
661689	OE	0	25	0	25	2023	0.44	0.44	0.7711	0.7711
480016	OE	0	26	2	52	2019	0.33	0.29	1.3604	1.3604
614778	MC	0	27	3	22	2022	0.76	0.84	-1.3367	-1.3367
711451	MC	0	28	3	50	2023	0.46	0.47	0.5636	0.5636
614784	MC	0	29	1	23	2022	0.56	0.64	-0.2446	-0.2446
713650	MC	0	30	2	22	2023	0.51	0.53	0.2084	0.2084
412555	MC	0	31	0	20	2022	0.63	0.68	-0.4649	-0.4649
663840	MC	0	32	0	13	2023	0.45	0.50	0.3077	0.3077
575151	MC	0	33	7	24	2022	0.67	0.77	-0.6716	-1.1640
574777	MC	0	34	0	31	2023	0.39	0.39	0.9275	0.9275
657504	MC	0	35	0	40	2023	0.52	0.54	0.0725	0.0725
478716	MC	0	36	7	24	2019	0.52	0.53	0.3094	0.3094
654782	MC	0	37	0	37	2023	0.51	0.51	0.3874	0.3874
654998	MC	0	38	0	39	2023	0.46	0.45	0.4898	0.4898
490026	MC	0	39	1	49	2018	0.36	0.37	1.0765	1.0765
412895	MC	0	40	0	19	2022	0.47	0.49	0.6673	0.6673

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
715778	MC	0	41	4	22	2023	0.51	0.51	0.2380	0.2380
657501	MC	0	42	0	9	2023	0.48	0.47	0.7141	0.7141
657503	MC	0	43	4	50	2022	0.54	0.55	-0.0104	-0.0104
500237	MC	0	44	0	31	2022	0.57	0.52	0.0975	0.0975
574784	MC	0	45	2	24	2022	0.31	0.33	1.2544	1.2544
496953	MC	0	46	0	28	2022	0.54	0.56	-0.0538	-0.0538
712887	OE	0	51	9	52	2023	0.42	0.43	0.8024	0.8024

Mathematics Grade 7

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
335226	MC	0	1	0	1	2022	0.61	0.64	-0.6690	-0.6690
319329	MC	0	2	3	4	2018	0.33	0.30	0.9939	0.9939
617258	MC	0	3	7	4	2022	0.52	0.54	-0.2364	-0.2364
567230	MC	0	5	0	27	2023	0.71	0.72	-1.1677	-1.1677
713657	MC	0	6	8	47	2023	0.51	0.55	-0.1587	-0.1587
567235	MC	0	7	0	33	2022	0.43	0.43	0.1235	0.1235
711517	MC	0	8	9	23	2023	0.34	0.30	0.8903	0.8903
617925	MC	0	9	5	22	2022	0.52	0.51	-0.1894	-0.1894
500379	MC	0	10	7	22	2019	0.56	0.53	-0.3382	-0.3382
615280	MC	0	11	7	24	2022	0.51	0.54	-0.1825	-0.1825
477761	MC	0	12	0	38	2023	0.74	0.77	-1.3178	-1.3178
335233	MC	0	13	0	17	2022	0.37	0.40	0.5359	0.5359
659595	MC	0	14	8	24	2022	0.41	0.36	0.3360	0.3360
575220	MC	0	15	0	13	2023	0.48	0.50	0.0069	0.0069
713660	MC	0	16	3	22	2023	0.31	0.31	1.0496	1.0496
576068	MC	0	17	0	6	2022	0.62	0.59	-0.6942	-0.6942
713416	MC	0	18	6	49	2023	0.47	0.47	0.1338	0.1338
413355	MC	0	19	0	37	2022	0.40	0.39	0.4043	0.4043
711393	MC	0	20	4	47	2023	0.41	0.39	0.4000	0.4000
715806	MC	0	21	5	22	2023	0.50	0.48	-0.0470	-0.0470
658588	OE	0	25	5	52	2023	0.41	0.43	0.5054	0.5054
560139	OE	0	26	2	52	2019	0.29	0.26	1.3864	1.3864
711514	MC	0	27	7	49	2023	0.76	0.85	-1.4879	-2.0296
493996	MC	0	28	0	11	2023	0.56	0.56	-0.3687	-0.3687
706370	MC	0	29	3	23	2023	0.63	0.65	-0.7296	-0.7296
711510	MC	0	30	2	49	2023	0.62	0.61	-0.6565	-0.6565
480396	MC	0	31	8	50	2019	0.61	0.65	-0.5691	-0.5691
709902	MC	0	32	6	48	2023	0.50	0.53	-0.0891	-0.0891
503046	MC	0	33	3	22	2019	0.58	0.58	-0.3996	-0.3996
709909	MC	0	34	8	22	2023	0.59	0.66	-0.5626	-0.5626
709903	MC	0	35	7	48	2023	0.35	0.38	0.7372	0.7372
630491	MC	0	36	0	16	2023	0.37	0.38	0.5094	0.5094
404813	MC	0	37	0	44	2022	0.51	0.53	0.1033	0.1033
496123	MC	0	38	2	47	2023	0.32	0.33	0.8651	0.8651
711391	MC	0	39	9	50	2023	0.32	0.32	0.9823	0.9823
709907	MC	0	40	2	50	2023	0.46	0.47	0.1395	0.1395

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
565851	MC	0	41	0	34	2023	0.53	0.51	-0.1968	-0.1968
575224	MC	0	42	0	8	2022	0.42	0.49	0.1384	0.1384
399256	MC	0	43	5	23	2018	0.45	0.38	0.3563	0.3563
565849	MC	0	44	3	21	2019	0.39	0.40	0.5076	0.5076
617919	MC	0	45	0	42	2023	0.35	0.36	0.7174	0.7174
613069	MC	0	46	2	23	2022	0.39	0.41	0.3331	0.3331
313528	OE	0	51	0	26	2022	0.32	0.33	0.9665	0.9665

Mathematics Grade 8

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
489553	MC	0	1	3	4	2018	0.42	0.29	0.3254	0.9282
617261	MC	0	2	1	4	2022	0.33	0.37	0.4146	0.4146
617260	MC	0	3	4	4	2022	0.38	0.41	0.2860	0.2860
569261	MC	0	5	0	29	2023	0.79	0.81	-1.4320	-1.4320
314876	MC	0	6	0	32	2022	0.45	0.47	-0.0325	-0.0325
623657	MC	0	7	2	49	2022	0.55	0.58	-0.6182	-0.6182
503513	MC	0	8	0	42	2023	0.58	0.63	-0.6712	-0.6712
713679	MC	0	9	2	23	2023	0.56	0.62	-0.5752	-0.5752
713672	MC	0	10	5	21	2023	0.58	0.62	-0.6559	-0.6559
574948	MC	0	11	0	10	2023	0.60	0.62	-0.6988	-0.6988
706383	MC	0	12	3	23	2023	0.31	0.32	0.8512	0.8512
662581	MC	0	13	0	28	2023	0.58	0.58	-0.5249	-0.5249
706379	MC	0	14	7	47	2023	0.55	0.58	-0.5061	-0.5061
711408	MC	0	15	3	22	2023	0.53	0.58	-0.3799	-0.3799
575467	MC	0	16	4	22	2019	0.54	0.52	-0.3237	-0.3237
651117	MC	0	17	0	15	2023	0.40	0.40	0.2169	0.2169
658908	MC	0	18	6	22	2022	0.33	0.31	0.5979	0.5979
412789	MC	0	19	2	23	2018	0.72	0.71	-1.2215	-1.2215
713421	MC	0	20	7	22	2023	0.46	0.43	-0.0504	-0.0504
621934	MC	0	21	8	22	2022	0.41	0.43	0.1210	0.1210
715324	OE	0	25	9	52	2023	0.42	0.43	0.1117	0.1117
612078	OE	0	26	1	52	2023	0.28	0.29	0.9451	0.9451
569267	MC	0	27	0	41	2023	0.69	0.75	-1.1390	-1.1390
711523	MC	0	28	9	50	2023	0.48	0.53	-0.1815	-0.1815
709939	MC	0	29	8	22	2023	0.62	0.65	-0.8455	-0.8455
565843	MC	0	30	0	14	2023	0.54	0.59	-0.5896	-0.5896
618010	MC	0	31	3	49	2023	0.61	0.60	-0.7255	-0.7255
416599	MC	0	32	0	41	2022	0.62	0.70	-0.9982	-0.9982
574949	MC	0	33	6	49	2019	0.36	0.33	0.6108	0.6108
574587	MC	0	34	1	49	2022	0.35	0.36	0.3509	0.3509
574959	MC	0	35	0	19	2023	0.31	0.32	0.7432	0.7432
494640	MC	0	36	0	38	2023	0.41	0.40	0.2879	0.2879
335243	MC	0	37	0	5	2022	0.57	0.61	-0.6390	-0.6390
415801	MC	0	38	0	9	2022	0.45	0.44	0.2783	0.2783
715819	MC	0	39	5	47	2023	0.52	0.55	-0.3581	-0.3581
615384	MC	0	40	5	23	2022	0.37	0.40	0.3942	0.3942

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
574468	MC	0	41	2	23	2022	0.44	0.42	0.0457	0.0457
713670	MC	0	42	6	22	2023	0.46	0.49	-0.0611	-0.0611
658902	MC	0	43	9	49	2022	0.55	0.54	-0.5618	-0.5618
502450	MC	0	44	1	22	2019	0.50	0.52	-0.2251	-0.2251
625331	MC	0	45	8	50	2023	0.47	0.48	-0.0254	-0.0254
416554	MC	0	46	4	49	2019	0.45	0.40	0.1642	0.1642
493897	OE	0	51	0	25	2022	0.36	0.35	0.5677	0.5677

ELA Grade 3

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
714297	MC	0	1	4	6	2023	0.69	0.71	-0.3585	-0.3585
714296	MC	0	2	3	6	2023	0.45	0.47	0.7669	0.7669
714299	MC	0	3	6	6	2023	0.38	0.40	1.1725	1.1725
662723	MC	0	4	0	34	2023	0.52	0.50	0.4111	0.4111
662651	MC	0	5	0	3	2023	0.36	0.34	1.3793	1.3793
663188	MC	0	7	9	26	2022	0.57	0.60	0.2430	0.2430
663191	MC	0	8	9	27	2022	0.57	0.59	0.2336	0.2336
663190	ESR	0	9	9	28	2022	0.34	0.33	1.3237	1.3237
663183	MC	0	10	9	29	2022	0.50	0.51	0.6298	0.6298
663184	MC	0	11	9	30	2022	0.36	0.39	1.2753	1.2753
663192	MC	0	12	9	31	2022	0.70	0.71	-0.4268	-0.4268
663187	MC	0	13	9	34	2022	0.50	0.46	0.6113	0.6113
710726	MC	0	14	6	20	2023	0.51	0.54	0.5021	0.5021
710620	MC	0	15	6	21	2023	0.53	0.51	0.4255	0.4255
710616	MC	0	16	6	22	2023	0.81	0.76	-1.1588	-1.1588
710614	MC	0	17	6	27	2023	0.42	0.43	0.9570	0.9570
710617	MC	0	18	6	28	2023	0.67	0.65	-0.2929	-0.2929
710676	ESR	0	19	6	25	2023	0.64	0.61	-0.2070	-0.2070
713654	OE	0	20	6	30	2023	0.44	0.45	1.0255	1.0255
714811	MC	0	32	6	36	2023	0.49	0.50	0.6481	0.6481
714809	MC	0	33	4	36	2023	0.63	0.63	-0.0463	-0.0463
662659	MC	0	34	0	2	2023	0.70	0.68	-0.3994	-0.3994
662720	MC	0	35	0	4	2023	0.48	0.47	0.7777	0.7777
660254	MC	0	38	4	26	2022	0.69	0.69	-0.3015	-0.3015
660248	MC	0	39	4	28	2022	0.55	0.54	0.3803	0.3803
660242	ESR	0	40	4	31	2022	0.48	0.49	0.7037	0.7037
660246	MC	0	41	4	32	2022	0.38	0.37	1.2496	1.2496
660237	MC	0	42	4	34	2022	0.47	0.48	0.7715	0.7715
660244	MC	0	43	4	35	2022	0.34	0.34	1.4151	1.4151
625451	MC	0	44	0	44	2023	0.69	0.72	-0.7238	-0.7238
625449	ESR	0	45	0	45	2023	0.47	0.48	0.6769	0.6769
633104	MC	0	46	0	46	2023	0.50	0.49	0.6210	0.6210
625454	MC	0	47	0	47	2023	0.58	0.58	0.0128	0.0128
625452	MC	0	48	0	48	2023	0.50	0.49	0.5079	0.5079
633106	OE	0	49	0	49	2023	0.41	0.41	0.6801	0.6801

ELA Grade 4

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
714303	MC	0	1	3	6	2023	0.86	0.87	-1.6399	-1.6399
662730	MC	0	2	1	45	2023	0.54	0.56	0.2265	0.2265
714306	MC	0	3	6	6	2023	0.32	0.26	1.4243	1.4243
714815	MC	0	4	4	46	2023	0.63	0.66	-0.1712	-0.1712
714814	MC	0	5	3	46	2023	0.58	0.57	0.1495	0.1495
663148	MC	0	7	6	35	2022	0.70	0.71	-0.5460	-0.5460
664245	MC	0	8	6	37	2022	0.81	0.82	-1.2802	-1.2802
663149	MC	0	9	6	38	2022	0.45	0.46	0.7617	0.7617
663146	MC	0	10	6	41	2022	0.70	0.75	-0.5768	-0.5768
663145	ESR	0	11	6	40	2022	0.55	0.54	0.2613	0.2613
663144	MC	0	12	6	43	2022	0.45	0.45	0.7815	0.7815
663150	ESR	0	13	6	44	2022	0.37	0.38	1.1714	1.0836
661078	MC	0	14	0	15	2023	0.58	0.55	0.1386	0.1386
661079	MC	0	15	0	16	2023	0.47	0.48	0.6160	0.6160
661066	MC	0	16	0	20	2023	0.60	0.63	-0.2230	-0.2230
661070	MC	0	17	0	18	2023	0.67	0.67	-0.4892	-0.4892
661072	ESR	0	18	0	19	2023	0.55	0.58	0.2958	0.2958
661062	MC	0	19	0	21	2023	0.68	0.68	-0.5753	-0.5753
661074	MC	0	20	0	22	2023	0.41	0.41	1.0611	1.0611
711543	MC	0	21	8	30	2023	0.69	0.64	-0.4724	-0.4724
711550	MC	0	22	8	31	2023	0.51	0.45	0.3812	0.3812
711544	MC	0	23	8	32	2023	0.62	0.59	-0.0981	-0.0981
711610	MC	0	24	8	34	2023	0.48	0.42	0.6581	0.6581
711547	ESR	0	25	8	36	2023	0.67	0.61	-0.3014	-0.3014
711545	MC	0	26	8	37	2023	0.56	0.51	0.2154	0.2154
711551	ESR	0	27	8	38	2023	0.54	0.53	0.3965	0.3965
711548	MC	0	28	8	39	2023	0.38	0.39	1.2241	1.2241
714803	MC	0	40	9	6	2023	0.66	0.66	-0.3442	-0.3442
662797	MC	0	41	0	4	2023	0.36	0.36	1.2302	1.2302
662733	MC	0	42	0	42	2023	0.57	0.55	0.0954	0.0954
581064	MC	0	43	0	3	2022	0.49	0.47	0.6524	0.6524
660264	MC	0	46	3	36	2022	0.50	0.54	0.5120	0.5120
662026	MC	0	47	3	37	2022	0.67	0.68	-0.3472	-0.3472
660257	MC	0	48	3	39	2022	0.68	0.67	-0.3058	-0.3058
660261	MC	0	49	3	40	2022	0.45	0.46	0.7899	0.7899
660259	ESR	0	50	3	41	2022	0.43	0.45	0.8930	0.8930

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
660255	MC	0	51	3	43	2022	0.44	0.46	0.8228	0.8228
660260	MC	0	52	3	44	2022	0.55	0.53	0.2125	0.2125
662028	TDA	0	53	3	45	2022	0.48	0.46	1.1265	1.1265

ELA Grade 5

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
714319	MC	0	1	6	45	2023	0.51	0.55	0.4435	0.4435
581220	MC	0	2	0	3	2022	0.44	0.43	0.8712	0.8712
581211	MC	0	3	0	4	2023	0.39	0.39	1.1158	1.1158
714318	MC	0	4	6	6	2023	0.41	0.42	0.9746	0.9746
716169	MC	0	5	9	45	2023	0.57	0.52	0.1705	0.1705
659202	MC	0	7	0	7	2023	0.50	0.50	0.5319	0.5319
659203	MC	0	8	0	8	2023	0.68	0.68	-0.3171	-0.3171
659209	MC	0	9	0	9	2023	0.63	0.63	-0.2444	-0.2444
659197	MC	0	10	0	10	2023	0.57	0.56	0.1851	0.1851
661010	MC	0	11	0	11	2023	0.68	0.68	-0.7591	-0.7591
659284	ESR	0	12	0	12	2023	0.61	0.64	-0.1121	-0.1121
659287	MC	0	13	0	13	2023	0.76	0.77	-1.0169	-1.0169
659208	ESR	0	14	0	14	2023	0.54	0.55	0.3249	0.3249
659285	MC	0	15	4	42	2022	0.66	0.64	-0.2946	-0.2946
711328	MC	0	16	7	29	2023	0.55	0.52	0.3118	0.3118
711741	MC	0	17	7	30	2023	0.40	0.36	1.0570	1.0570
711320	MC	0	18	7	31	2023	0.67	0.65	-0.3853	-0.3853
711318	MC	0	19	7	32	2023	0.60	0.59	0.0045	0.0045
711553	MC	0	20	7	33	2023	0.56	0.53	0.2517	0.2517
711324	ESR	0	21	7	34	2023	0.54	0.52	0.3507	0.3507
711327	MC	0	22	7	36	2023	0.63	0.63	-0.0982	-0.0982
711738	MC	0	23	7	38	2023	0.56	0.54	0.2421	0.2421
712118	MC	0	24	4	33	2023	0.45	0.41	0.7538	0.7538
712114	MC	0	25	4	34	2023	0.66	0.63	-0.2974	-0.2974
712116	ESR	0	26	4	35	2023	0.38	0.34	1.0158	1.1497
712113	MC	0	27	4	36	2023	0.42	0.39	0.8901	0.8901
712120	MC	0	28	4	37	2023	0.44	0.43	0.7928	0.7928
661444	MC	0	40	3	44	2023	0.37	0.34	1.1922	1.1922
505539	MC	0	41	6	51	2018	0.36	0.36	1.4079	1.1284
660716	MC	0	42	0	40	2023	0.38	0.39	1.0353	1.0353
505543	MC	0	43	0	41	2023	0.29	0.28	1.8210	1.8210
712260	MC	0	46	8	30	2023	0.76	0.71	-0.8442	-0.8442
712262	MC	0	47	8	32	2023	0.70	0.70	-0.5072	-0.5072
712268	ESR	0	48	8	33	2023	0.66	0.65	-0.2959	-0.2959
712267	MC	0	49	8	35	2023	0.50	0.50	0.5284	0.5284
712264	MC	0	50	8	36	2023	0.70	0.70	-0.5040	-0.5040

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
712269	ESR	0	51	8	37	2023	0.67	0.64	-0.2772	-0.2772
712265	MC	0	52	8	38	2023	0.54	0.55	0.3685	0.3685
715584	TDA	0	53	8	39	2023	0.53	0.53	0.4756	0.4756

ELA Grade 6

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
716052	MC	0	1	5	6	2023	0.82	0.83	-1.0376	-1.0376
629746	MC	0	2	2	45	2023	0.46	0.46	0.9627	0.9627
584211	MC	0	3	9	52	2019	0.29	0.31	2.0407	2.0407
663365	MC	0	4	0	2	2023	0.49	0.45	1.1258	1.1258
663368	MC	0	5	0	42	2023	0.47	0.48	0.8797	0.8797
662371	MC	0	7	0	15	2023	0.55	0.56	0.5179	0.5179
662383	MC	0	8	0	16	2023	0.47	0.46	0.9082	0.9082
663737	MC	0	9	0	17	2023	0.84	0.86	-1.2526	-1.2526
662369	MC	0	10	0	18	2023	0.45	0.48	0.9731	0.9731
662381	ESR	0	11	0	20	2023	0.44	0.47	1.1321	1.1321
662376	MC	0	12	0	22	2023	0.54	0.57	0.6369	0.6369
711315	MC	0	13	4	30	2023	0.53	0.50	0.5449	0.5449
711234	MC	0	14	4	32	2023	0.60	0.54	0.2842	0.2842
711241	MC	0	15	4	34	2023	0.68	0.65	-0.1284	-0.1284
711240	ESR	0	16	4	35	2023	0.46	0.44	0.9128	0.9128
711235	MC	0	17	4	36	2023	0.77	0.72	-0.6724	-0.6724
711237	MC	0	18	4	37	2023	0.68	0.67	-0.1696	-0.1696
711232	ESR	0	19	4	38	2023	0.56	0.56	0.3463	0.3463
711239	MC	0	20	4	39	2023	0.50	0.47	0.7307	0.7307
712928	MC	0	21	5	30	2023	0.66	0.60	-0.0618	-0.0618
712927	MC	0	22	5	32	2023	0.58	0.50	0.4406	0.4406
712937	MC	0	23	5	33	2023	0.59	0.52	0.3046	0.3046
712933	ESR	0	24	5	34	2023	0.50	0.46	0.7379	0.7379
712935	MC	0	25	5	35	2023	0.65	0.54	0.1128	0.1128
712929	MC	0	26	5	36	2023	0.39	0.34	1.3497	1.3497
712931	ESR	0	27	5	37	2023	0.66	0.62	0.0016	0.0016
712936	MC	0	28	5	38	2023	0.45	0.43	1.0250	1.0250
712932	MC	0	29	5	39	2023	0.51	0.43	0.7783	0.7783
584209	MC	0	41	0	3	2023	0.53	0.50	0.5621	0.5621
716633	MC	0	42	9	46	2023	0.59	0.58	0.2889	0.2889
663367	MC	0	43	5	45	2023	0.54	0.53	0.5795	0.5795
584210	MC	0	44	0	44	2023	0.42	0.41	1.2184	1.2184
710782	MC	0	47	3	30	2023	0.46	0.44	0.9559	0.9559
710775	MC	0	48	3	32	2023	0.39	0.38	1.3945	1.3945
710772	MC	0	49	3	33	2023	0.77	0.75	-0.6506	-0.6506
710773	MC	0	50	3	35	2023	0.51	0.49	0.6789	0.6789

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
710771	MC	0	51	3	36	2023	0.48	0.46	0.9721	0.9721
710774	ESR	0	52	3	37	2023	0.53	0.51	0.6839	0.6839
712602	TDA	0	53	3	40	2023	0.54	0.54	0.7380	0.7380

ELA Grade 7

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
715765	MC	0	1	4	45	2023	0.76	0.80	-0.7257	-0.7257
714522	MC	0	2	2	6	2023	0.51	0.50	0.6026	0.6026
715028	MC	0	3	1	45	2023	0.46	0.44	0.7534	0.7534
663530	MC	0	4	0	1	2023	0.58	0.58	0.4179	0.4179
663487	MC	0	5	0	41	2023	0.37	0.37	1.3172	1.3172
623069	MC	0	7	12	36	2022	0.45	0.43	1.0279	1.0279
623067	MC	0	8	12	38	2022	0.75	0.74	-0.5086	-0.5086
623070	ESR	0	9	12	40	2022	0.60	0.59	0.2872	0.2872
623072	MC	0	10	12	41	2022	0.56	0.53	0.4827	0.4827
623071	MC	0	11	12	42	2022	0.58	0.62	0.3821	0.3821
623064	MC	0	12	12	43	2022	0.68	0.63	-0.1079	-0.1079
623066	ESR	0	13	12	44	2022	0.56	0.57	0.4451	0.4451
662352	MC	0	14	0	7	2023	0.58	0.56	0.3567	0.3567
662345	MC	0	15	0	8	2023	0.43	0.38	1.1031	1.1031
662348	MC	0	16	3	41	2022	0.45	0.43	0.9846	0.9846
662346	MC	0	17	0	10	2023	0.52	0.48	0.7714	0.7714
662349	MC	0	18	0	11	2023	0.62	0.63	0.0641	0.0641
662350	ESR	0	19	0	12	2023	0.44	0.40	1.0902	1.0902
662347	ESR	0	20	0	13	2023	0.59	0.56	0.2679	0.2679
662344	MC	0	21	0	14	2023	0.60	0.53	0.4964	0.4964
625545	MC	0	22	10	35	2022	0.68	0.62	-0.1464	-0.1464
625547	MC	0	23	10	36	2022	0.69	0.65	-0.2252	-0.2252
632526	MC	0	24	10	37	2022	0.71	0.69	-0.3152	-0.3152
625549	MC	0	25	10	39	2022	0.69	0.60	-0.2177	-0.2177
625546	MC	0	26	10	40	2022	0.53	0.54	0.6245	0.6245
625548	MC	0	27	10	42	2022	0.63	0.58	0.1088	0.1088
625544	ESR	0	28	10	43	2022	0.62	0.57	0.2801	0.2801
625541	MC	0	29	10	44	2022	0.72	0.65	-0.3264	-0.3264
714521	MC	0	41	1	6	2023	0.66	0.67	-0.0156	-0.0156
715024	MC	0	42	6	6	2023	0.44	0.41	1.0171	1.0171
584050	MC	0	43	0	43	2023	0.35	0.37	1.2773	1.2773
663532	MC	0	44	6	44	2023	0.36	0.40	1.3488	1.3488
716183	MC	0	47	4	30	2023	0.69	0.62	-0.2780	-0.2780
716191	MC	0	48	4	29	2023	0.36	0.36	1.3618	1.3618
716181	MC	0	49	4	36	2023	0.75	0.67	-0.6473	-0.6473
716182	MC	0	50	4	34	2023	0.58	0.56	0.2697	0.2697

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
716186	ESR	0	51	4	37	2023	0.68	0.68	-0.0695	-0.0695
716187	MC	0	52	4	38	2023	0.56	0.55	0.5500	0.5500
719098	TDA	0	53	4	39	2023	0.52	0.51	0.8115	0.8115

ELA Grade 8

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
717698	MC	0	1	4	45	2023	0.76	0.79	-0.9664	-0.9664
663488	MC	0	2	1	44	2023	0.34	0.36	1.2491	1.2491
503808	MC	0	3	0	47	2022	0.75	0.74	-0.8024	-0.8024
663373	MC	0	4	1	6	2022	0.48	0.46	0.4802	0.4802
714523	MC	0	5	1	6	2023	0.40	0.39	0.9148	0.9148
710656	MC	0	7	8	30	2023	0.68	0.66	-0.2872	-0.2872
710715	MC	0	8	8	31	2023	0.74	0.71	-0.8216	-0.8216
710665	MC	0	9	8	32	2023	0.79	0.78	-1.1197	-1.1197
710657	MC	0	10	8	33	2023	0.57	0.63	0.1609	0.1609
710655	MC	0	11	8	34	2023	0.70	0.67	-0.4342	-0.4342
710658	MC	0	12	8	36	2023	0.67	0.61	-0.3061	-0.3061
710664	MC	0	13	8	37	2023	0.62	0.61	-0.0250	-0.0250
710689	ESR	0	14	8	38	2023	0.41	0.40	0.8542	0.8775
625570	MC	0	15	0	22	2023	0.50	0.49	0.5562	0.5562
625574	MC	0	16	0	23	2023	0.62	0.64	-0.1909	-0.1909
625577	MC	0	17	11	37	2022	0.46	0.39	0.7769	0.7769
625579	MC	0	18	0	24	2023	0.42	0.44	0.9733	0.9733
625573	ESR	0	19	0	25	2023	0.57	0.57	0.0010	0.0010
625575	MC	0	20	0	26	2023	0.39	0.44	0.7029	0.7029
625572	ESR	0	21	0	27	2023	0.52	0.51	0.2114	0.2114
625578	MC	0	22	0	28	2023	0.53	0.58	0.1053	0.1053
625571	MC	0	23	11	44	2022	0.66	0.64	-0.2277	-0.2277
661133	MC	0	24	2	41	2022	0.77	0.75	-0.9450	-0.9450
661117	MC	0	25	2	37	2022	0.38	0.39	1.1165	1.1165
661121	ESR	0	26	2	39	2022	0.47	0.40	0.6678	0.9051
661124	MC	0	27	2	45	2022	0.43	0.41	0.8627	0.8627
661128	MC	0	28	2	44	2022	0.58	0.57	0.1498	0.1498
661131	ESR	0	29	2	43	2022	0.50	0.48	0.7227	0.7227
663475	MC	0	41	0	4	2023	0.59	0.55	0.2473	0.2473
584100	MC	0	42	6	51	2019	0.44	0.43	0.9842	0.9842
663376	MC	0	43	0	3	2023	0.36	0.36	1.3236	1.3236
714524	MC	0	44	2	6	2023	0.52	0.44	0.4015	0.4015
712071	MC	0	47	1	29	2023	0.51	0.46	0.4253	0.4253
712073	MC	0	48	1	31	2023	0.71	0.71	-0.5553	-0.5553
712077	MC	0	49	1	33	2023	0.71	0.66	-0.4429	-0.4429
712072	MC	0	50	1	35	2023	0.77	0.76	-0.8896	-0.8896

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
712078	ESR	0	51	1	36	2023	0.77	0.75	-0.7645	-0.7645
712075	MC	0	52	1	37	2023	0.69	0.67	-0.3571	-0.3571
715197	TDA	0	53	1	39	2023	0.57	0.58	0.3024	0.3024

Science Grade 4

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
496502	MC	0	1	0	1	2022	0.83	0.84	-0.5423	-0.5423
657980	MC	0	2	1	47	2022	0.64	0.70	0.1939	0.1939
620948	MC	0	3	3	20	2023	0.42	0.45	1.4632	1.4632
617539	MC	0	4	11	49	2022	0.54	0.56	0.9082	0.9082
624015	MC	0	5	0	5	2023	0.53	0.54	1.2726	1.2726
574835	MC	0	6	6	47	2019	0.70	0.72	0.0196	0.0196
579926	MC	0	7	7	47	2019	0.45	0.49	1.2818	1.2818
565986	MC	0	8	0	5	2022	0.41	0.43	1.4474	1.4474
728285	MC	0	9	4	46	2023	0.51	0.54	1.0276	1.0276
617348	MC	0	10	2	21	2023	0.43	0.43	1.4202	1.4202
566208	MC	0	11	7	21	2019	0.77	0.77	-0.3707	-0.3707
574831	MC	0	12	0	9	2023	0.65	0.62	0.2857	0.2857
574826	MC	0	13	0	36	2023	0.44	0.45	1.1115	1.1115
661168	MC	0	14	0	12	2023	0.36	0.36	1.5610	1.5610
576378	MC	0	15	6	22	2019	0.69	0.68	0.0578	0.0578
622360	MC	0	16	2	46	2023	0.37	0.37	1.7300	1.7300
479245	MC	0	17	0	44	2023	0.43	0.41	1.4376	1.4376
728288	MC	0	18	5	48	2023	0.52	0.54	0.9555	0.9555
618935	MC	0	19	0	42	2023	0.44	0.43	1.3710	1.3710
193601	SCR	0	24	6	52	2023	0.68	0.68	0.3101	0.3101
566539	SCR	0	25	0	25	2023	0.45	0.50	1.0968	1.0968
566533	SCR	0	26	0	51	2023	0.68	0.66	-0.0454	-0.0454
494830	MC	0	27	5	23	2019	0.74	0.75	-0.2261	-0.2261
410858	MC	0	28	0	33	2022	0.62	0.65	0.1507	0.1507
661187	MC	0	29	6	46	2022	0.39	0.36	1.5999	1.5999
621088	MC	0	30	4	21	2023	0.36	0.38	1.7087	1.7087
623205	MC	0	31	1	48	2022	0.57	0.63	0.5753	0.5753
661200	MC	0	32	3	46	2022	0.60	0.66	0.6191	0.6191
661154	MC	0	33	10	47	2022	0.40	0.37	1.5637	1.5637
498446	MC	0	34	0	18	2023	0.64	0.65	0.3330	0.3330
657813	MC	0	35	7	47	2022	0.48	0.52	1.1786	1.1786
620971	MC	0	36	1	49	2023	0.54	0.60	0.7645	0.7645
574837	MC	0	37	10	21	2019	0.79	0.79	-0.5140	-0.5140
657989	MC	0	38	8	20	2022	0.55	0.54	0.8148	0.8148
623870	MC	0	39	6	23	2023	0.45	0.45	1.3217	1.3217
622825	MC	0	40	1	48	2023	0.42	0.46	1.2991	1.2991

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
574828	MC	0	41	0	45	2023	0.64	0.67	0.1001	0.1001
624012	MC	0	42	8	23	2022	0.54	0.56	0.8822	0.8822
336960	MC	0	43	0	13	2022	0.34	0.39	1.6110	1.6110
653788	MC	0	44	0	29	2023	0.41	0.42	1.5771	1.5771
657819	MC	0	45	0	14	2023	0.50	0.52	1.0171	1.0171
578317	SCR	0	50	5	52	2019	0.64	0.67	0.4877	0.4877
621211	SCR	0	51	1	52	2022	0.46	0.48	1.2587	1.2587

Science Grade 8

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
653706	MC	0	1	0	38	2023	0.72	0.75	-0.3337	-0.8526
657833	MC	0	2	0	13	2023	0.56	0.56	0.2767	0.2767
623844	MC	0	3	0	42	2023	0.46	0.49	0.7368	0.7368
412150	MC	0	4	0	31	2022	0.40	0.37	0.8166	0.8166
657855	MC	0	5	0	35	2023	0.65	0.67	-0.1908	-0.1908
565993	MC	0	6	6	23	2022	0.60	0.67	0.0112	0.0112
623868	MC	0	7	8	51	2022	0.68	0.71	-0.4243	-0.4243
657847	MC	0	8	2	49	2022	0.38	0.39	1.0422	1.0422
657836	MC	0	9	0	39	2023	0.54	0.61	0.2665	0.2665
657843	MC	0	10	5	23	2022	0.67	0.72	-0.3650	-0.3650
574822	MC	0	11	0	11	2023	0.45	0.51	0.6261	0.6261
622822	MC	0	12	1	24	2022	0.53	0.60	0.2235	0.2235
623843	MC	0	13	1	50	2023	0.41	0.43	0.8736	0.8736
653703	MC	0	14	10	22	2022	0.66	0.68	-0.3299	-0.3299
623141	MC	0	15	2	49	2023	0.55	0.59	0.2886	0.2886
623847	MC	0	16	2	51	2022	0.41	0.39	0.9027	0.9027
617345	MC	0	17	0	15	2023	0.47	0.43	0.8098	0.8098
659841	SCR	0	25	4	54	2022	0.49	0.39	0.7137	0.7137
659844	SCR	0	26	0	52	2023	0.36	0.36	1.2007	1.2007
252548	SCR	0	27	6	54	2023	0.31	0.30	1.5081	1.5081
410883	MC	0	28	0	5	2023	0.68	0.63	-0.3570	-0.3570
498031	MC	0	29	0	44	2023	0.60	0.59	0.1509	0.1509
658045	MC	0	30	11	49	2022	0.59	0.63	0.0520	0.0520
617343	MC	0	31	1	51	2022	0.50	0.55	0.4041	0.4041
301242	MC	0	32	5	51	2023	0.42	0.46	0.9184	0.9184
622838	MC	0	33	4	24	2022	0.57	0.64	0.1637	0.1637
303367	MC	0	34	0	42	2022	0.57	0.56	0.3068	0.3068
401720	MC	0	35	0	12	2022	0.41	0.36	1.0235	1.0235
303678	MC	0	36	0	10	2018	0.56	0.54	0.2820	0.2820
623139	MC	0	37	0	6	2023	0.65	0.60	0.0146	0.0146
411601	MC	0	38	8	50	2018	0.41	0.36	1.0006	1.0006
494525	MC	0	39	10	24	2019	0.50	0.46	0.5396	0.5396
623150	MC	0	40	5	24	2022	0.47	0.48	0.6350	0.6350
657837	MC	0	41	0	2	2023	0.60	0.55	0.3807	0.3807
339836	MC	0	42	0	7	2023	0.50	0.45	0.3937	0.3937
701295	MC	0	43	12	50	2022	0.32	0.37	1.3949	1.3949

PubID	Type	Form	Item Sequence	Previous Form	Previous Item Sequence	Previous Year	Previous *P*-Value	*P*-Value	Previous IRT Difficulty Estimate	IRT Difficulty Estimate
657839	MC	0	44	8	49	2022	0.69	0.70	-0.4829	-0.4829
661151	MC	0	45	6	18	2022	0.44	0.44	0.7992	0.7992
661148	MC	0	46	6	19	2022	0.57	0.56	0.1613	0.1613
661146	MC	0	47	7	18	2022	0.62	0.58	-0.1159	-0.1159
661147	MC	0	48	7	20	2022	0.55	0.57	0.2213	0.2213
658415	SCR	0	52	0	25	2023	0.73	0.65	-0.0242	-0.0242
617537	SCR	0	53	5	54	2023	0.55	0.50	0.5221	0.5221

APPENDIX P: RELIABILITIES

Each table in this appendix provides the number of items (N items), number of students (N), mean score (Mean), standard deviation of raw score (SD), reliability (r), standard error of measurement (SEM), overall (indicated as "All"), and disaggregated by reporting category code (see Chapter Two). Reliability of scores is calculated based on weighted raw scores (ELA only). For each subject and grade level, tables present reliabilities disaggregated by gender, Ethnicity, whether students had an individualized educational plan (IEP), whether students were considered an English Learner (EL), and whether students had a low-income background (Low Income).

Grade 3 Mathematics

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	52	43	112845	27.08	11.67	0.92	3.30	MC*OE
A	All	15	12	112845	7.38	3.64	0.78	1.73	MC*OE
B	All	15	12	112845	7.82	3.91	0.78	1.83	MC*OE
C	All	8	5	112845	4.04	1.99	0.48	1.44	MC*OE
D	All	14	14	112845	7.83	3.33	0.77	1.59	MC

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	52	43	55874	26.28	11.42	0.92	3.32	MC*OE
Total	Male	52	43	56971	27.86	11.87	0.92	3.27	MC*OE
A	Female	15	12	55874	7.05	3.59	0.76	1.75	MC*OE
A	Male	15	12	56971	7.70	3.67	0.79	1.70	MC*OE
B	Female	15	12	55874	7.60	3.84	0.77	1.84	MC*OE
B	Male	15	12	56971	8.05	3.96	0.79	1.82	MC*OE
C	Female	8	5	55874	4.07	1.97	0.46	1.44	MC*OE
C	Male	8	5	56971	4.02	2.02	0.50	1.44	MC*OE
D	Female	14	14	55874	7.56	3.26	0.76	1.61	MC
D	Male	14	14	56971	8.10	3.37	0.78	1.58	MC

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	52	43	202	24.91	11.68	0.92	3.34	MC*OE
Total	African American	52	43	15121	19.08	9.72	0.89	3.28	MC*OE
Total	Hispanic	52	43	16546	21.26	10.50	0.90	3.32	MC*OE
Total	White	52	43	68984	29.85	10.93	0.91	3.24	MC*OE
Total	Multiple Ethnicities	52	43	6485	25.93	11.58	0.92	3.31	MC*OE
Total	Asian	52	43	5416	33.40	11.34	0.92	3.14	MC*OE
Total	Pacific Islander	52	43	91	25.27	11.74	0.92	3.31	MC*OE
A	American Indian	15	12	202	6.65	3.69	0.77	1.76	MC*OE
A	African American	15	12	15121	5.04	3.01	0.66	1.74	MC*OE
A	Hispanic	15	12	16546	5.69	3.23	0.70	1.76	MC*OE
A	White	15	12	68984	8.18	3.48	0.77	1.68	MC*OE
A	Multiple Ethnicities	15	12	6485	7.01	3.61	0.77	1.74	MC*OE
A	Asian	15	12	5416	9.30	3.64	0.80	1.63	MC*OE
A	Pacific Islander	15	12	91	6.93	3.83	0.78	1.79	MC*OE
B	American Indian	15	12	202	7.25	3.91	0.78	1.85	MC*OE
B	African American	15	12	15121	5.43	3.36	0.73	1.75	MC*OE
B	Hispanic	15	12	16546	6.01	3.58	0.75	1.79	MC*OE
B	White	15	12	68984	8.66	3.72	0.76	1.81	MC*OE
B	Multiple Ethnicities	15	12	6485	7.45	3.88	0.78	1.83	MC*OE
B	Asian	15	12	5416	9.86	3.73	0.78	1.74	MC*OE
B	Pacific Islander	15	12	91	7.36	3.88	0.79	1.80	MC*OE
C	American Indian	8	5	202	3.83	1.97	0.42	1.50	MC*OE
C	African American	8	5	15121	2.89	1.82	0.39	1.43	MC*OE
C	Hispanic	8	5	16546	3.22	1.90	0.42	1.45	MC*OE
C	White	8	5	68984	4.44	1.88	0.45	1.39	MC*OE
C	Multiple Ethnicities	8	5	6485	3.90	1.97	0.47	1.43	MC*OE
C	Asian	8	5	5416	4.89	1.95	0.50	1.38	MC*OE
C	Pacific Islander	8	5	91	3.70	1.90	0.43	1.43	MC*OE
D	American Indian	14	14	202	7.18	3.28	0.76	1.60	MC
D	African American	14	14	15121	5.72	2.93	0.68	1.65	MC
D	Hispanic	14	14	16546	6.33	3.10	0.72	1.64	MC
D	White	14	14	68984	8.57	3.13	0.75	1.57	MC
D	Multiple Ethnicities	14	14	6485	7.56	3.33	0.77	1.61	MC
D	Asian	14	14	5416	9.35	3.17	0.77	1.51	MC
D	Pacific Islander	14	14	91	7.27	3.41	0.78	1.59	MC

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	22714	19.91	10.75	0.91	3.30	MC*OE
A	Y	15	12	22714	5.44	3.31	0.72	1.76	MC*OE
B	Y	15	12	22714	5.59	3.58	0.75	1.78	MC*OE
C	Y	8	5	22714	2.94	1.90	0.43	1.43	MC*OE
D	Y	14	14	22714	5.93	3.21	0.74	1.63	MC

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	8157	21.02	10.87	0.91	3.31	MC*OE
A	Y	15	12	8157	5.73	3.36	0.72	1.77	MC*OE
B	Y	15	12	8157	5.96	3.69	0.77	1.78	MC*OE
C	Y	8	5	8157	3.07	1.93	0.44	1.44	MC*OE
D	Y	14	14	8157	6.26	3.15	0.73	1.63	MC

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	58239	22.72	10.75	0.90	3.32	MC*OE
A	Y	15	12	58239	6.10	3.32	0.72	1.76	MC*OE
B	Y	15	12	58239	6.48	3.66	0.75	1.81	MC*OE
C	Y	8	5	58239	3.43	1.91	0.43	1.44	MC*OE
D	Y	14	14	58239	6.71	3.17	0.74	1.63	MC

Grade 4 Mathematics

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	52	43	116862	27.44	11.49	0.92	3.25	MC*OE
A	All	21	21	116862	12.37	4.82	0.84	1.92	MC
B	All	13	10	116862	7.19	3.33	0.75	1.66	MC*OE
C	All	8	5	116862	3.60	2.05	0.52	1.43	MC*OE
D	All	10	7	116862	4.28	2.55	0.68	1.45	MC*OE

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	52	43	57336	26.58	11.14	0.91	3.28	MC*OE
Total	Male	52	43	59526	28.26	11.76	0.92	3.23	MC*OE
A	Female	21	21	57336	11.97	4.64	0.82	1.95	MC
A	Male	21	21	59526	12.75	4.96	0.85	1.89	MC
B	Female	13	10	57336	6.99	3.31	0.74	1.67	MC*OE
B	Male	13	10	59526	7.38	3.35	0.76	1.65	MC*OE
C	Female	8	5	57336	3.55	2.04	0.50	1.44	MC*OE
C	Male	8	5	59526	3.65	2.07	0.53	1.42	MC*OE
D	Female	10	7	57336	4.07	2.46	0.65	1.45	MC*OE
D	Male	10	7	59526	4.48	2.62	0.70	1.44	MC*OE

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	52	43	189	25.15	11.15	0.91	3.29	MC*OE
Total	African American	52	43	16238	19.38	9.01	0.87	3.23	MC*OE
Total	Hispanic	52	43	16818	21.74	10.03	0.89	3.26	MC*OE
Total	White	52	43	71402	30.19	10.86	0.91	3.21	MC*OE
Total	Multiple Ethnicities	52	43	6405	26.13	11.39	0.92	3.26	MC*OE
Total	Asian	52	43	5722	34.22	11.09	0.92	3.08	MC*OE
Total	Pacific Islander	52	43	88	25.57	10.30	0.90	3.27	MC*OE
A	American Indian	21	21	189	11.56	4.81	0.83	1.96	MC
A	African American	21	21	16238	9.19	4.10	0.75	2.05	MC
A	Hispanic	21	21	16818	10.20	4.40	0.79	2.03	MC
A	White	21	21	71402	13.43	4.55	0.83	1.87	MC
A	Multiple Ethnicities	21	21	6405	11.82	4.80	0.84	1.95	MC
A	Asian	21	21	5722	15.12	4.53	0.85	1.73	MC
A	Pacific Islander	21	21	88	11.98	4.65	0.82	1.96	MC
B	American Indian	13	10	189	6.68	3.27	0.74	1.68	MC*OE
B	African American	13	10	16238	5.14	2.93	0.68	1.65	MC*OE
B	Hispanic	13	10	16818	5.63	3.08	0.71	1.66	MC*OE
B	White	13	10	71402	7.91	3.14	0.73	1.63	MC*OE
B	Multiple Ethnicities	13	10	6405	6.86	3.33	0.75	1.67	MC*OE
B	Asian	13	10	5722	8.98	3.13	0.76	1.55	MC*OE
B	Pacific Islander	13	10	88	6.72	3.27	0.73	1.71	MC*OE
C	American Indian	8	5	189	3.25	2.03	0.47	1.48	MC*OE
C	African American	8	5	16238	2.35	1.67	0.35	1.35	MC*OE
C	Hispanic	8	5	16818	2.72	1.86	0.45	1.38	MC*OE
C	White	8	5	71402	4.03	1.99	0.50	1.40	MC*OE
C	Multiple Ethnicities	8	5	6405	3.44	2.03	0.51	1.43	MC*OE
C	Asian	8	5	5722	4.52	2.02	0.54	1.37	MC*OE
C	Pacific Islander	8	5	88	3.39	1.74	0.33	1.43	MC*OE
D	American Indian	10	7	189	3.66	2.34	0.63	1.42	MC*OE
D	African American	10	7	16238	2.70	1.85	0.50	1.31	MC*OE
D	Hispanic	10	7	16818	3.19	2.11	0.59	1.36	MC*OE
D	White	10	7	71402	4.82	2.52	0.67	1.46	MC*OE
D	Multiple Ethnicities	10	7	6405	4.00	2.51	0.67	1.43	MC*OE
D	Asian	10	7	5722	5.60	2.64	0.69	1.47	MC*OE
D	Pacific Islander	10	7	88	3.49	2.12	0.56	1.40	MC*OE

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	24500	20.04	10.17	0.90	3.23	MC*OE
A	Y	21	21	24500	9.39	4.52	0.80	2.03	MC
B	Y	13	10	24500	5.11	3.04	0.71	1.64	MC*OE
C	Y	8	5	24500	2.52	1.83	0.46	1.35	MC*OE
D	Y	10	7	24500	3.02	2.15	0.61	1.35	MC*OE

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	7848	21.92	10.63	0.91	3.25	MC*OE
A	Y	21	21	7848	10.39	4.64	0.81	2.01	MC
B	Y	13	10	7848	5.59	3.21	0.73	1.66	MC*OE
C	Y	8	5	7848	2.66	1.89	0.47	1.38	MC*OE
D	Y	10	7	7848	3.28	2.24	0.63	1.37	MC*OE

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	60470	23.00	10.31	0.90	3.26	MC*OE
A	Y	21	21	60470	10.66	4.49	0.80	2.01	MC
B	Y	13	10	60470	6.03	3.14	0.72	1.67	MC*OE
C	Y	8	5	60470	2.93	1.89	0.45	1.40	MC*OE
D	Y	10	7	60470	3.39	2.20	0.61	1.37	MC*OE

Grade 5 Mathematics

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	52	43	116834	25.91	11.38	0.91	3.36	MC*OE
A	All	27	24	116834	13.30	6.13	0.86	2.28	MC*OE
B	All	8	5	116834	3.52	2.17	0.49	1.54	MC*OE
C	All	7	7	116834	3.95	1.67	0.54	1.13	MC
D	All	10	7	116834	5.14	2.66	0.65	1.57	MC*OE

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	52	43	57220	25.62	11.06	0.91	3.38	MC*OE
Total	Male	52	43	59614	26.18	11.66	0.92	3.33	MC*OE
A	Female	27	24	57220	13.05	5.93	0.85	2.30	MC*OE
A	Male	27	24	59614	13.54	6.31	0.87	2.27	MC*OE
B	Female	8	5	57220	3.54	2.12	0.47	1.54	MC*OE
B	Male	8	5	59614	3.51	2.22	0.52	1.53	MC*OE
C	Female	7	7	57220	3.94	1.65	0.53	1.14	MC
C	Male	7	7	59614	3.96	1.69	0.55	1.13	MC
D	Female	10	7	57220	5.10	2.66	0.64	1.60	MC*OE
D	Male	10	7	59614	5.17	2.66	0.67	1.54	MC*OE

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	52	43	183	23.63	11.15	0.91	3.37	MC*OE
Total	African American	52	43	16540	17.78	8.47	0.85	3.28	MC*OE
Total	Hispanic	52	43	16797	20.20	9.47	0.88	3.33	MC*OE
Total	White	52	43	70846	28.61	10.82	0.91	3.32	MC*OE
Total	Multiple Ethnicities	52	43	6371	24.90	11.30	0.91	3.35	MC*OE
Total	Asian	52	43	5998	33.63	11.34	0.92	3.17	MC*OE
Total	Pacific Islander	52	43	99	24.54	10.48	0.90	3.38	MC*OE
A	American Indian	27	24	183	12.24	6.18	0.86	2.28	MC*OE
A	African American	27	24	16540	9.26	4.67	0.77	2.25	MC*OE
A	Hispanic	27	24	16797	10.39	5.16	0.81	2.27	MC*OE
A	White	27	24	70846	14.63	5.90	0.85	2.28	MC*OE
A	Multiple Ethnicities	27	24	6371	12.80	6.16	0.86	2.28	MC*OE
A	Asian	27	24	5998	17.42	6.18	0.87	2.19	MC*OE
A	Pacific Islander	27	24	99	12.54	5.68	0.83	2.34	MC*OE
B	American Indian	8	5	183	3.04	2.02	0.39	1.58	MC*OE
B	African American	8	5	16540	2.26	1.73	0.30	1.45	MC*OE
B	Hispanic	8	5	16797	2.65	1.85	0.35	1.49	MC*OE
B	White	8	5	70846	3.94	2.13	0.49	1.52	MC*OE
B	Multiple Ethnicities	8	5	6371	3.36	2.16	0.49	1.54	MC*OE
B	Asian	8	5	5998	4.81	2.20	0.59	1.42	MC*OE
B	Pacific Islander	8	5	99	3.22	1.96	0.40	1.52	MC*OE
C	American Indian	7	7	183	3.70	1.63	0.49	1.16	MC
C	African American	7	7	16540	2.95	1.49	0.37	1.18	MC
C	Hispanic	7	7	16797	3.29	1.54	0.42	1.17	MC
C	White	7	7	70846	4.29	1.59	0.51	1.11	MC
C	Multiple Ethnicities	7	7	6371	3.83	1.66	0.53	1.14	MC
C	Asian	7	7	5998	4.68	1.61	0.56	1.07	MC
C	Pacific Islander	7	7	99	3.81	1.52	0.40	1.18	MC
D	American Indian	10	7	183	4.64	2.52	0.61	1.58	MC*OE
D	African American	10	7	16540	3.31	2.15	0.51	1.51	MC*OE
D	Hispanic	10	7	16797	3.87	2.38	0.57	1.55	MC*OE
D	White	10	7	70846	5.75	2.51	0.64	1.52	MC*OE
D	Multiple Ethnicities	10	7	6371	4.91	2.61	0.64	1.56	MC*OE
D	Asian	10	7	5998	6.73	2.52	0.67	1.44	MC*OE
D	Pacific Islander	10	7	99	4.97	2.48	0.60	1.57	MC*OE

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	23533	17.87	9.42	0.88	3.25	MC*OE
A	Y	27	24	23533	9.17	5.12	0.81	2.23	MC*OE
B	Y	8	5	23533	2.26	1.80	0.36	1.44	MC*OE
C	Y	7	7	23533	3.04	1.58	0.45	1.17	MC
D	Y	10	7	23533	3.39	2.32	0.58	1.50	MC*OE

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	8165	20.72	10.25	0.89	3.33	MC*OE
A	Y	27	24	8165	10.80	5.57	0.84	2.26	MC*OE
B	Y	8	5	8165	2.71	1.93	0.41	1.49	MC*OE
C	Y	7	7	8165	3.27	1.60	0.46	1.17	MC
D	Y	10	7	8165	3.93	2.51	0.61	1.57	MC*OE

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	60072	21.47	9.96	0.89	3.35	MC*OE
A	Y	27	24	60072	11.03	5.41	0.82	2.28	MC*OE
B	Y	8	5	60072	2.82	1.94	0.39	1.51	MC*OE
C	Y	7	7	60072	3.45	1.58	0.46	1.16	MC
D	Y	10	7	60072	4.18	2.45	0.59	1.56	MC*OE

Grade 6 Mathematics

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	52	43	116358	25.72	11.78	0.92	3.25	MC*OE
A	All	20	17	116358	10.57	4.87	0.81	2.10	MC*OE
B	All	14	11	116358	6.65	3.52	0.78	1.64	MC*OE
C	All	8	8	116358	4.65	2.26	0.75	1.12	MC
D	All	10	7	116358	3.85	2.38	0.61	1.49	MC*OE

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	52	43	56814	25.83	11.57	0.92	3.25	MC*OE
Total	Male	52	43	59544	25.62	11.97	0.93	3.24	MC*OE
A	Female	20	17	56814	10.51	4.78	0.80	2.11	MC*OE
A	Male	20	17	59544	10.63	4.96	0.82	2.08	MC*OE
B	Female	14	11	56814	6.73	3.47	0.78	1.63	MC*OE
B	Male	14	11	59544	6.58	3.56	0.79	1.64	MC*OE
C	Female	8	8	56814	4.72	2.24	0.75	1.12	MC
C	Male	8	8	59544	4.58	2.28	0.76	1.12	MC
D	Female	10	7	56814	3.88	2.35	0.61	1.47	MC*OE
D	Male	10	7	59544	3.83	2.41	0.61	1.50	MC*OE

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	52	43	194	24.34	11.36	0.92	3.21	MC*OE
Total	African American	52	43	16099	17.57	8.56	0.87	3.14	MC*OE
Total	Hispanic	52	43	16864	19.72	9.61	0.89	3.20	MC*OE
Total	White	52	43	71291	28.43	11.30	0.92	3.22	MC*OE
Total	Multiple Ethnicities	52	43	6026	24.35	11.74	0.92	3.24	MC*OE
Total	Asian	52	43	5778	34.05	11.82	0.93	3.07	MC*OE
Total	Pacific Islander	52	43	106	25.89	12.58	0.93	3.23	MC*OE
A	American Indian	20	17	194	10.02	4.70	0.80	2.11	MC*OE
A	African American	20	17	16099	7.34	3.88	0.72	2.04	MC*OE
A	Hispanic	20	17	16864	8.22	4.22	0.76	2.08	MC*OE
A	White	20	17	71291	11.62	4.64	0.80	2.07	MC*OE
A	Multiple Ethnicities	20	17	6026	10.03	4.86	0.81	2.10	MC*OE
A	Asian	20	17	5778	14.02	4.63	0.83	1.92	MC*OE
A	Pacific Islander	20	17	106	10.62	5.26	0.84	2.09	MC*OE
B	American Indian	14	11	194	6.37	3.62	0.81	1.59	MC*OE
B	African American	14	11	16099	4.49	2.80	0.66	1.62	MC*OE
B	Hispanic	14	11	16864	5.06	3.02	0.70	1.64	MC*OE
B	White	14	11	71291	7.35	3.39	0.78	1.61	MC*OE
B	Multiple Ethnicities	14	11	6026	6.33	3.56	0.79	1.63	MC*OE
B	Asian	14	11	5778	9.02	3.57	0.82	1.52	MC*OE
B	Pacific Islander	14	11	106	6.66	3.76	0.82	1.60	MC*OE
C	American Indian	8	8	194	4.46	2.14	0.72	1.13	MC
C	African American	8	8	16099	3.25	1.77	0.56	1.17	MC
C	Hispanic	8	8	16864	3.65	1.95	0.65	1.16	MC
C	White	8	8	71291	5.12	2.20	0.75	1.10	MC
C	Multiple Ethnicities	8	8	6026	4.37	2.24	0.74	1.13	MC
C	Asian	8	8	5778	5.94	2.18	0.80	0.97	MC
C	Pacific Islander	8	8	106	4.92	2.17	0.72	1.14	MC
D	American Indian	10	7	194	3.49	2.25	0.60	1.41	MC*OE
D	African American	10	7	16099	2.49	1.68	0.40	1.30	MC*OE
D	Hispanic	10	7	16864	2.77	1.89	0.49	1.34	MC*OE
D	White	10	7	71291	4.34	2.38	0.60	1.51	MC*OE
D	Multiple Ethnicities	10	7	6026	3.61	2.32	0.60	1.47	MC*OE
D	Asian	10	7	5778	5.06	2.61	0.65	1.55	MC*OE
D	Pacific Islander	10	7	106	3.69	2.50	0.65	1.48	MC*OE

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	22542	17.11	8.91	0.88	3.12	MC*OE
A	Y	20	17	22542	7.00	3.90	0.74	2.01	MC*OE
B	Y	14	11	22542	4.31	2.77	0.66	1.62	MC*OE
C	Y	8	8	22542	3.31	1.86	0.60	1.17	MC
D	Y	10	7	22542	2.48	1.83	0.48	1.32	MC*OE

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	8046	20.01	10.23	0.90	3.19	MC*OE
A	Y	20	17	8046	8.38	4.45	0.79	2.06	MC*OE
B	Y	14	11	8046	5.12	3.17	0.73	1.64	MC*OE
C	Y	8	8	8046	3.75	2.04	0.68	1.16	MC
D	Y	10	7	8046	2.75	1.95	0.52	1.35	MC*OE

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	58903	21.12	10.18	0.90	3.22	MC*OE
A	Y	20	17	58903	8.76	4.39	0.77	2.09	MC*OE
B	Y	14	11	58903	5.42	3.14	0.73	1.64	MC*OE
C	Y	8	8	58903	3.89	2.05	0.68	1.16	MC
D	Y	10	7	58903	3.05	2.01	0.53	1.38	MC*OE

Grade 7 Mathematics

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	52	43	117279	23.72	11.62	0.92	3.29	MC*OE
A	All	22	19	117279	10.81	5.11	0.82	2.20	MC*OE
B	All	13	10	117279	5.27	3.25	0.76	1.60	MC*OE
C	All	9	9	117279	4.29	2.32	0.67	1.33	MC
D	All	8	5	117279	3.35	2.13	0.63	1.30	MC*OE

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	52	43	57389	23.53	11.38	0.92	3.29	MC*OE
Total	Male	52	43	59890	23.91	11.84	0.92	3.28	MC*OE
A	Female	22	19	57389	10.70	5.01	0.81	2.20	MC*OE
A	Male	22	19	59890	10.92	5.20	0.82	2.19	MC*OE
B	Female	13	10	57389	5.17	3.19	0.75	1.59	MC*OE
B	Male	13	10	59890	5.36	3.30	0.76	1.60	MC*OE
C	Female	9	9	57389	4.24	2.30	0.67	1.33	MC
C	Male	9	9	59890	4.34	2.34	0.68	1.32	MC
D	Female	8	5	57389	3.42	2.10	0.61	1.30	MC*OE
D	Male	8	5	59890	3.28	2.16	0.65	1.29	MC*OE

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	52	43	196	20.51	10.95	0.91	3.27	MC*OE
Total	African American	52	43	16550	16.22	8.42	0.86	3.17	MC*OE
Total	Hispanic	52	43	16679	17.78	9.30	0.88	3.22	MC*OE
Total	White	52	43	72191	26.21	11.25	0.92	3.28	MC*OE
Total	Multiple Ethnicities	52	43	5940	22.63	11.49	0.92	3.29	MC*OE
Total	Asian	52	43	5629	32.80	12.07	0.93	3.15	MC*OE
Total	Pacific Islander	52	43	94	22.61	10.68	0.90	3.36	MC*OE
A	American Indian	22	19	196	9.57	5.02	0.80	2.25	MC*OE
A	African American	22	19	16550	7.74	4.10	0.72	2.17	MC*OE
A	Hispanic	22	19	16679	8.39	4.35	0.75	2.19	MC*OE
A	White	22	19	72191	11.82	4.92	0.81	2.16	MC*OE
A	Multiple Ethnicities	22	19	5940	10.35	5.09	0.81	2.20	MC*OE
A	Asian	22	19	5629	14.69	5.07	0.84	2.00	MC*OE
A	Pacific Islander	22	19	94	10.26	4.92	0.79	2.24	MC*OE
B	American Indian	13	10	196	4.39	3.02	0.74	1.53	MC*OE
B	African American	13	10	16550	3.37	2.31	0.59	1.47	MC*OE
B	Hispanic	13	10	16679	3.79	2.60	0.66	1.52	MC*OE
B	White	13	10	72191	5.89	3.22	0.75	1.60	MC*OE
B	Multiple Ethnicities	13	10	5940	4.98	3.21	0.75	1.60	MC*OE
B	Asian	13	10	5629	7.61	3.52	0.79	1.61	MC*OE
B	Pacific Islander	13	10	94	4.96	2.88	0.68	1.64	MC*OE
C	American Indian	9	9	196	3.68	2.21	0.64	1.33	MC
C	African American	9	9	16550	2.96	1.86	0.50	1.32	MC
C	Hispanic	9	9	16679	3.23	1.99	0.55	1.33	MC
C	White	9	9	72191	4.74	2.26	0.66	1.33	MC
C	Multiple Ethnicities	9	9	5940	4.12	2.29	0.66	1.33	MC
C	Asian	9	9	5629	5.79	2.36	0.73	1.23	MC
C	Pacific Islander	9	9	94	4.21	2.22	0.65	1.32	MC
D	American Indian	8	5	196	2.87	2.02	0.64	1.22	MC*OE
D	African American	8	5	16550	2.15	1.67	0.49	1.19	MC*OE
D	Hispanic	8	5	16679	2.37	1.79	0.54	1.22	MC*OE
D	White	8	5	72191	3.76	2.09	0.61	1.30	MC*OE
D	Multiple Ethnicities	8	5	5940	3.18	2.11	0.63	1.29	MC*OE
D	Asian	8	5	5629	4.72	2.22	0.64	1.33	MC*OE
D	Pacific Islander	8	5	94	3.18	2.05	0.56	1.35	MC*OE

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	22143	14.96	8.21	0.86	3.09	MC*OE
A	Y	22	19	22143	7.04	3.90	0.71	2.11	MC*OE
B	Y	13	10	22143	3.16	2.32	0.61	1.44	MC*OE
C	Y	9	9	22143	2.90	1.85	0.49	1.32	MC
D	Y	8	5	22143	1.87	1.61	0.52	1.12	MC*OE

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	7825	17.94	9.96	0.90	3.21	MC*OE
A	Y	22	19	7825	8.57	4.65	0.78	2.19	MC*OE
B	Y	13	10	7825	3.77	2.72	0.69	1.51	MC*OE
C	Y	9	9	7825	3.29	2.07	0.59	1.32	MC
D	Y	8	5	7825	2.31	1.85	0.56	1.22	MC*OE

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	58701	19.21	9.90	0.89	3.25	MC*OE
A	Y	22	19	58701	8.98	4.58	0.77	2.20	MC*OE
B	Y	13	10	58701	4.12	2.74	0.68	1.54	MC*OE
C	Y	9	9	58701	3.49	2.08	0.59	1.34	MC
D	Y	8	5	58701	2.61	1.88	0.57	1.24	MC*OE

Grade 8 Mathematics

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	52	43	116468	24.46	11.71	0.92	3.38	MC*OE
A	All	8	5	116468	3.33	2.23	0.58	1.45	MC*OE
B	All	27	24	116468	13.07	6.00	0.85	2.34	MC*OE
C	All	9	9	116468	4.73	2.36	0.71	1.27	MC
D	All	8	5	116468	3.33	2.30	0.58	1.49	MC*OE

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	52	43	56206	24.50	11.36	0.91	3.37	MC*OE
Total	Male	52	43	60262	24.42	12.02	0.92	3.38	MC*OE
A	Female	8	5	56206	3.44	2.20	0.56	1.46	MC*OE
A	Male	8	5	60262	3.22	2.25	0.59	1.44	MC*OE
B	Female	27	24	56206	12.98	5.81	0.84	2.33	MC*OE
B	Male	27	24	60262	13.15	6.17	0.85	2.35	MC*OE
C	Female	9	9	56206	4.79	2.29	0.69	1.27	MC
C	Male	9	9	60262	4.68	2.42	0.72	1.27	MC
D	Female	8	5	56206	3.29	2.27	0.58	1.48	MC*OE
D	Male	8	5	60262	3.37	2.32	0.58	1.50	MC*OE

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	52	43	196	21.08	11.08	0.91	3.31	MC*OE
Total	African American	52	43	16294	17.29	8.53	0.86	3.18	MC*OE
Total	Hispanic	52	43	16649	18.79	9.53	0.88	3.23	MC*OE
Total	White	52	43	71931	26.78	11.40	0.91	3.39	MC*OE
Total	Multiple Ethnicities	52	43	5741	23.14	11.45	0.91	3.37	MC*OE
Total	Asian	52	43	5538	33.81	12.41	0.93	3.26	MC*OE
Total	Pacific Islander	52	43	119	25.56	11.80	0.92	3.41	MC*OE
A	American Indian	8	5	196	2.75	2.06	0.54	1.39	MC*OE
A	African American	8	5	16294	2.18	1.78	0.53	1.22	MC*OE
A	Hispanic	8	5	16649	2.43	1.87	0.54	1.27	MC*OE
A	White	8	5	71931	3.69	2.21	0.55	1.48	MC*OE
A	Multiple Ethnicities	8	5	5741	3.12	2.19	0.58	1.43	MC*OE
A	Asian	8	5	5538	4.91	2.32	0.57	1.52	MC*OE
A	Pacific Islander	8	5	119	3.56	2.20	0.56	1.46	MC*OE
B	American Indian	27	24	196	11.52	5.85	0.84	2.31	MC*OE
B	African American	27	24	16294	9.60	4.46	0.74	2.30	MC*OE
B	Hispanic	27	24	16649	10.36	4.93	0.78	2.33	MC*OE
B	White	27	24	71931	14.16	5.88	0.84	2.33	MC*OE
B	Multiple Ethnicities	27	24	5741	12.43	5.86	0.84	2.34	MC*OE
B	Asian	27	24	5538	17.89	6.46	0.88	2.21	MC*OE
B	Pacific Islander	27	24	119	13.68	6.03	0.85	2.37	MC*OE
C	American Indian	9	9	196	4.06	2.34	0.69	1.30	MC
C	African American	9	9	16294	3.47	1.95	0.55	1.31	MC
C	Hispanic	9	9	16649	3.72	2.11	0.61	1.31	MC
C	White	9	9	71931	5.15	2.31	0.70	1.26	MC
C	Multiple Ethnicities	9	9	5741	4.50	2.33	0.70	1.28	MC
C	Asian	9	9	5538	6.24	2.33	0.76	1.14	MC
C	Pacific Islander	9	9	119	4.82	2.41	0.72	1.28	MC
D	American Indian	8	5	196	2.74	2.15	0.58	1.40	MC*OE
D	African American	8	5	16294	2.03	1.76	0.49	1.26	MC*OE
D	Hispanic	8	5	16649	2.28	1.93	0.53	1.32	MC*OE
D	White	8	5	71931	3.78	2.27	0.56	1.51	MC*OE
D	Multiple Ethnicities	8	5	5741	3.09	2.26	0.57	1.48	MC*OE
D	Asian	8	5	5538	4.77	2.33	0.58	1.50	MC*OE
D	Pacific Islander	8	5	119	3.50	2.33	0.58	1.52	MC*OE

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	21784	15.71	7.89	0.84	3.11	MC*OE
A	Y	8	5	21784	1.88	1.55	0.48	1.12	MC*OE
B	Y	27	24	21784	8.83	4.22	0.71	2.29	MC*OE
C	Y	9	9	21784	3.21	1.92	0.53	1.32	MC
D	Y	8	5	21784	1.79	1.65	0.48	1.19	MC*OE

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	7706	18.55	9.67	0.89	3.20	MC*OE
A	Y	8	5	7706	2.41	1.85	0.55	1.23	MC*OE
B	Y	27	24	7706	10.32	5.08	0.79	2.33	MC*OE
C	Y	9	9	7706	3.70	2.15	0.64	1.30	MC
D	Y	8	5	7706	2.13	1.88	0.54	1.28	MC*OE

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	52	43	57517	20.08	10.04	0.89	3.28	MC*OE
A	Y	8	5	57517	2.63	1.97	0.55	1.32	MC*OE
B	Y	27	24	57517	10.93	5.17	0.80	2.33	MC*OE
C	Y	9	9	57517	3.99	2.18	0.64	1.30	MC
D	Y	8	5	57517	2.53	2.02	0.54	1.37	MC*OE

Grade 3 English Language Arts

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	45	35	112499	22.27	8.72	0.88	3.02	ESR*MC*OE
A	All	18	13	112499	8.99	3.79	0.75	1.88	ESR*MC*OE
B	All	18	13	112499	8.64	3.76	0.73	1.94	ESR*MC*OE
D	All	9	9	112499	4.64	2.17	0.62	1.34	MC

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	45	35	55739	23.03	8.72	0.88	3.03	ESR*MC*OE
Total	Male	45	35	56760	21.52	8.65	0.88	3.02	ESR*MC*OE
A	Female	18	13	55739	9.32	3.78	0.75	1.88	ESR*MC*OE
A	Male	18	13	56760	8.67	3.77	0.75	1.88	ESR*MC*OE
B	Female	18	13	55739	8.91	3.77	0.73	1.95	ESR*MC*OE
B	Male	18	13	56760	8.38	3.74	0.73	1.93	ESR*MC*OE
D	Female	9	9	55739	4.81	2.17	0.62	1.33	MC
D	Male	9	9	56760	4.47	2.15	0.61	1.35	MC

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	45	35	202	21.18	8.60	0.87	3.08	ESR*MC*OE
Total	African American	45	35	14998	17.31	7.62	0.85	2.99	ESR*MC*OE
Total	Hispanic	45	35	16473	18.34	7.90	0.86	3.01	ESR*MC*OE
Total	White	45	35	68857	24.10	8.38	0.87	3.02	ESR*MC*OE
Total	Multiple Ethnicities	45	35	6467	21.76	8.78	0.88	3.02	ESR*MC*OE
Total	Asian	45	35	5411	25.41	8.56	0.88	3.00	ESR*MC*OE
Total	Pacific Islander	45	35	91	20.59	8.38	0.87	3.08	ESR*MC*OE
A	American Indian	18	13	202	8.69	3.82	0.74	1.93	ESR*MC*OE
A	African American	18	13	14998	7.12	3.51	0.71	1.88	ESR*MC*OE
A	Hispanic	18	13	16473	7.54	3.57	0.72	1.88	ESR*MC*OE
A	White	18	13	68857	9.67	3.66	0.74	1.87	ESR*MC*OE
A	Multiple Ethnicities	18	13	6467	8.78	3.82	0.76	1.88	ESR*MC*OE
A	Asian	18	13	5411	10.32	3.67	0.75	1.85	ESR*MC*OE
A	Pacific Islander	18	13	91	8.38	3.72	0.75	1.86	ESR*MC*OE
B	American Indian	18	13	202	8.21	3.55	0.69	1.99	ESR*MC*OE
B	African American	18	13	14998	6.71	3.30	0.67	1.89	ESR*MC*OE
B	Hispanic	18	13	16473	7.12	3.42	0.69	1.90	ESR*MC*OE
B	White	18	13	68857	9.35	3.68	0.72	1.95	ESR*MC*OE
B	Multiple Ethnicities	18	13	6467	8.45	3.81	0.74	1.93	ESR*MC*OE
B	Asian	18	13	5411	9.81	3.67	0.72	1.96	ESR*MC*OE
B	Pacific Islander	18	13	91	7.96	3.68	0.70	2.02	ESR*MC*OE
D	American Indian	9	9	202	4.28	2.26	0.65	1.34	MC
D	African American	9	9	14998	3.48	1.93	0.51	1.35	MC
D	Hispanic	9	9	16473	3.68	2.01	0.55	1.35	MC
D	White	9	9	68857	5.08	2.08	0.59	1.34	MC
D	Multiple Ethnicities	9	9	6467	4.52	2.15	0.61	1.35	MC
D	Asian	9	9	5411	5.29	2.21	0.64	1.33	MC
D	Pacific Islander	9	9	91	4.25	2.08	0.57	1.36	MC

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	45	35	22561	16.32	7.62	0.85	2.96	ESR*MC*OE
A	Y	18	13	22561	6.60	3.41	0.70	1.86	ESR*MC*OE
B	Y	18	13	22561	6.29	3.35	0.69	1.86	ESR*MC*OE
D	Y	9	9	22561	3.44	1.96	0.53	1.35	MC

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	45	35	8119	17.02	7.50	0.84	3.01	ESR*MC*OE
A	Y	18	13	8119	7.04	3.41	0.69	1.90	ESR*MC*OE
B	Y	18	13	8119	6.60	3.27	0.66	1.90	ESR*MC*OE
D	Y	9	9	8119	3.38	1.93	0.51	1.35	MC

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	45	35	57983	19.30	8.05	0.86	3.02	ESR*MC*OE
A	Y	18	13	57983	7.86	3.59	0.72	1.89	ESR*MC*OE
B	Y	18	13	57983	7.45	3.48	0.70	1.92	ESR*MC*OE
D	Y	9	9	57983	3.98	2.05	0.56	1.36	MC

Grade 4 English Language Arts

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	63	39	116411	31.57	12.22	0.84	4.82	ESR*MC*TDA
A	All	17	14	116411	9.23	3.82	0.74	1.95	ESR*MC
B	All	21	15	116411	11.05	4.33	0.76	2.12	ESR*MC
D	All	9	9	116411	4.95	2.29	0.70	1.25	MC
E	All	16	1	116411	6.33	3.80			TDA

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	63	39	57168	32.52	12.15	0.84	4.86	ESR*MC*TDA
Total	Male	63	39	59243	30.64	12.21	0.85	4.75	ESR*MC*TDA
A	Female	17	14	57168	9.47	3.78	0.73	1.95	ESR*MC
A	Male	17	14	59243	9.01	3.84	0.74	1.95	ESR*MC
B	Female	21	15	57168	11.24	4.26	0.76	2.11	ESR*MC
B	Male	21	15	59243	10.87	4.38	0.76	2.13	ESR*MC
D	Female	9	9	57168	5.06	2.28	0.71	1.24	MC
D	Male	9	9	59243	4.84	2.29	0.70	1.26	MC
E	Female	16	1	57168	6.76	3.86			TDA
E	Male	16	1	59243	5.92	3.70			TDA

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	63	39	185	29.30	12.04	0.84	4.75	ESR*MC*TDA
Total	African American	63	39	16113	24.03	10.70	0.82	4.54	ESR*MC*TDA
Total	Hispanic	63	39	16747	25.72	11.28	0.83	4.68	ESR*MC*TDA
Total	White	63	39	71207	34.27	11.49	0.83	4.73	ESR*MC*TDA
Total	Multiple Ethnicities	63	39	6375	30.73	12.28	0.85	4.81	ESR*MC*TDA
Total	Asian	63	39	5696	37.31	11.84	0.84	4.75	ESR*MC*TDA
Total	Pacific Islander	63	39	88	30.10	11.99	0.85	4.62	ESR*MC*TDA
A	American Indian	17	14	185	8.63	3.82	0.73	1.99	ESR*MC
A	African American	17	14	16113	7.31	3.53	0.69	1.96	ESR*MC
A	Hispanic	17	14	16747	7.77	3.64	0.71	1.96	ESR*MC
A	White	17	14	71207	9.92	3.66	0.72	1.94	ESR*MC
A	Multiple Ethnicities	17	14	6375	9.05	3.84	0.74	1.95	ESR*MC
A	Asian	17	14	5696	10.71	3.68	0.74	1.89	ESR*MC
A	Pacific Islander	17	14	88	8.42	3.86	0.75	1.93	ESR*MC
B	American Indian	21	15	185	10.23	4.39	0.77	2.10	ESR*MC
B	African American	21	15	16113	8.60	3.90	0.71	2.09	ESR*MC
B	Hispanic	21	15	16747	9.25	4.03	0.73	2.11	ESR*MC
B	White	21	15	71207	11.93	4.14	0.74	2.12	ESR*MC
B	Multiple Ethnicities	21	15	6375	10.76	4.33	0.76	2.12	ESR*MC
B	Asian	21	15	5696	12.70	4.17	0.74	2.12	ESR*MC
B	Pacific Islander	21	15	88	10.56	4.27	0.77	2.05	ESR*MC
D	American Indian	9	9	185	4.65	2.35	0.72	1.24	MC
D	African American	9	9	16113	3.65	2.03	0.60	1.29	MC
D	Hispanic	9	9	16747	3.93	2.12	0.63	1.29	MC
D	White	9	9	71207	5.41	2.18	0.68	1.24	MC
D	Multiple Ethnicities	9	9	6375	4.80	2.30	0.71	1.25	MC
D	Asian	9	9	5696	5.91	2.21	0.72	1.17	MC
D	Pacific Islander	9	9	88	5.03	2.15	0.64	1.29	MC
E	American Indian	16	1	185	5.79	3.68			TDA
E	African American	16	1	16113	4.48	3.40			TDA
E	Hispanic	16	1	16747	4.77	3.59			TDA
E	White	16	1	71207	7.01	3.67			TDA
E	Multiple Ethnicities	16	1	6375	6.12	3.79			TDA
E	Asian	16	1	5696	7.99	3.77			TDA
E	Pacific Islander	16	1	88	6.09	3.59			TDA

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	24353	22.43	10.87	0.83	4.52	ESR*MC*TDA
A	Y	17	14	24353	6.74	3.46	0.69	1.93	ESR*MC
B	Y	21	15	24353	8.22	4.00	0.73	2.09	ESR*MC
D	Y	9	9	24353	3.56	2.09	0.62	1.29	MC
E	Y	16	1	24353	3.91	3.40			TDA

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	7809	24.19	11.35	0.82	4.79	ESR*MC*TDA
A	Y	17	14	7809	7.25	3.54	0.69	1.96	ESR*MC
B	Y	21	15	7809	8.68	3.99	0.72	2.10	ESR*MC
D	Y	9	9	7809	3.70	2.09	0.62	1.29	MC
E	Y	16	1	7809	4.55	3.76			TDA

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	60162	27.08	11.33	0.83	4.65	ESR*MC*TDA
A	Y	17	14	60162	8.11	3.67	0.71	1.97	ESR*MC
B	Y	21	15	60162	9.62	4.09	0.73	2.12	ESR*MC
D	Y	9	9	60162	4.20	2.16	0.65	1.28	MC
E	Y	16	1	60162	5.14	3.54			TDA

Grade 5 English Language Arts

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	63	39	116698	32.85	12.03	0.85	4.69	ESR*MC*TDA
A	All	19	15	116698	11.13	4.40	0.80	1.95	ESR*MC
B	All	19	14	116698	10.24	3.96	0.74	2.03	ESR*MC
D	All	9	9	116698	3.68	2.14	0.61	1.34	MC
E	All	16	1	116698	7.80	3.65			TDA

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	63	39	57151	34.06	11.76	0.84	4.64	ESR*MC*TDA
Total	Male	63	39	59547	31.69	12.16	0.85	4.67	ESR*MC*TDA
A	Female	19	15	57151	11.55	4.29	0.80	1.93	ESR*MC
A	Male	19	15	59547	10.73	4.47	0.81	1.96	ESR*MC
B	Female	19	14	57151	10.29	3.83	0.72	2.04	ESR*MC
B	Male	19	14	59547	10.19	4.08	0.75	2.02	ESR*MC
D	Female	9	9	57151	3.82	2.18	0.62	1.34	MC
D	Male	9	9	59547	3.55	2.10	0.59	1.34	MC
E	Female	16	1	57151	8.40	3.58			TDA
E	Male	16	1	59547	7.22	3.61			TDA

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	63	39	183	31.18	12.33	0.86	4.69	ESR*MC*TDA
Total	African American	63	39	16494	25.32	10.45	0.80	4.65	ESR*MC*TDA
Total	Hispanic	63	39	16782	27.22	11.04	0.81	4.76	ESR*MC*TDA
Total	White	63	39	70782	35.49	11.36	0.84	4.54	ESR*MC*TDA
Total	Multiple Ethnicities	63	39	6374	32.11	12.01	0.85	4.70	ESR*MC*TDA
Total	Asian	63	39	5985	39.08	11.17	0.84	4.49	ESR*MC*TDA
Total	Pacific Islander	63	39	98	31.41	11.18	0.82	4.70	ESR*MC*TDA
A	American Indian	19	15	183	10.56	4.58	0.81	1.97	ESR*MC
A	African American	19	15	16494	8.73	4.08	0.76	2.01	ESR*MC
A	Hispanic	19	15	16782	9.32	4.16	0.77	2.02	ESR*MC
A	White	19	15	70782	11.98	4.20	0.79	1.91	ESR*MC
A	Multiple Ethnicities	19	15	6374	10.89	4.41	0.80	1.95	ESR*MC
A	Asian	19	15	5985	13.04	3.92	0.78	1.84	ESR*MC
A	Pacific Islander	19	15	98	10.56	4.42	0.81	1.94	ESR*MC
B	American Indian	19	14	183	9.61	3.84	0.73	1.98	ESR*MC
B	African American	19	14	16494	7.98	3.46	0.66	2.01	ESR*MC
B	Hispanic	19	14	16782	8.60	3.64	0.69	2.03	ESR*MC
B	White	19	14	70782	11.03	3.82	0.72	2.03	ESR*MC
B	Multiple Ethnicities	19	14	6374	10.06	3.95	0.73	2.03	ESR*MC
B	Asian	19	14	5985	11.99	3.74	0.71	2.02	ESR*MC
B	Pacific Islander	19	14	98	9.98	3.66	0.70	2.02	ESR*MC
D	American Indian	9	9	183	3.33	2.16	0.64	1.31	MC
D	African American	9	9	16494	2.55	1.71	0.43	1.29	MC
D	Hispanic	9	9	16782	2.86	1.84	0.49	1.32	MC
D	White	9	9	70782	4.08	2.14	0.60	1.36	MC
D	Multiple Ethnicities	9	9	6374	3.57	2.13	0.61	1.34	MC
D	Asian	9	9	5985	4.49	2.25	0.64	1.34	MC
D	Pacific Islander	9	9	98	3.52	1.76	0.36	1.41	MC
E	American Indian	16	1	183	7.67	3.68			TDA
E	African American	16	1	16494	6.05	3.54			TDA
E	Hispanic	16	1	16782	6.44	3.68			TDA
E	White	16	1	70782	8.40	3.43			TDA
E	Multiple Ethnicities	16	1	6374	7.59	3.64			TDA
E	Asian	16	1	5985	9.56	3.41			TDA
E	Pacific Islander	16	1	98	7.35	3.62			TDA

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	23467	22.98	10.46	0.81	4.58	ESR*MC*TDA
A	Y	19	15	23467	7.83	3.98	0.75	2.00	ESR*MC
B	Y	19	14	23467	7.48	3.56	0.69	1.98	ESR*MC
D	Y	9	9	23467	2.57	1.75	0.46	1.29	MC
E	Y	16	1	23467	5.10	3.48			TDA

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	8151	25.78	11.19	0.80	4.96	ESR*MC*TDA
A	Y	19	15	8151	8.80	4.10	0.76	2.02	ESR*MC
B	Y	19	14	8151	8.15	3.65	0.69	2.03	ESR*MC
D	Y	9	9	8151	2.70	1.74	0.43	1.31	MC
E	Y	16	1	8151	6.12	3.95			TDA

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	59997	28.39	11.15	0.82	4.68	ESR*MC*TDA
A	Y	19	15	59997	9.70	4.23	0.78	2.00	ESR*MC
B	Y	19	14	59997	8.92	3.71	0.70	2.03	ESR*MC
D	Y	9	9	59997	3.03	1.91	0.52	1.33	MC
E	Y	16	1	59997	6.74	3.58			TDA

Grade 6 English Language Arts

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	63	39	116426	32.45	11.26	0.84	4.56	ESR*MC*TDA
A	All	20	15	116426	10.22	4.03	0.74	2.04	ESR*MC
B	All	18	14	116426	9.60	4.03	0.76	1.97	ESR*MC
D	All	9	9	116426	4.57	1.98	0.53	1.36	MC
E	All	16	1	116426	8.06	3.43			TDA

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	63	39	56856	34.03	11.14	0.84	4.51	ESR*MC*TDA
Total	Male	63	39	59570	30.95	11.16	0.83	4.56	ESR*MC*TDA
A	Female	20	15	56856	10.73	4.03	0.75	2.02	ESR*MC
A	Male	20	15	59570	9.73	3.98	0.73	2.06	ESR*MC
B	Female	18	14	56856	9.92	3.99	0.76	1.97	ESR*MC
B	Male	18	14	59570	9.30	4.04	0.76	1.97	ESR*MC
D	Female	9	9	56856	4.77	1.98	0.53	1.35	MC
D	Male	9	9	59570	4.38	1.97	0.52	1.36	MC
E	Female	16	1	56856	8.61	3.36			TDA
E	Male	16	1	59570	7.53	3.40			TDA

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	63	39	193	31.11	10.76	0.82	4.51	ESR*MC*TDA
Total	African American	63	39	16142	26.09	10.05	0.79	4.59	ESR*MC*TDA
Total	Hispanic	63	39	16865	27.24	10.52	0.80	4.65	ESR*MC*TDA
Total	White	63	39	71305	34.69	10.63	0.83	4.39	ESR*MC*TDA
Total	Multiple Ethnicities	63	39	6032	31.74	11.41	0.84	4.59	ESR*MC*TDA
Total	Asian	63	39	5782	38.70	10.85	0.83	4.46	ESR*MC*TDA
Total	Pacific Islander	63	39	107	32.13	11.69	0.84	4.71	ESR*MC*TDA
A	American Indian	20	15	193	9.89	3.86	0.73	2.02	ESR*MC
A	African American	20	15	16142	8.30	3.67	0.69	2.05	ESR*MC
A	Hispanic	20	15	16865	8.71	3.81	0.71	2.05	ESR*MC
A	White	20	15	71305	10.88	3.91	0.73	2.03	ESR*MC
A	Multiple Ethnicities	20	15	6032	9.98	4.07	0.75	2.04	ESR*MC
A	Asian	20	15	5782	12.17	3.91	0.74	1.99	ESR*MC
A	Pacific Islander	20	15	107	9.96	4.31	0.77	2.07	ESR*MC
B	American Indian	18	14	193	9.10	3.82	0.73	2.00	ESR*MC
B	African American	18	14	16142	7.55	3.60	0.71	1.96	ESR*MC
B	Hispanic	18	14	16865	7.95	3.72	0.72	1.96	ESR*MC
B	White	18	14	71305	10.32	3.90	0.74	1.97	ESR*MC
B	Multiple Ethnicities	18	14	6032	9.42	4.09	0.77	1.97	ESR*MC
B	Asian	18	14	5782	11.51	3.84	0.75	1.93	ESR*MC
B	Pacific Islander	18	14	107	9.75	4.21	0.79	1.95	ESR*MC
D	American Indian	9	9	193	4.39	1.96	0.52	1.35	MC
D	African American	9	9	16142	3.71	1.80	0.42	1.37	MC
D	Hispanic	9	9	16865	3.88	1.85	0.45	1.38	MC
D	White	9	9	71305	4.87	1.95	0.52	1.35	MC
D	Multiple Ethnicities	9	9	6032	4.49	1.98	0.53	1.36	MC
D	Asian	9	9	5782	5.39	1.95	0.54	1.32	MC
D	Pacific Islander	9	9	107	4.68	1.94	0.51	1.36	MC
E	American Indian	16	1	193	7.73	3.34			TDA
E	African American	16	1	16142	6.53	3.43			TDA
E	Hispanic	16	1	16865	6.70	3.52			TDA
E	White	16	1	71305	8.62	3.18			TDA
E	Multiple Ethnicities	16	1	6032	7.85	3.46			TDA
E	Asian	16	1	5782	9.63	3.35			TDA
E	Pacific Islander	16	1	107	7.74	3.61			TDA

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	22555	23.17	9.46	0.77	4.56	ESR*MC*TDA
A	Y	20	15	22555	7.47	3.43	0.65	2.04	ESR*MC
B	Y	18	14	22555	6.77	3.37	0.67	1.93	ESR*MC
D	Y	9	9	22555	3.42	1.79	0.41	1.37	MC
E	Y	16	1	22555	5.51	3.41			TDA

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	8041	25.53	10.67	0.79	4.90	ESR*MC*TDA
A	Y	20	15	8041	8.14	3.71	0.70	2.04	ESR*MC
B	Y	18	14	8041	7.42	3.56	0.70	1.95	ESR*MC
D	Y	9	9	8041	3.65	1.85	0.44	1.38	MC
E	Y	16	1	8041	6.31	3.87			TDA

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	59006	28.49	10.48	0.81	4.56	ESR*MC*TDA
A	Y	20	15	59006	9.00	3.81	0.71	2.05	ESR*MC
B	Y	18	14	59006	8.32	3.78	0.73	1.97	ESR*MC
D	Y	9	9	59006	4.05	1.88	0.47	1.37	MC
E	Y	16	1	59006	7.11	3.38			TDA

Grade 7 English Language Arts

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	63	39	117431	33.56	12.48	0.86	4.72	ESR*MC*TDA
A	All	19	15	117431	11.19	4.47	0.81	1.94	ESR*MC
B	All	19	14	117431	10.28	4.47	0.79	2.04	ESR*MC
D	All	9	9	117431	4.56	2.00	0.54	1.35	MC
E	All	16	1	117431	7.53	3.68			TDA

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	63	39	57437	35.33	12.18	0.85	4.67	ESR*MC*TDA
Total	Male	63	39	59994	31.87	12.53	0.86	4.69	ESR*MC*TDA
A	Female	19	15	57437	11.93	4.33	0.81	1.90	ESR*MC
A	Male	19	15	59994	10.49	4.48	0.81	1.96	ESR*MC
B	Female	19	14	57437	10.47	4.37	0.78	2.04	ESR*MC
B	Male	19	14	59994	10.10	4.55	0.80	2.04	ESR*MC
D	Female	9	9	57437	4.76	1.99	0.55	1.33	MC
D	Male	9	9	59994	4.36	2.00	0.53	1.37	MC
E	Female	16	1	57437	8.16	3.63			TDA
E	Male	16	1	59994	6.92	3.62			TDA

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	63	39	196	30.84	12.22	0.85	4.72	ESR*MC*TDA
Total	African American	63	39	16571	26.77	10.93	0.82	4.58	ESR*MC*TDA
Total	Hispanic	63	39	16703	27.68	11.46	0.83	4.66	ESR*MC*TDA
Total	White	63	39	72290	35.94	11.91	0.85	4.60	ESR*MC*TDA
Total	Multiple Ethnicities	63	39	5953	32.85	12.61	0.86	4.75	ESR*MC*TDA
Total	Asian	63	39	5626	41.34	11.74	0.85	4.58	ESR*MC*TDA
Total	Pacific Islander	63	39	92	33.03	11.77	0.84	4.68	ESR*MC*TDA
A	American Indian	19	15	196	10.42	4.37	0.80	1.97	ESR*MC
A	African American	19	15	16571	9.21	4.16	0.77	2.01	ESR*MC
A	Hispanic	19	15	16703	9.43	4.25	0.78	2.00	ESR*MC
A	White	19	15	72290	11.89	4.33	0.80	1.91	ESR*MC
A	Multiple Ethnicities	19	15	5953	11.04	4.52	0.82	1.94	ESR*MC
A	Asian	19	15	5626	13.48	3.98	0.80	1.77	ESR*MC
A	Pacific Islander	19	15	92	10.95	4.38	0.80	1.94	ESR*MC
B	American Indian	19	14	196	9.35	4.23	0.77	2.03	ESR*MC
B	African American	19	14	16571	7.99	3.96	0.73	2.07	ESR*MC
B	Hispanic	19	14	16703	8.37	4.09	0.75	2.06	ESR*MC
B	White	19	14	72290	11.08	4.33	0.78	2.02	ESR*MC
B	Multiple Ethnicities	19	14	5953	10.06	4.48	0.79	2.04	ESR*MC
B	Asian	19	14	5626	12.73	4.14	0.79	1.89	ESR*MC
B	Pacific Islander	19	14	92	10.01	4.17	0.75	2.08	ESR*MC
D	American Indian	9	9	196	4.21	1.96	0.52	1.35	MC
D	African American	9	9	16571	3.69	1.77	0.42	1.35	MC
D	Hispanic	9	9	16703	3.84	1.85	0.46	1.36	MC
D	White	9	9	72290	4.86	1.97	0.53	1.35	MC
D	Multiple Ethnicities	9	9	5953	4.50	2.00	0.54	1.35	MC
D	Asian	9	9	5626	5.48	2.01	0.58	1.30	MC
D	Pacific Islander	9	9	92	4.38	2.03	0.55	1.36	MC
E	American Indian	16	1	196	6.86	3.67			TDA
E	African American	16	1	16571	5.87	3.40			TDA
E	Hispanic	16	1	16703	6.05	3.53			TDA
E	White	16	1	72290	8.10	3.52			TDA
E	Multiple Ethnicities	16	1	5953	7.25	3.72			TDA
E	Asian	16	1	5626	9.65	3.67			TDA
E	Pacific Islander	16	1	92	7.70	3.57			TDA

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	22210	22.90	9.95	0.80	4.40	ESR*MC*TDA
A	Y	19	15	22210	7.82	3.81	0.72	2.01	ESR*MC
B	Y	19	14	22210	7.04	3.71	0.70	2.04	ESR*MC
D	Y	9	9	22210	3.29	1.75	0.40	1.36	MC
E	Y	16	1	22210	4.74	3.14			TDA

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	7801	25.86	11.41	0.82	4.86	ESR*MC*TDA
A	Y	19	15	7801	8.62	4.04	0.75	2.01	ESR*MC
B	Y	19	14	7801	7.88	4.01	0.74	2.05	ESR*MC
D	Y	9	9	7801	3.57	1.78	0.43	1.35	MC
E	Y	16	1	7801	5.78	3.80			TDA

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	58812	29.09	11.60	0.84	4.65	ESR*MC*TDA
A	Y	19	15	58812	9.84	4.31	0.79	2.00	ESR*MC
B	Y	19	14	58812	8.82	4.19	0.76	2.07	ESR*MC
D	Y	9	9	58812	4.01	1.88	0.48	1.36	MC
E	Y	16	1	58812	6.41	3.51			TDA

Grade 8 English Language Arts

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	63	39	116655	34.41	11.65	0.84	4.72	ESR*MC*TDA
A	All	19	15	116655	10.99	4.17	0.78	1.96	ESR*MC
B	All	19	14	116655	10.12	3.88	0.74	1.99	ESR*MC
D	All	9	9	116655	4.54	2.06	0.59	1.33	MC
E	All	16	1	116655	8.77	3.69			TDA

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	63	39	56363	36.30	11.30	0.83	4.60	ESR*MC*TDA
Total	Male	63	39	60292	32.65	11.70	0.84	4.71	ESR*MC*TDA
A	Female	19	15	56363	11.57	3.99	0.77	1.92	ESR*MC
A	Male	19	15	60292	10.44	4.25	0.78	1.99	ESR*MC
B	Female	19	14	56363	10.33	3.81	0.72	2.00	ESR*MC
B	Male	19	14	60292	9.92	3.94	0.75	1.99	ESR*MC
D	Female	9	9	56363	4.82	2.08	0.60	1.32	MC
D	Male	9	9	60292	4.27	2.01	0.56	1.33	MC
E	Female	16	1	56363	9.58	3.55			TDA
E	Male	16	1	60292	8.01	3.66			TDA

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	63	39	197	31.22	10.93	0.82	4.67	ESR*MC*TDA
Total	African American	63	39	16318	28.71	10.54	0.81	4.62	ESR*MC*TDA
Total	Hispanic	63	39	16664	28.95	11.11	0.82	4.74	ESR*MC*TDA
Total	White	63	39	72063	36.46	11.09	0.83	4.61	ESR*MC*TDA
Total	Multiple Ethnicities	63	39	5752	33.77	11.68	0.83	4.80	ESR*MC*TDA
Total	Asian	63	39	5542	41.69	10.96	0.83	4.50	ESR*MC*TDA
Total	Pacific Islander	63	39	119	36.03	11.16	0.83	4.64	ESR*MC*TDA
A	American Indian	19	15	197	9.86	3.93	0.74	2.02	ESR*MC
A	African American	19	15	16318	9.25	3.93	0.74	2.01	ESR*MC
A	Hispanic	19	15	16664	9.25	4.07	0.76	2.01	ESR*MC
A	White	19	15	72063	11.63	4.01	0.77	1.93	ESR*MC
A	Multiple Ethnicities	19	15	5752	10.86	4.17	0.78	1.96	ESR*MC
A	Asian	19	15	5542	13.09	3.78	0.77	1.82	ESR*MC
A	Pacific Islander	19	15	119	11.50	4.03	0.78	1.88	ESR*MC
B	American Indian	19	14	197	9.27	3.87	0.74	1.99	ESR*MC
B	African American	19	14	16318	8.40	3.63	0.70	1.99	ESR*MC
B	Hispanic	19	14	16664	8.58	3.72	0.71	1.99	ESR*MC
B	White	19	14	72063	10.71	3.74	0.72	1.99	ESR*MC
B	Multiple Ethnicities	19	14	5752	9.97	3.86	0.73	1.99	ESR*MC
B	Asian	19	14	5542	12.29	3.70	0.72	1.96	ESR*MC
B	Pacific Islander	19	14	119	10.49	3.95	0.73	2.04	ESR*MC
D	American Indian	9	9	197	4.09	1.99	0.55	1.33	MC
D	African American	9	9	16318	3.61	1.83	0.47	1.33	MC
D	Hispanic	9	9	16664	3.67	1.89	0.50	1.34	MC
D	White	9	9	72063	4.88	2.01	0.57	1.32	MC
D	Multiple Ethnicities	9	9	5752	4.47	2.06	0.59	1.32	MC
D	Asian	9	9	5542	5.48	2.07	0.62	1.28	MC
D	Pacific Islander	9	9	119	4.74	2.06	0.59	1.32	MC
E	American Indian	16	1	197	8.00	3.57			TDA
E	African American	16	1	16318	7.45	3.50			TDA
E	Hispanic	16	1	16664	7.45	3.68			TDA
E	White	16	1	72063	9.24	3.55			TDA
E	Multiple Ethnicities	16	1	5752	8.47	3.80			TDA
E	Asian	16	1	5542	10.83	3.50			TDA
E	Pacific Islander	16	1	119	9.31	3.57			TDA

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	21843	24.14	9.63	0.78	4.52	ESR*MC*TDA
A	Y	19	15	21843	7.70	3.70	0.70	2.03	ESR*MC
B	Y	19	14	21843	7.33	3.39	0.66	1.97	ESR*MC
D	Y	9	9	21843	3.19	1.75	0.41	1.34	MC
E	Y	16	1	21843	5.94	3.34			TDA

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	7713	26.26	10.87	0.79	4.93	ESR*MC*TDA
A	Y	19	15	7713	8.30	3.86	0.72	2.03	ESR*MC
B	Y	19	14	7713	7.83	3.58	0.69	1.98	ESR*MC
D	Y	9	9	7713	3.20	1.78	0.44	1.33	MC
E	Y	16	1	7713	6.92	3.92			TDA

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	63	39	57621	30.45	11.10	0.82	4.69	ESR*MC*TDA
A	Y	19	15	57621	9.74	4.09	0.76	2.00	ESR*MC
B	Y	19	14	57621	8.99	3.75	0.72	2.00	ESR*MC
D	Y	9	9	57621	3.94	1.94	0.52	1.34	MC
E	Y	16	1	57621	7.79	3.61			TDA

Grade 4 Science

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	48	43	116630	26.45	9.29	0.89	3.10	MC*SCR
A	All	24	22	116630	14.16	5.14	0.82	2.17	MC*SCR
B	All	8	7	116630	4.04	1.85	0.49	1.33	MC*SCR
C	All	8	7	116630	4.40	1.87	0.59	1.19	MC*SCR
D	All	8	7	116630	3.84	1.88	0.51	1.31	MC*SCR

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	48	43	57220	26.19	8.90	0.88	3.10	MC*SCR
Total	Male	48	43	59410	26.69	9.64	0.90	3.09	MC*SCR
A	Female	24	22	57220	14.05	4.99	0.81	2.17	MC*SCR
A	Male	24	22	59410	14.26	5.27	0.83	2.17	MC*SCR
B	Female	8	7	57220	4.01	1.80	0.46	1.32	MC*SCR
B	Male	8	7	59410	4.07	1.91	0.52	1.32	MC*SCR
C	Female	8	7	57220	4.35	1.79	0.55	1.20	MC*SCR
C	Male	8	7	59410	4.46	1.93	0.62	1.19	MC*SCR
D	Female	8	7	57220	3.77	1.83	0.48	1.32	MC*SCR
D	Male	8	7	59410	3.91	1.93	0.54	1.31	MC*SCR

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	48	43	186	24.20	9.28	0.89	3.13	MC*SCR
Total	African American	48	43	16167	20.09	8.11	0.84	3.19	MC*SCR
Total	Hispanic	48	43	16776	21.81	8.65	0.86	3.18	MC*SCR
Total	White	48	43	71305	28.77	8.58	0.87	3.05	MC*SCR
Total	Multiple Ethnicities	48	43	6401	25.71	9.25	0.89	3.12	MC*SCR
Total	Asian	48	43	5707	29.98	8.87	0.89	3.00	MC*SCR
Total	Pacific Islander	48	43	88	24.51	7.98	0.84	3.18	MC*SCR
A	American Indian	24	22	186	12.98	5.13	0.81	2.23	MC*SCR
A	African American	24	22	16167	10.70	4.67	0.76	2.28	MC*SCR
A	Hispanic	24	22	16776	11.67	4.92	0.79	2.26	MC*SCR
A	White	24	22	71305	15.41	4.71	0.80	2.12	MC*SCR
A	Multiple Ethnicities	24	22	6401	13.77	5.13	0.82	2.19	MC*SCR
A	Asian	24	22	5707	16.04	4.77	0.81	2.07	MC*SCR
A	Pacific Islander	24	22	88	13.42	4.41	0.74	2.26	MC*SCR
B	American Indian	8	7	186	3.81	1.74	0.39	1.36	MC*SCR
B	African American	8	7	16167	3.15	1.69	0.35	1.36	MC*SCR
B	Hispanic	8	7	16776	3.37	1.76	0.40	1.36	MC*SCR
B	White	8	7	71305	4.37	1.80	0.48	1.30	MC*SCR
B	Multiple Ethnicities	8	7	6401	3.92	1.84	0.48	1.33	MC*SCR
B	Asian	8	7	5707	4.52	1.85	0.52	1.28	MC*SCR
B	Pacific Islander	8	7	88	3.48	1.76	0.43	1.33	MC*SCR
C	American Indian	8	7	186	3.98	1.83	0.59	1.17	MC*SCR
C	African American	8	7	16167	3.43	1.73	0.50	1.22	MC*SCR
C	Hispanic	8	7	16776	3.63	1.77	0.53	1.21	MC*SCR
C	White	8	7	71305	4.77	1.78	0.56	1.18	MC*SCR
C	Multiple Ethnicities	8	7	6401	4.29	1.86	0.59	1.20	MC*SCR
C	Asian	8	7	5707	5.01	1.86	0.61	1.15	MC*SCR
C	Pacific Islander	8	7	88	4.17	1.63	0.42	1.24	MC*SCR
D	American Indian	8	7	186	3.43	1.95	0.56	1.29	MC*SCR
D	African American	8	7	16167	2.81	1.67	0.39	1.30	MC*SCR
D	Hispanic	8	7	16776	3.13	1.77	0.45	1.31	MC*SCR
D	White	8	7	71305	4.21	1.82	0.48	1.31	MC*SCR
D	Multiple Ethnicities	8	7	6401	3.72	1.85	0.49	1.32	MC*SCR
D	Asian	8	7	5707	4.41	1.83	0.49	1.31	MC*SCR
D	Pacific Islander	8	7	88	3.44	1.64	0.33	1.34	MC*SCR

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	48	43	24436	20.61	8.98	0.88	3.17	MC*SCR
A	Y	24	22	24436	10.96	5.02	0.80	2.25	MC*SCR
B	Y	8	7	24436	3.25	1.82	0.44	1.36	MC*SCR
C	Y	8	7	24436	3.44	1.83	0.55	1.23	MC*SCR
D	Y	8	7	24436	2.97	1.80	0.48	1.29	MC*SCR

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	48	43	7842	20.49	8.58	0.86	3.19	MC*SCR
A	Y	24	22	7842	10.96	4.89	0.79	2.27	MC*SCR
B	Y	8	7	7842	3.18	1.72	0.37	1.37	MC*SCR
C	Y	8	7	7842	3.40	1.78	0.52	1.22	MC*SCR
D	Y	8	7	7842	2.95	1.75	0.44	1.31	MC*SCR

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	48	43	60304	23.03	8.76	0.87	3.17	MC*SCR
A	Y	24	22	60304	12.33	4.96	0.79	2.25	MC*SCR
B	Y	8	7	60304	3.56	1.78	0.42	1.35	MC*SCR
C	Y	8	7	60304	3.84	1.78	0.53	1.21	MC*SCR
D	Y	8	7	60304	3.30	1.79	0.46	1.32	MC*SCR

Grade 8 Science

Reporting Category	Overall	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	All	48	43	116048	25.08	10.31	0.91	3.11	MC*SCR
A	All	24	22	116048	13.06	5.52	0.85	2.17	MC*SCR
B	All	8	6	116048	4.28	2.20	0.67	1.26	MC*SCR
C	All	8	8	116048	3.92	1.98	0.58	1.28	MC
D	All	8	7	116048	3.83	1.98	0.57	1.30	MC*SCR

Reporting Category	Gender	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Female	48	43	56000	24.98	9.88	0.90	3.12	MC*SCR
Total	Male	48	43	60048	25.18	10.70	0.92	3.10	MC*SCR
A	Female	24	22	56000	13.12	5.31	0.83	2.17	MC*SCR
A	Male	24	22	60048	13.00	5.71	0.86	2.16	MC*SCR
B	Female	8	6	56000	4.37	2.18	0.67	1.25	MC*SCR
B	Male	8	6	60048	4.19	2.21	0.67	1.26	MC*SCR
C	Female	8	8	56000	3.79	1.91	0.55	1.29	MC
C	Male	8	8	60048	4.04	2.04	0.61	1.27	MC
D	Female	8	7	56000	3.70	1.90	0.53	1.30	MC*SCR
D	Male	8	7	60048	3.95	2.04	0.60	1.29	MC*SCR

Reporting Category	Ethnicity	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	American Indian	48	43	194	22.25	10.02	0.90	3.11	MC*SCR
Total	African American	48	43	16192	18.35	8.25	0.86	3.12	MC*SCR
Total	Hispanic	48	43	16556	19.71	9.09	0.88	3.12	MC*SCR
Total	White	48	43	71734	27.46	9.78	0.90	3.09	MC*SCR
Total	Multiple Ethnicities	48	43	5713	24.16	10.27	0.91	3.12	MC*SCR
Total	Asian	48	43	5540	31.10	9.90	0.91	2.95	MC*SCR
Total	Pacific Islander	48	43	119	25.71	10.18	0.90	3.14	MC*SCR
A	American Indian	24	22	194	11.53	5.45	0.84	2.18	MC*SCR
A	African American	24	22	16192	9.70	4.63	0.77	2.22	MC*SCR
A	Hispanic	24	22	16556	10.32	4.98	0.80	2.22	MC*SCR
A	White	24	22	71734	14.24	5.25	0.83	2.14	MC*SCR
A	Multiple Ethnicities	24	22	5713	12.59	5.54	0.84	2.19	MC*SCR
A	Asian	24	22	5540	16.26	5.20	0.85	2.02	MC*SCR
A	Pacific Islander	24	22	119	13.33	5.50	0.84	2.19	MC*SCR
B	American Indian	8	6	194	3.79	2.17	0.66	1.27	MC*SCR
B	African American	8	6	16192	3.00	2.01	0.62	1.24	MC*SCR
B	Hispanic	8	6	16556	3.23	2.11	0.65	1.24	MC*SCR
B	White	8	6	71734	4.74	2.05	0.63	1.25	MC*SCR
B	Multiple Ethnicities	8	6	5713	4.12	2.21	0.67	1.26	MC*SCR
B	Asian	8	6	5540	5.28	2.06	0.66	1.19	MC*SCR
B	Pacific Islander	8	6	119	4.40	2.23	0.67	1.28	MC*SCR
C	American Indian	8	8	194	3.56	1.73	0.42	1.32	MC
C	African American	8	8	16192	2.98	1.62	0.36	1.30	MC
C	Hispanic	8	8	16556	3.17	1.77	0.47	1.29	MC
C	White	8	8	71734	4.24	1.97	0.58	1.28	MC
C	Multiple Ethnicities	8	8	5713	3.79	1.96	0.57	1.29	MC
C	Asian	8	8	5540	4.91	2.02	0.64	1.22	MC
C	Pacific Islander	8	8	119	4.03	1.92	0.56	1.27	MC
D	American Indian	8	7	194	3.37	1.92	0.58	1.24	MC*SCR
D	African American	8	7	16192	2.66	1.60	0.43	1.21	MC*SCR
D	Hispanic	8	7	16556	2.98	1.74	0.49	1.24	MC*SCR
D	White	8	7	71734	4.23	1.94	0.54	1.32	MC*SCR
D	Multiple Ethnicities	8	7	5713	3.66	1.93	0.55	1.29	MC*SCR
D	Asian	8	7	5540	4.65	1.91	0.54	1.30	MC*SCR
D	Pacific Islander	8	7	119	3.95	1.96	0.56	1.30	MC*SCR

Reporting Category	IEP	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	48	43	21664	17.32	8.46	0.87	3.09	MC*SCR
A	Y	24	22	21664	8.93	4.62	0.77	2.20	MC*SCR
B	Y	8	6	21664	2.77	1.98	0.62	1.22	MC*SCR
C	Y	8	8	21664	2.92	1.69	0.42	1.29	MC
D	Y	8	7	21664	2.70	1.72	0.50	1.21	MC*SCR

Reporting Category	EL	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	48	43	7667	18.21	8.52	0.87	3.11	MC*SCR
A	Y	24	22	7667	9.60	4.75	0.78	2.21	MC*SCR
B	Y	8	6	7667	2.84	2.01	0.63	1.23	MC*SCR
C	Y	8	8	7667	3.01	1.69	0.42	1.29	MC
D	Y	8	7	7667	2.77	1.64	0.44	1.22	MC*SCR

Reporting Category	Low Income	Total Points	N Items	N	Mean	SD	r	SEM	Item Type(s)
Total	Y	48	43	57225	21.19	9.45	0.89	3.14	MC*SCR
A	Y	24	22	57225	11.06	5.15	0.81	2.22	MC*SCR
B	Y	8	6	57225	3.56	2.14	0.65	1.26	MC*SCR
C	Y	8	8	57225	3.35	1.82	0.49	1.30	MC
D	Y	8	7	57225	3.21	1.82	0.52	1.26	MC*SCR

APPENDIX Q: HISTORICAL STATISTICS

The tables included in this appendix present the historical statistics for number of examinees (N Count), the mean, standard deviation (SD), and maximum (Max) for raw scores and scaled scores, in addition to the percentage of students by performance level (Below Basic, Basic, Proficient, Advanced) and the percentage of students earning either proficient or advanced scores. Scaled scores remain on the same scale of measurement, and therefore, can be compared across years. Raw scores, on the other hand, cannot be compared across tests or administrations because the difficulty of the items on a test can vary across years and also due to the reduction is test length in 2018.The asterisk (*) indicates that the maximum raw score varies between 2017 and 2018 administration years due to the reduction in test length, and also indicates that the maximum earned scaled score may vary across all administrations. Due to the Covid-19 pandemic, the PSSA was not administered in Spring 2020.

Mathematics Grade 3

	2015	2016	2017	2018	2019	2021	2022	2023	2024
N Count	125309	125420	125205	122563	120604	91693	114714	116303	112845
Raw Score Mean	39.1	45.8	42.4	27.0	28.5	25.3	27.6	28.0	27.1
Raw Score SD	14.6	14.7	15.9	11.7	11.7	11.3	11.4	11.2	11.7
Raw Score Max*	72	72	72	52	52	52	52	52	52
Scaled Score Mean	1008.1	1018.1	1019.9	1017.4	1026.4	997.9	1003.1	1008.8	1011.0
Scaled Score SD	120.5	131.5	129.7	123.1	124.9	121.2	124.8	117.8	120.3
Scaled Score Max*	1594	1564	1561	1545	1530	1577	1553	1529	1544
Percentage Bel. Basic	28.0	24.6	25.9	24.5	22.4	31.0	28.9	24.9	26.1
Percentage Basic	23.5	21.0	19.7	21.4	21.6	21.7	23.4	23.4	22.4
Percentage Proficient	28.5	28.1	28.4	31.4	29.3	29.5	26.9	30.1	30.9
Percentage Advanced	20.0	26.3	26.0	22.7	26.7	17.8	20.9	21.6	20.6
Percentage Prof. + Adv.	48.5	54.4	54.5	54.1	56.0	47.3	47.7	51.7	51.5

Mathematics Grade 4

	2015	2016	2017	2018	2019	2021	2022	2023	2024
N Count	124201	123940	125575	126481	123286	92387	114822	116642	116862
Raw Score Mean	34.6	42.9	40.5	25.8	26.7	24.0	26.5	27.5	27.4
Raw Score SD	14.3	15.6	15.1	11.7	11.3	10.7	10.8	10.8	11.5
Raw Score Max*	72	72	72	52	52	52	52	52	52
Scaled Score Mean	995.5	994.1	993.6	987.9	994.2	970.3	980.4	991.9	1002.9
Scaled Score SD	108.8	127.7	118.7	120.5	124.1	112.0	122.7	115.4	120.7
Scaled Score Max*	1627	1518	1529	1514	1532	1553	1561	1535	1533
Percentage Bel. Basic	24.8	27.6	26.1	29.8	26.1	33.9	30.9	25.1	24.9
Percentage Basic	30.8	25.9	27.3	26.7	27.7	30.6	26.8	28.5	26.5
Percentage Proficient	27.5	26.7	28.5	25.8	27.2	23.4	25.3	30.0	27.4
Percentage Advanced	16.9	19.8	18.1	17.8	19.0	12.1	17.0	16.5	21.3
Percentage Prof. + Adv.	44.5	46.5	46.6	43.5	46.2	35.6	42.3	46.5	48.7

Mathematics Grade 5

	2015	2016	2017	2018	2019	2021	2022	2023	2024
N Count	126683	122983	124405	126868	127592	90866	116489	117043	116834
Raw Score Mean	35.7	38.2	37.7	26.5	24.4	22.7	23.2	25.0	25.9
Raw Score SD	15.0	16.1	15.3	11.8	11.2	10.7	11.1	11.4	11.4
Raw Score Max*	72	72	72	52	52	52	52	52	52
Scaled Score Mean	987.2	993.3	991.8	991.8	991.8	971.1	968.8	985.1	988.7
Scaled Score SD	119.9	124.5	119.7	126.1	117.5	110.7	113.3	121.6	118.7
Scaled Score Max*	1594	1548	1550	1515	1601	1556	1541	1559	1519
Percentage Bel. Basic	25.9	28.0	24.8	28.7	23.3	31.3	31.1	29.2	25.3
Percentage Basic	31.3	27.6	31.4	26.1	33.7	32.6	33.5	28.1	31.9
Percentage Proficient	27.4	25.9	27.5	27.4	27.2	24.3	23.3	26.9	27.9
Percentage Advanced	15.4	18.5	16.2	17.8	15.8	11.8	12.2	15.8	14.9
Percentage Prof. + Adv.	42.8	44.4	43.8	45.2	43.1	36.1	35.4	42.8	42.8

Mathematics Grade 6

	2015	2016	2017	2018	2019	2021	2022	2023	2024
N Count	126413	125305	123112	125385	127496	90563	115844	117725	116358
Raw Score Mean	38.5	42.0	36.7	26.6	25.9	23.9	24.8	25.9	25.7
Raw Score SD	13.7	15.9	15.2	11.3	11.5	10.1	11.3	11.8	11.8
Raw Score Max*	72	72	72	52	52	52	52	52	52
Scaled Score Mean	976.1	977.8	976.3	976.3	979.6	948.5	953.3	963.3	970.9
Scaled Score SD	104.7	129.9	115.6	117.6	119.4	104.2	122.9	122.8	126.4
Scaled Score Max*	1531	1515	1534	1490	1500	1513	1521	1516	1524
Percentage Bel. Basic	25.2	30.1	29.1	29.7	25.9	35.1	38.9	33.5	31.7
Percentage Basic	35.1	28.8	30.6	30.8	35.1	36.6	28.8	30.1	30.9
Percentage Proficient	28.4	24.1	26.1	24.8	23.2	20.6	18.9	23.5	22.7
Percentage Advanced	11.3	16.9	14.1	14.7	15.8	7.6	13.3	12.9	14.8
Percentage Prof. + Adv.	39.7	41.0	40.3	39.6	39.0	28.2	32.3	36.5	37.4

Mathematics Grade 7

	2015	2016	2017	2018	2019	2021	2022	2023	2024
N Count	126299	124959	125584	124225	125808	90812	118357	117601	117279
Raw Score Mean	35.2	36.9	36.2	26.4	24.2	21.1	22.2	23.4	23.7
Raw Score SD	14.3	15.8	16.0	11.9	11.2	10.4	10.9	11.6	11.6
Raw Score Max*	72	72	72	52	52	52	52	52	52
Scaled Score Mean	961.5	968.1	968.6	967.3	965.6	936.2	945.5	954.4	958.0
Scaled Score SD	104.0	120.4	126.7	134.2	120.1	108.5	111.0	118.9	119.9
Scaled Score Max*	1536	1541	1551	1522	1536	1546	1513	1529	1535
Percentage Bel. Basic	33.5	34.9	37.0	37.8	35.8	46.1	43.0	39.5	37.8
Percentage Basic	33.4	28.1	25.2	23.3	26.0	27.1	30.0	27.3	28.1
Percentage Proficient	23.4	23.7	22.1	22.8	24.3	18.8	17.4	20.9	21.6
Percentage Advanced	9.6	13.3	15.7	16.2	13.9	8.1	9.7	12.3	12.5
Percentage Prof. + Adv.	33.1	37.0	37.8	38.9	38.2	26.9	27.0	33.2	34.1

Mathematics Grade 8

	2015	2016	2017	2018	2019	2021	2022	2023	2024
N Count	128859	123175	123271	124780	123186	85253	119039	118968	116468
Raw Score Mean	33.2	37.8	35.9	26.7	25.6	22.7	22.9	24.5	24.5
Raw Score SD	13.4	14.9	15.2	11.5	11.5	10.5	11.3	11.2	11.7
Raw Score Max*	72	72	72	52	52	52	52	52	52
Scaled Score Mean	950.5	949.1	953.5	948.4	950.3	919.0	922.0	931.8	940.5
Scaled Score SD	101.2	123.0	118.3	123.4	116.5	107.0	112.9	118.4	117.7
Scaled Score Max*	1558	1662	1618	1638	1470	1495	1479	1483	1466
Percentage Bel. Basic	37.7	40.2	39.7	41.1	39.6	53.5	50.3	46.9	45.3
Percentage Basic	32.6	28.6	27.8	27.9	28.2	24.5	27.1	27.0	26.1
Percentage Proficient	21.8	20.7	21.9	20.2	22.3	15.8	15.7	17.7	18.8
Percentage Advanced	8.0	10.5	10.6	10.8	9.9	6.3	6.8	8.3	9.8
Percentage Prof. + Adv.	29.8	31.2	32.5	31.1	32.2	22.1	22.6	26.1	28.6

English Language Arts Grade 3

	2015	2016	2017	2018	2019	2021	2022	2023	2024
N Count	125160	125284	124923	122397	120564	90980	114398	115762	112499
Raw Score Mean	36.2	36.1	35.7	24.8	24.6	23.7	23.4	23.0	22.3
Raw Score SD	10.9	11.5	11.4	8.9	9.1	9.2	9.3	9.0	8.7
Raw Score Max*	62	62	62	45	45	45	45	45	45
Scaled Score Mean	1026.7	1031.5	1039.3	1042.1	1039.0	1024.6	1014.9	1018.4	1012.0
Scaled Score SD	102.6	111.5	111.2	108.3	108.9	104.2	108.9	102.0	101.1
Scaled Score Max*	1586	1628	1680	1551	1544	1536	1537	1539	1541
Percentage Bel. Basic	13.4	13.6	12.1	10.4	11.4	14.0	17.9	14.4	16.1
Percentage Basic	24.6	25.5	23.3	26.1	26.6	27.7	29.7	31.6	28
Percentage Proficient	49.0	45.7	47.6	44.4	45.4	44.1	40.6	41.9	46.8
Percentage Advanced	13.0	15.2	17.1	19.1	16.5	14.2	11.8	12.1	9.1
Percentage Prof. + Adv.	62.0	60.9	64.6	63.5	61.9	58.3	52.3	54.0	55.9

English Language Arts Grade 4

	2015	2016	2017	2018	2019	2021	2022	2023	2024
N Count	123986	123597	125200	126223	123172	91862	114533	115799	116411
Raw Score Mean	46.6	48.1	48.4	34.2	35.4	33.0	34.1	32.8	31.6
Raw Score SD	14.8	14.6	14.8	11.7	12.3	11.7	12.7	12.7	12.2
Raw Score Max*	84	84	84	63	63	63	63	63	63
Scaled Score Mean	1021.1	1025.3	1030.5	1029.6	1035	1015.1	1006.9	1008.3	1003.2
Scaled Score SD	112.5	116.8	112.7	109.9	112.8	105.7	121.1	114.5	108.2
Scaled Score Max*	1724	1798	1714	1652	1636	1621	1657	1611	1602
Percentage Bel. Basic	12.9	12.2	10.9	9.7	10.3	11.9	18.6	17.2	16
Percentage Basic	28.5	29.1	28.2	30.6	26.1	31.5	29.2	30.9	32.5
Percentage Proficient	37.0	34.0	35.3	34.7	36.3	35.2	30.9	30.4	34.6
Percentage Advanced	21.6	24.6	25.7	25.1	27.3	21.4	21.3	21.4	16.9
Percentage Prof. + Adv.	58.6	58.7	60.9	59.8	63.6	56.6	52.2	51.9	51.5

English Language Arts Grade 5

	2015	2016	2017	2018	2019	2021	2022	2023	2024
N Count	126501	122868	124183	126761	127550	91028	116274	116608	116698
Raw Score Mean	48.7	48.1	46.8	32.5	33.2	33.2	33.7	33.4	32.8
Raw Score SD	14.4	14.9	15.0	11.3	11.4	10.7	12.1	12.0	12
Raw Score Max*	84	84	84	63	63	63	63	63	63
Scaled Score Mean	1029.8	1028.9	1029.6	1029.2	1027.2	1013.2	1010.7	1010.1	1001.9
Scaled Score SD	117.5	116.5	112.3	104.5	107.2	96.4	114.4	112.2	110
Scaled Score Max*	1730	1728	1723	1685	1647	1660	1649	1616	1603
Percentage Bel. Basic	13.4	14.1	11.5	8.9	9.6	10.6	17.7	15.4	16.6
Percentage Basic	24.8	24.5	28.9	31.7	31.8	34.4	28.7	31.0	31.1
Percentage Proficient	44.1	45.3	43.2	45.4	42.7	46.4	40.3	40.4	42
Percentage Advanced	17.8	16.2	16.4	14.0	15.8	8.6	13.3	13.2	10.3
Percentage Prof. + Adv.	61.8	61.5	59.6	59.4	58.5	55.0	53.6	53.7	52.3

English Language Arts Grade 6

	2015	2016	2017	2018	2019	2021	2022	2023	2024
N Count	126331	125263	123170	125341	127560	90232	115785	117088	116426
Raw Score Mean	50.6	50.4	48.0	34.5	33.9	33.5	34.7	33.2	32.5
Raw Score SD	14.6	14.6	14.5	11.6	11.6	11.8	11.4	11.6	11.3
Raw Score Max*	84	84	84	63	63	63	63	63	63
Scaled Score Mean	1028.0	1031.1	1035.1	1041.4	1034.4	1020.2	1019.0	1019.6	1009.2
Scaled Score SD	116.5	113.6	106.2	110.5	106.8	102.3	105.4	104.5	100
Scaled Score Max*	1699	1721	1737	1754	1692	1614	1643	1627	1583
Percentage Bel. Basic	10.0	8.6	6.9	5.3	5.7	7.1	8.3	8.1	8.6
Percentage Basic	29.4	29.8	29.5	32.2	31.3	35.6	35.6	36.3	38.3
Percentage Proficient	39.4	38.9	41.4	36.3	42.2	39.8	36.7	36.8	39.2
Percentage Advanced	21.3	22.7	22.2	26.2	20.8	17.5	19.4	18.8	13.9
Percentage Prof. + Adv.	60.7	61.6	63.6	62.5	63.0	57.3	56.1	55.6	53.1

English Language Arts Grade 7

	2015	2016	2017	2018	2019	2021	2022	2023	2024
N Count	126228	124961	125744	124226	125998	90515	118352	117316	117431
Raw Score Mean	50.5	49.0	47.1	35.0	34.0	33.7	35.2	33.4	33.6
Raw Score SD	14.1	13.9	15.0	11.5	10.6	10.8	12.2	12.6	12.5
Raw Score Max*	84	84	84	63	63	63	63	63	63
Scaled Score Mean	1023.4	1028.7	1031.7	1032.5	1026.3	1009.4	1019.8	1019.2	1012.0
Scaled Score SD	112.6	110.4	113.5	105.8	96.9	93.7	115.8	114.8	110.2
Scaled Score Max*	1652	1720	1724	1641	1639	1616	1648	1587	1589
Percentage Bel. Basic	6.4	5.0	3.6	2.5	2.6	3.9	5.1	4.5	4.7
Percentage Basic	34.9	33.5	36.9	35.5	36.9	42.8	37.7	41.0	41.8
Percentage Proficient	41.7	43.3	40.1	44.3	45.6	43.5	39.5	36.8	38.0
Percentage Advanced	16.9	18.1	19.3	17.7	14.9	9.8	17.8	17.7	15.5
Percentage Prof. + Adv.	58.7	61.5	59.5	61.9	60.4	53.3	57.2	54.5	53.6

English Language Arts Grade 8

	2015	2016	2017	2018	2019	2021	2022	2023	2024
N Count	128889	123275	123653	124907	123503	85686	119366	118937	116655
Raw Score Mean	51.2	52.2	49.0	35.6	36.7	33.9	35.3	34.6	34.4
Raw Score SD	14.2	14.5	14.6	11.6	12.3	11.6	12.6	12.4	11.7
Raw Score Max*	84	84	84	63	63	63	63	63	62
Scaled Score Mean	1020.2	1026.0	1025.0	1027.5	1024.2	1007.7	1013.5	1009.9	1004.7
Scaled Score SD	107.3	116.2	108.9	101.4	115.8	105.0	115.0	113.8	109.4
Scaled Score Max*	1636	1677	1677	1640	1699	1654	1621	1595	1474
Percentage Bel. Basic	10.9	11.3	10.5	7.8	11.9	11.4	14.4	14.4	14.7
Percentage Basic	31.1	30.4	30.6	30.6	30.2	36.0	29.9	32.8	32.9
Percentage Proficient	43.5	40.9	42.9	47.1	41.9	41.7	39.7	38.4	40.6
Percentage Advanced	14.5	17.5	15.9	14.4	16.0	10.9	16.0	14.4	11.8
Percentage Prof. + Adv.	58.0	58.3	58.9	61.5	57.9	52.6	55.6	52.7	52.4

Science Grade 4

	2015	2016	2017	2018	2019	2021	2022	2023	2024
N Count	124309	123818	125488	126353	123093	91071	114497	116381	116630
Raw Score Mean	46.6	47.8	37.2	25.2	25.9	24.6	26.0	26.4	26.4
Raw Score SD	13.2	13.4	13.3	9.4	9.4	8.8	9.8	10.0	9.3
Raw Score Max*	68	68	68	48	48	48	48	48	48
Scaled Score Mean	1426.7	1424.6	1406.1	1412.6	1424.2	1395.7	1412.6	1413.0	1417.6
Scaled Score SD	198.9	206.3	170.9	173.6	174.2	161.8	186.9	188.0	174
Scaled Score Max*	2247	2208	2344	2321	2309	2313	2318	2287	2302
Percentage Bel. Basic	10.5	11.7	5.3	5.4	5.0	7.6	8.0	7.8	6.2
Percentage Basic	12.2	12.2	20.2	19.1	17.2	16.6	18.3	18.0	16.7
Percentage Proficient	36.1	36.7	41.6	39.7	39.0	43.5	36.5	38.9	40.3
Percentage Advanced	41.2	39.5	33.0	35.8	38.8	32.3	37.2	35.2	36.9
Percentage Prof. + Adv.	77.3	76.2	74.5	75.5	77.8	75.8	73.7	74.2	77.2

Science Grade 8

	2015	2016	2017	2018	2019	2021	2022	2023	2024
N Count	128733	122955	122716	124417	122654	84244	118412	118393	116048
Raw Score Mean	45.1	44.5	34.9	23.9	25.1	24.0	24.8	26.3	25.1
Raw Score SD	13.6	14.1	13.3	9.2	8.8	9.6	9.9	10.4	10.3
Raw Score Max*	68	68	68	48	48	48	48	48	48
Scaled Score Mean	1317.1	1310.4	1299.3	1305.2	1314.9	1287.6	1289.1	1312.9	1306.7
Scaled Score SD	207.6	219.2	184.0	180.9	184.2	193.9	205.8	214.8	204.8
Scaled Score Max*	2230	2278	2416	2337	2406	2299	2294	2272	2265
Percentage Bel. Basic	23.2	25.6	25.0	22.2	20.0	26.7	28.3	24.5	25.9
Percentage Basic	18.1	16.8	22.4	23.9	21.9	22.5	20.6	18.4	19.5
Percentage Proficient	31.8	30.3	31.5	33.5	35.1	31.2	31.0	30.8	32.3
Percentage Advanced	27.0	27.3	21.2	20.4	23.1	19.6	20.1	26.2	22.3
Percentage Prof. + Adv.	58.8	57.6	52.7	53.9	58.2	50.8	51.1	57.0	54.6

APPENDIX R: PSSA SCORE REPORT DEVELOPMENT

PENNSYLVANIA SYSTEM OF SCHOOL ASSESSMENT (PSSA)

BACKGROUND

An important aspect of the PSSA transition to the Pennsylvania Core Standard (PCS) is the need to produce revised score reports to support the newly-aligned assessments, specifically the introduction of an English Language Arts assessment with dual reporting of the reading scores and a desire to provide greater detail for the new score reporting categories. PDE also determined that the transition represented an opportunity to reevaluate the score reports as a whole. To that end, PDE and DRC developed a plan to utilize parent and educator focus groups to guide the development of revised PSSA individual student score reports.

This document provides a high-level summary of the focus-group approach that was followed, the feedback that DRC and PDE received, and the direction in which the reports were developed as an output of the process.

THE FOCUS GROUP APPROACH

DRC facilitated seven focus groups at four different locations across the Commonwealth, chosen to provide an opportunity for "geographically-representative" participation.

- A total of 56 educators and 22 parents participated in the seven focus groups.

Prior to the focus groups, DRC collaborated with PDE to select the number and design of the score-report mock-ups that were presented at the focus group meetings.

- Two mock-up designs were selected to give participants an opportunity to visualize key differences ("Sample Student #1" and "Sample Student #2"):
    - Use of the Strength Profile versus a Just-Proficient Mean
    - Reading "Text Types" reported between Reading and Writing versus after Writing
    - ELA dual reporting footnote versions

Focus groups were scheduled for 90 minutes (with the exception of a 120-minute session with the Harrisburg educator group).

- PDE opened each focus group with an overview of the purpose.
- DRC facilitated each session using a survey-question approach (see attached).
    - Participants used the survey to record their individual feedback on particular elements of the report and were also encouraged to share their feedback during the subsequent group discussions.
    - The survey approach ultimately allowed participants to compare and contrast all elements of the two mock-up designs.
    - All written survey feedback was collected and all verbal feedback was recorded by DRC staff.

Some of the main themes of the feedback included (see table on page 4 for additional detail):

- Favorable opinion of the first page with some requests to make information easier to read (larger font, more white space)
    - There were recurring comments against the use of "superior," "satisfactory," "marginal," and "inadequate" in the Performance Level descriptors.

- Consistent input that the information became "overwhelming" with the reporting category definitions appearing within the Score reporting tables
    - There were multiple requests to rewrite the descriptions or move them away from the student's score.
- Majority of the participants preferred the Strength Profile to the Just Proficient Mean
    - Those who preferred the Just Proficient Mean were often still misinterpreting its meaning.
- Majority of the participants preferred to have the Reading Text Types reported after Writing
    - This location was perceived to provide better delineation that the text type score is additional information rather than a direct element of the total ELA score.

After the focus groups were completed, DRC compiled the feedback for PDE to review and make recommendations. A summary of the feedback is found in the table below.

Focus Group	Strength Profile	Just Proficient Mean	Other, Both, or NR	Text Types Table Placed Directly After the Reading Table	Text Types Table Placed After the Entire ELA Reporting Table	Neither, Other, or NR	ELA Dual Reporting Footnote – Version 1	ELA Dual Reporting Footnote – Version 2	Neither, Other, or NR
IU #4 – Educators (13)	11	2	0	1	8	4	2	9	2
IU #4 – Parents (4)	1	3	0	0	4	0	0	4	0
IU #10 – Educators (12)	9	2	1	1	8	3	1	8	3
IU #10 – Parents (10)	8	2	0	2	8	0	2	7	1
Philadelphia – Educators (8)	4	4	0	3	5	0	3	5	0
Philadelphia – Parents (8)	3	2	3	0	5	3	0	4	4
Harrisburg – Educators (23)	17	4	2	0	22	1	0	21	2
Total	53	19	6	7	60	11	8	58	12

A single, revised mock-up was produced to reflect the following PDE recommendations ("Sample Student 3"):

- Minor changes to Page 1 (re-arrangement, spacing, font size)
- Just Proficient Mean eliminated
- Reading Text Types reported after Writing
- All subjects reported on pages 2 and 3 with Reporting Category definitions moved to page 4

The educator focus group participants were invited to a WebEx to view the revised mock-up, provide input, and respond to a survey question about removing the Strength Profile altogether.

- DRC highlighted the changes on the revised mock up and reviewed an alternate design with the Strength Profile removed.
    - All final changes were viewed favorably by the WebEx attendees (especially the new placement of the Reporting Category definitions on page 4).
    - All-but one attendee voted to retain the Strength Profile.

The final mock-up reviewed at the WebEx was used as a basis for the development and production of the 2015 student reports. The following materials are found on the next several pages of this appendix.

- The Focus Group Survey (Parent version – Educator differed only in the “Participant Information”)
- Student 1 Score Report (reviewed at the focus groups)
- Student 2 Score Report (reviewed at the focus groups)
- Student 3 Score Report (reviewed with the educators at the follow-up WebEx)

SURVEY QUESTIONS FROM PARENT FOCUS GROUP

PARTICIPANT INFORMATION

Name of student's school _____

Is this school ____ rural _____ urban ____ suburban?

Grade(s) of your student(s) _____

STUDENT REPORT VERSION 1–PAGE 1

After reviewing page 1 of the PSSA Student Report version 1, please respond to questions 1–2. A group discussion will follow.

1. How easy/difficult is it to determine how the sample student performed on the PSSA for Mathematics, English Language Arts (ELA), and Science?

   _____ very difficult
   _____ somewhat difficult
   _____ somewhat easy
   _____ very easy

   Please briefly explain why you rated this item as you did.
   _____
   _____
   _____

2. How would you rate the **readability** of page 1 of the PSSA report (e.g., font size, placement of student information, performance level definitions)?

   _____ not readable
   _____ somewhat readable
   _____ mostly readable
   _____ very readable

   Please briefly explain why you rated this item as you did.
   _____
   _____
   _____

REPORTING TABLES VERSION 1–PAGES 2, 3, AND 4

After reviewing pages 2–4 of the PSSA Student Report version 1, please respond to questions 3–7. A group discussion will follow.

3. Overall, how easy/difficult is it to understand the information in the tables (e.g., descriptions of reporting categories, the student's points, total points possible, strength profile)?

   _____ very difficult
   _____ somewhat difficult
   _____ somewhat easy
   _____ very easy

   Please briefly explain why you rated this item as you did.
   _____

   _____

   _____

4. How well did you understand the Strength Profile (high, medium, or low) ratings and the footnote information for the Strength Profile?

   _____ not understandable
   _____ somewhat understandable
   _____ mostly understandable
   _____ very understandable

   Please briefly explain why you rated this item as you did.
   _____

   _____

   _____

5. In the ELA table on page 3, points are reported for both the Reading Reporting Categories and the Reading Text Types Reporting Categories. How clear is this section of dual reporting?

   _____ not clear
   _____ somewhat clear
   _____ mostly clear
   _____ very clear

   Please briefly explain why you rated this item as you did.
   _____

   _____

OVERALL REPORT FEEDBACK VERSION 1

6. How easy/difficult was it to read and move through the report, find the next section, and find supporting material to understand the student-score information?

   _____ very difficult
   _____ somewhat difficult
   _____ somewhat easy
   _____ very easy

   Please briefly explain why you rated this item as you did.

   _____

   _____

   _____

7. How well did you understand the contents of the report (e.g., performance levels, footnotes, graphics)?

   _____ not understandable
   _____ somewhat understandable
   _____ mostly understandable
   _____ very understandable

   Please briefly explain why you rated this item as you did.

   _____

   _____

   _____

STUDENT REPORT VERSION 2–PAGES 2, 3, AND 4

After reviewing the PSSA Student Report version 2, please respond to questions 1–5. A group discussion will follow.

1. How well did you understand the Just Proficient Mean results on pages 2–4 and the footnote information for the Just Proficient Mean?

   _____ not understandable
   _____ somewhat understandable
   _____ mostly understandable
   _____ very understandable

   Please briefly explain why you rated this item as you did.

   _____

   _____

   _____

2. The reporting tables on pages 2–4 include a Just Proficient Mean for each reporting category. Now look at pages 2–4 of version 1. The reporting tables include a Strength Profile (high, medium, or low) for each reporting category. Which version of the information do you prefer and why?

   _____ version 1
   _____ version 2

   Please explain.

   _____

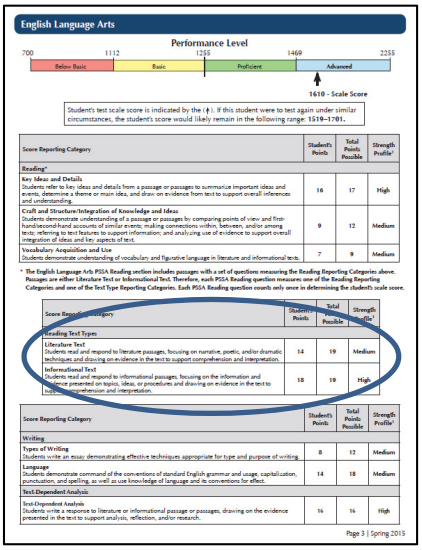
   _____

   _____

ELA REPORT TABLE–PAGE 3 OF VERSION 1 OR VERSION 2?

3. Look at version 1. The Text Types Reporting Category information follows the Reading Reporting Category information. Now look at version 2. The Text Types Reporting Category information is placed at the end of the ELA table. Which version of the order of information do you prefer and why?

_____ version 1 _____ version 2


English Language Arts

Performance Level

700 1112 1258 1469 2255

Below Basic | Basic | Proficient | Advanced

1610 - Scale Score

Student's test scale score is indicated by the (↓). If this student were to test again under similar circumstances, the student's score would likely remain in the following range: 1519–1701.

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile*
Reading*			
Key Ideas and Details Students refer to key ideas and details from a passage or passages to summarize important ideas and events, determine a theme or main idea, and draw on evidence from text to support overall inferences and understanding.	16	17	High
Craft and Structure/Integration of Knowledge and Ideas Students demonstrate understanding of a passage or passages by: comparing points of view and first-hand/second-hand accounts of similar events; making connections within, between, and/or among texts; referring to text features to support information; and analyzing use of evidence to support overall integration of ideas and key aspects of text.	9	12	Medium
Vocabulary Acquisition and Use Students demonstrate understanding of vocabulary and figurative language in literature and informational texts.	7	9	Medium

* The English Language Arts PSSA Reading section includes passages with a set of questions measuring the Reading Reporting Categories above. Passages are either Literature Text or Informational Text. Therefore, each PSSA Reading question measures one of the Reading Reporting Categories and one of the Text Type Reporting Categories. Each PSSA Reading question counts only once in determining the student's scale score.

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile*
Reading Text Types			
Literature Text Students read and respond to literature passages, focusing on narrative, poetic, and/or dramatic techniques and drawing on evidence in the text to support comprehension and interpretation.	14	19	Medium
Informational Text Students read and respond to informational passages, focusing on the information and evidence presented on topics, ideas, or procedures and drawing on evidence in the text to support comprehension and interpretation.	18	19	High

Score Reporting Category	Student's Points	Total Points Possible	Strength Profile*
Writing			
Types of Writing Students write an essay demonstrating effective techniques appropriate for type and purpose of writing.	8	12	Medium
Language Students demonstrate command of the conventions of standard English grammar and usage, capitalization, punctuation, and spelling, as well as use knowledge of language and its conventions for effect.	14	18	Medium
Text-Dependent Analysis			
Text-Dependent Analysis Students write a response to literature or informational passage or passages, drawing on the evidence presented in the text to support analysis, reflection, and/or research.	14	16	High

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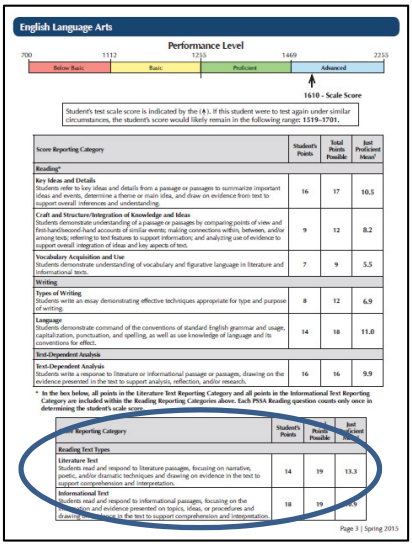
English Language Arts

Performance Level

700 1112 1258 1469 2255

Below Basic | Basic | Proficient | Advanced

1610 - Scale Score

Student's test scale score is indicated by the (↓). If this student were to test again under similar circumstances, the student's score would likely remain in the following range: 1519–1701.

Score Reporting Category	Student's Points	Total Points Possible	Just Proficient Mean*
Reading*			
Key Ideas and Details Students refer to key ideas and details from a passage or passages to summarize important ideas and events, determine a theme or main idea, and draw on evidence from text to support overall inferences and understanding.	16	17	10.5
Craft and Structure/Integration of Knowledge and Ideas Students demonstrate understanding of a passage or passages by comparing points of view and first-hand/second-hand accounts of similar events; making connections within, between, and/or among texts; referring to text features to support information; and analyzing use of evidence to support overall integration of ideas and key aspects of text.	9	12	8.2
Vocabulary Acquisition and Use Students demonstrate understanding of vocabulary and figurative language in literature and informational texts.	7	9	5.5
Writing			
Types of Writing Students write an essay demonstrating effective techniques appropriate for type and purpose of writing.	8	12	6.9
Language Students demonstrate command of the conventions of standard English grammar and usage, capitalization, punctuation, and spelling, as well as use knowledge of language and its conventions for effect.	14	18	11.0
Text-Dependent Analysis			
Text-Dependent Analysis Students write a response to literature or informational passage or passages, drawing on the evidence presented in the text to support analysis, reflection, and/or research.	16	16	9.9

* In the box below, all points in the Literature Text Reporting Category and all points in the Informational Text Reporting Category are included within the Reading Reporting Categories above. Each PSSA Reading question counts only once in determining the student's scale score.

Score Reporting Category	Student's Points	Total Points Possible	Just Proficient Mean*
Reading Text Types			
Literature Text Students read and respond to literature passages, focusing on narrative, poetic, and/or dramatic techniques and drawing on evidence in the text to support comprehension and interpretation.	14	19	13.3
Informational Text Students read and respond to informational passages, focusing on the information and evidence presented on topics, ideas, or procedures and drawing on evidence in the text to support comprehension and interpretation.	18	19	16.9

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Please explain.

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4. Which version of the ELA dual reporting footnote do you prefer and why?

_____ version 1

The English Language Arts PSSA Reading section includes passages with a set of questions measuring the Reading Reporting Categories above. Passages are either Literature Text or Informational Text. Therefore, each PSSA Reading question measures one of the Reading Reporting Categories and one of the Text Type Reporting Categories. Each PSSA Reading question counts only once in determining the student's scale score.

_____ version 2

In the box below, all points in the Literature Text Reporting Category and all points in the Informational Text Reporting Category are included within the Reading Reporting Categories above. Each PSSA Reading question counts only once in determining the student's scale score.

Please explain.

_____

_____

_____

REPORT OPTIONS–VERSION 1 OR VERSION 2?

5. Now that you have reviewed the two reports, please select the preferred option from each group below.

_____ Strength Profile information
_____ Just Proficient Mean information

_____ Reading Text Type table placement directly after the Reading score reporting table
_____ Reading Text Type table placement directly after the entire ELA score reporting table

_____ ELA dual reporting footnote – version 1
_____ ELA dual reporting footnote – version 2

Additional Comments and Recommendations

_____

_____

_____

_____

_____

APPENDIX S: INVESTIGATION OF PERSON FIT BY MODE AND SUBGROUP

The PSSA is administered as both a paper-pencil test (PPT) and a computer-based test (CBT). In the Standards for Educational and Psychological Testing, comparability of scores across testing conditions is emphasized to support fairness in testing, stating that, "Comparability of scores enables test users to make comparable inferences based on the scores for all test takers" (AERA et al., 2014, p. 59). Whether students are administered a PPT or CBT, test users must be able to make the same interpretations about student knowledge and skills based on students' scores. Therefore, in any testing program it is important to examine the degree to which mode may influence results.

Although there are several ways to examine the relationship between mode and student scores, sample size undoubtedly impacts the robustness of the results. In 2021, there was a substantial increase in the proportion of CBT administrations than in previous years that has held somewhat consistent from 2021 through 2024. Specifically, between 3% and 7% of all administrations were CBTs in 2019 whereas between 23% and 38% of all administrations were CBTs in 2024. For each subject and grade level, all forms are offered as both paper-pencil based tests and CBTs. Furthermore, most accommodated forms are administered as CBTs, thus providing additional limitations in the results of a formal mode study. For these reasons, traditional approaches to mode studies may not be feasible or appropriate. The count and proportion of PPT and CBT are shown in Table S–1. Chapter Ten provides additional information of PSSA administrations by mode, accommodations, and student characteristics.

Table S–1. Final N-Counts and Proportion by Mode, 2024

Subject	Grade	Count Paper	Proportion Paper (%)	Count CBT	Proportion CBT (%)
Mathematics	3	85850	76.08	26995	23.92
Mathematics	4	86698	74.19	30164	25.81
Mathematics	5	84574	72.39	32260	27.61
Mathematics	6	77732	66.80	38626	33.20
Mathematics	7	78563	66.99	38716	33.01
Mathematics	8	77275	66.35	39193	33.65
ELA	3	86307	76.72	26192	23.28
ELA	4	87303	75.00	29108	25.00
ELA	5	85047	72.88	31651	27.12
ELA	6	77351	66.44	39075	33.56
ELA	7	76968	65.54	40463	34.46
ELA	8	75628	64.83	41027	35.17
Science	4	84332	72.31	32298	27.69
Science	8	71616	61.71	44432	38.29

Until online participation reaches sufficiently large sample sizes, any true population differences between scores on the paper- and computer-based modes may be difficult to distinguish from differences that are attributable to sampling and random error. However, in the interim, an analysis of person fit statistics was conducted to gain insight into whether evidence of mode or student subgroup effects exist.

METHOD

Engelhard (2009) provided a framework and methods for defining measurement quality in terms of measurement invariance across conditions and subpopulations as measured by model fit (by item—differential item function and by person—differential person functioning). The method employed used residual analysis to explore differences between observed and expected responses by individuals and groups, under different conditions, and given a specified item response theory (IRT) model. Although they are not exact tests of fit, these methods allow for insight into the invariance properties of an assessment through these types of fit analyses. In this study, the preliminary focus is to examine person fit on the test level.

The IRT model used for the PSSA is based on the work of Georg Rasch. The Rasch partial credit model (RPCM; Wright & Masters, 1982) was used to calibrate PSSA data because both dichotomous multiple-choice (MC) and polytomously scored items (e.g., open-ended and evidence-based selected-response) were part of the assessment. The RPCM extends the Rasch model (Rasch, 1960) for dichotomous (0, 1) items so that it accommodates the polytomous OE item data. Under the RPCM, for a given item i with score categories, the probability of person n scoring x (x = 0, 1, 2..., m_i) is given by:

$$P_{ni}(X = x) = \frac{\exp \sum_{j=0}^{x} (\theta_n - D_{ij})}{\sum_{k=0}^{m_i} \exp \sum_{j=0}^{k} (\theta_n - D_{ij})},$$

where θ_n represents a student's proficiency (ability) level, and D_{ij} is the step difficulty of step j on item i. For dichotomous MC items, the RPCM reduces to the standard Rasch model and the single step difficulty is referred to as the item's difficulty. The Rasch model predicts the probability of person n getting item i correct as follows:

$$P_{ni}(X = 1) = \frac{\exp(\theta_n - D_{ij})}{1 + \exp(\theta_n - D_{ij})}.$$

The Rasch model places both student ability and item difficulty (estimated in terms of log-odds or logits) on the same continuum. When the model assumptions are met, the Rasch model provides estimates of a person's ability which are independent of the items employed in the assessment, and conversely, estimates item difficulty independently of the sample of examinees. Item calibration was implemented via WINSTEPS (Linacre, 2019), which employs unconditional (UCON), joint-maximum-likelihood estimation (JMLE).

To produce person fit values, residuals of IRT model (essentially the differences between observed and expected responses) are summarized to create the mean square error statistics (MSE) of Infit and Outfit for items and persons. In this study, we use the unstandardized measures of Infit and Outfit, which are essentially MSE residuals and have expected values of 1.0 and a standard deviation of about 0.2 (Bond, & Fox, 2007). Such values represent adequate fit, whereas values greater than 2.0 represent more variability than expected, and less than 1.0 can mean students did not independently respond to items. In this study, person infit and outfit statistics were produced in WINSTEPS.

To assess the relationship between testing mode (i.e., computer-based or paper-pencil based) and PSSA performance, we examined differences in person infit and outfit with respect to student characteristics (e.g., whether students have an individualized educational plan (IEP)) and test characteristics (e.g., whether forms were administered as CBT or PPT). The dependent variables were person infit and person outfit, and the independent (predictor) variables included mode, whether students had an IEP, whether students were ELs, and the interaction of mode and EL, and mode and IEP.

RESULTS

Means and standard deviations were computed for infit and outfit for each student subgroup and mode. Tables S–2M, S–2E, and S–2S display a summary of person fit means, standard deviations by Mode and group (EL and IEP) for mathematics, ELA, and science, respectively. As the table shows, there are minimal differences in the means and standard deviations for each group by mode, and person fit statistics are within acceptable ranges.

Table S–2M. Person Infit and Outfit Descriptive Statistics by Mathematics Grade, Mode, and Group

Grade	Group	Mode	N	Infit Mean	Infit SD	Outfit Mean	Outfit SD
3	EL (non-EL)	CBT	1865 (25130)	1.01 (0.98)	0.19 (0.19)	1.10 (1.00)	0.28 (0.25)
3	EL (non-EL)	PPT	5760 (80090)	1.01 (0.97)	0.19 (0.19)	1.11 (0.99)	0.29 (0.24)
3	IEP (non-IEP)	CBT	5826 (21169)	1.03 (0.97)	0.19 (0.18)	1.15 (0.97)	0.32 (0.21)
3	IEP (non-IEP)	PPT	16888 (68962)	1.01 (0.97)	0.19 (0.19)	1.11 (0.97)	0.30 (0.22)
4	EL (non-EL)	CBT	1645 (28519)	0.99 (0.97)	0.17 (0.20)	1.03 (0.97)	0.22 (0.24)
4	EL (non-EL)	PPT	5247 (81451)	0.99 (0.96)	0.17 (0.20)	1.04 (0.97)	0.21 (0.25)
4	IEP (non-IEP)	CBT	6771 (23393)	1.02 (0.95)	0.17 (0.20)	1.07 (0.94)	0.24 (0.23)
4	IEP (non-IEP)	PPT	17729 (68969)	1.00 (0.95)	0.18 (0.20)	1.05 (0.95)	0.23 (0.25)
5	EL (non-EL)	CBT	1445 (30815)	0.98 (0.97)	0.19 (0.21)	1.06 (0.97)	0.28 (0.26)
5	EL (non-EL)	PPT	4582 (79992)	0.99 (0.97)	0.20 (0.21)	1.09 (0.97)	0.30 (0.26)
5	IEP (non-IEP)	CBT	7088 (25172)	1.02 (0.96)	0.19 (0.21)	1.14 (0.92)	0.33 (0.22)
5	IEP (non-IEP)	PPT	16445 (68129)	1.01 (0.97)	0.20 (0.21)	1.13 (0.93)	0.33 (0.23)
6	EL (non-EL)	CBT	1375 (37251)	0.99 (0.98)	0.17 (0.19)	1.04 (0.97)	0.21 (0.24)
6	EL (non-EL)	PPT	3944 (73788)	1.01 (0.97)	0.16 (0.19)	1.07 (0.97)	0.22 (0.24)
6	IEP (non-IEP)	CBT	8124 (30502)	1.01 (0.97)	0.17 (0.19)	1.07 (0.95)	0.23 (0.24)
6	IEP (non-IEP)	PPT	14418 (63314)	1.02 (0.96)	0.17 (0.19)	1.08 (0.95)	0.24 (0.24)
7	EL (non-EL)	CBT	1326 (37390)	1.02 (0.98)	0.15 (0.18)	1.09 (1.00)	0.22 (0.22)
7	EL (non-EL)	PPT	4062 (74501)	1.03 (0.97)	0.15 (0.18)	1.12 (0.98)	0.24 (0.22)
7	IEP (non-IEP)	CBT	8066 (30650)	1.04 (0.96)	0.15 (0.19)	1.13 (0.96)	0.24 (0.21)
7	IEP (non-IEP)	PPT	14077 (64486)	1.03 (0.96)	0.15 (0.19)	1.13 (0.96)	0.25 (0.21)
8	EL (non-EL)	CBT	1391 (37802)	0.97 (0.96)	0.15 (0.19)	1.00 (0.96)	0.17 (0.18)
8	EL (non-EL)	PPT	4114 (73161)	0.99 (0.96)	0.14 (0.19)	1.03 (0.97)	0.18 (0.19)
8	IEP (non-IEP)	CBT	7905 (31288)	1.00 (0.95)	0.15 (0.19)	1.05 (0.94)	0.19 (0.17)
8	IEP (non-IEP)	PPT	13879 (63396)	1.00 (0.96)	0.15 (0.19)	1.05 (0.95)	0.20 (0.18)

Table S–2E. Person Infit and Outfit Descriptive Statistics by ELA Grade, Mode, and Group

Grade	Group	Mode	N	Infit Mean	Infit SD	Outfit Mean	Outfit SD
3	EL (non-EL)	CBT	1839 (24353)	1.07 (1.02)	0.19 (0.2)	1.13 (1.03)	0.23 (0.23)
3	EL (non-EL)	PPT	5751 (80556)	1.08 (1.02)	0.21 (0.20)	1.14 (1.02)	0.26 (0.23)
3	IEP (non-IEP)	CBT	5625 (20567)	1.08 (1.01)	0.20 (0.20)	1.15 (1.01)	0.26 (0.21)
3	IEP (non-IEP)	PPT	16936 (69371)	1.07 (1.01)	0.20 (0.20)	1.12 (1.01)	0.26 (0.22)
4	EL (non-EL)	CBT	1615 (27493)	1.01 (0.98)	0.25 (0.29)	1.10 (1.00)	0.28 (0.26)
4	EL (non-EL)	PPT	5240 (82063)	1.05 (1.00)	0.27 (0.30)	1.13 (1.02)	0.31 (0.28)
4	IEP (non-IEP)	CBT	6527 (22581)	1.02 (0.97)	0.26 (0.29)	1.1 (0.97)	0.29 (0.25)
4	IEP (non-IEP)	PPT	17826 (69477)	1.03 (0.99)	0.26 (0.30)	1.11 (1.00)	0.30 (0.27)
5	EL (non-EL)	CBT	1470 (30181)	1.12 (1.02)	0.36 (0.33)	1.27 (1.08)	0.45 (0.37)
5	EL (non-EL)	PPT	4550 (80497)	1.12 (0.99)	0.36 (0.30)	1.27 (1.04)	0.49 (0.35)
5	IEP (non-IEP)	CBT	6957 (24694)	1.11 (1.01)	0.36 (0.32)	1.27 (1.04)	0.48 (0.32)
5	IEP (non-IEP)	PPT	16510 (68537)	1.08 (0.98)	0.34 (0.29)	1.22 (1.02)	0.47 (0.31)
6	EL (non-EL)	CBT	1464 (37611)	1.10 (0.98)	0.35 (0.29)	1.22 (1.01)	0.41 (0.28)
6	EL (non-EL)	PPT	3848 (73503)	1.10 (0.97)	0.35 (0.28)	1.22 (1.01)	0.42 (0.28)
6	IEP (non-IEP)	CBT	8177 (30898)	1.06 (0.96)	0.32 (0.28)	1.16 (0.98)	0.36 (0.25)
6	IEP (non-IEP)	PPT	14378 (62973)	1.05 (0.97)	0.32 (0.28)	1.15 (0.99)	0.38 (0.26)
7	EL (non-EL)	CBT	1449 (39014)	1.01 (0.95)	0.30 (0.29)	1.12 (1.01)	0.32 (0.29)
7	EL (non-EL)	PPT	3916 (73052)	1.02 (0.94)	0.29 (0.29)	1.12 (1.01)	0.33 (0.28)
7	IEP (non-IEP)	CBT	8314 (32149)	0.99 (0.94)	0.28 (0.29)	1.11 (0.99)	0.30 (0.28)
7	IEP (non-IEP)	PPT	13896 (63072)	0.99 (0.94)	0.28 (0.29)	1.10 (1.00)	0.31 (0.28)
8	EL (non-EL)	CBT	1505 (39522)	1.07 (1.06)	0.34 (0.36)	1.20 (1.07)	0.40 (0.35)
8	EL (non-EL)	PPT	4006 (71622)	1.08 (1.03)	0.34 (0.34)	1.22 (1.04)	0.44 (0.34)
8	IEP (non-IEP)	CBT	8147 (32880)	1.07 (1.05)	0.34 (0.37)	1.19 (1.04)	0.39 (0.34)
8	IEP (non-IEP)	PPT	13696 (61932)	1.04 (1.03)	0.32 (0.34)	1.16 (1.03)	0.38 (0.33)

Table S–2S. Person Infit and Outfit Descriptive Statistics by Science Grade, Mode, and Group

Grade	Group	Mode	N	Infit Mean	Infit SD	Outfit Mean	Outfit SD
4	EL (non-EL)	CBT	1882 (30416)	1.05 (0.99)	0.17 (0.14)	1.11 (1.00)	0.25 (0.21)
4	EL (non-EL)	PPT	5004 (79328)	1.05 (0.99)	0.16 (0.14)	1.12 (1.00)	0.25 (0.21)
4	IEP (non-IEP)	CBT	7146 (25152)	1.05 (0.98)	0.16 (0.14)	1.11 (0.98)	0.24 (0.19)
4	IEP (non-IEP)	PPT	17290 (67042)	1.04 (0.98)	0.16 (0.14)	1.10 (0.98)	0.24 (0.20)
8	EL (non-EL)	CBT	1483 (42949)	1.01 (0.99)	0.10 (0.12)	1.04 (0.98)	0.14 (0.15)
8	EL (non-EL)	PPT	3994 (67622)	1.01 (0.98)	0.10 (0.12)	1.05 (0.98)	0.14 (0.15)
8	IEP (non-IEP)	CBT	8638 (35794)	1.02 (0.98)	0.11 (0.13)	1.05 (0.97)	0.15 (0.14)
8	IEP (non-IEP)	PPT	13026 (58590)	1.01 (0.98)	0.11 (0.12)	1.04 (0.97)	0.15 (0.15)

To further analyze differences in person fit, we conducted multivariate analyses in SAS to examine the main effect of mode, IEP and EL status, and interaction effects of mode and IEP, and mode and EL status. Table S–3 summarizes the overall results from the generalized linear model using mean-square infit and mean-square outfit as the dependent variables. Statistics reported include the F Value, the associated significance value (Sig.), and the amount of variance explained by the model (R^2) or effect size. Although all significance values are less than .05, indicating statistical significance of the models, the R-square values indicate that the model explains very little variation in person fit (min = .001, max = .073). Meaning, mode, EL and IEP explain very little of person infit and outfit and therefore person fit cannot be reliably predicted by mode. After analyzing individual results, mode is a significant predictor in 13 of the 28 models, split across infit and outfit models, often occurring within the same subject and grade level. For example, mode was a significant predictor of person infit and outfit for mathematics grade 6 ($p = .006$, and $p < .0001$, respectively). Furthermore, although mode for mathematics and science tended to be a stronger predictor for person fit than ELA, mode explains very little variance in person fit. R-squared values provide an indication of effect size of significant findings, effect sizes less than .1 are very small.

Table S–3. Multivariate Regression Model Results by Subject and Grade Level

Subject	Grade	Person Fit	F Value	Sig.	R-Square
Mathematics	3	Infit	301.45	<.0001	0.013
Mathematics	3	Outfit	1837.22	<.0001	0.075
Mathematics	4	Infit	337.98	<.0001	0.014
Mathematics	4	Outfit	943.58	<.0001	0.039
Mathematics	5	Infit	213.35	<.0001	0.009
Mathematics	5	Outfit	2707.64	<.0001	0.104
Mathematics	6	Infit	332.73	<.0001	0.014
Mathematics	6	Outfit	1145.75	<.0001	0.047
Mathematics	7	Infit	690.02	<.0001	0.029
Mathematics	7	Outfit	2653.30	<.0001	0.102
Mathematics	8	Infit	232.84	<.0001	0.010
Mathematics	8	Outfit	1277.69	<.0001	0.052
ELA	3	Infit	497.22	<.0001	0.022
ELA	3	Outfit	1466.41	<.0001	0.061
ELA	4	Infit	152.63	<.0001	0.007
ELA	4	Outfit	937.44	<.0001	0.039
ELA	5	Infit	621.32	<.0001	0.026
ELA	5	Outfit	1901.05	<.0001	0.075
ELA	6	Infit	508.54	<.0001	0.021
ELA	6	Outfit	1863.51	<.0001	0.074
ELA	7	Infit	190.96	<.0001	0.008
ELA	7	Outfit	674.21	<.0001	0.028
ELA	8	Infit	48.58	<.0001	0.002
ELA	8	Outfit	887.05	<.0001	0.037
Science	4	Infit	1179.00	<.0001	0.048
Science	4	Outfit	1932.43	<.0001	0.077
Science	8	Infit	319.19	<.0001	0.014
Science	8	Outfit	1302.50	<.0001	0.053

CONCLUSION AND FUTURE DIRECTIONS

The analyses conducted here provide preliminary evidence that there is little influence of mode on person infit and outfit statistics, suggesting that the data fit the model regardless of mode, EL, and IEP status. Although the results show statistical significance, there is very little practical significance in the results of the study. In all the models analyzed, less than 11% of the variance in infit and outfit was explained by the predictors.

APPENDIX T: PRE-EQUATING VERIFICATION RESULTS

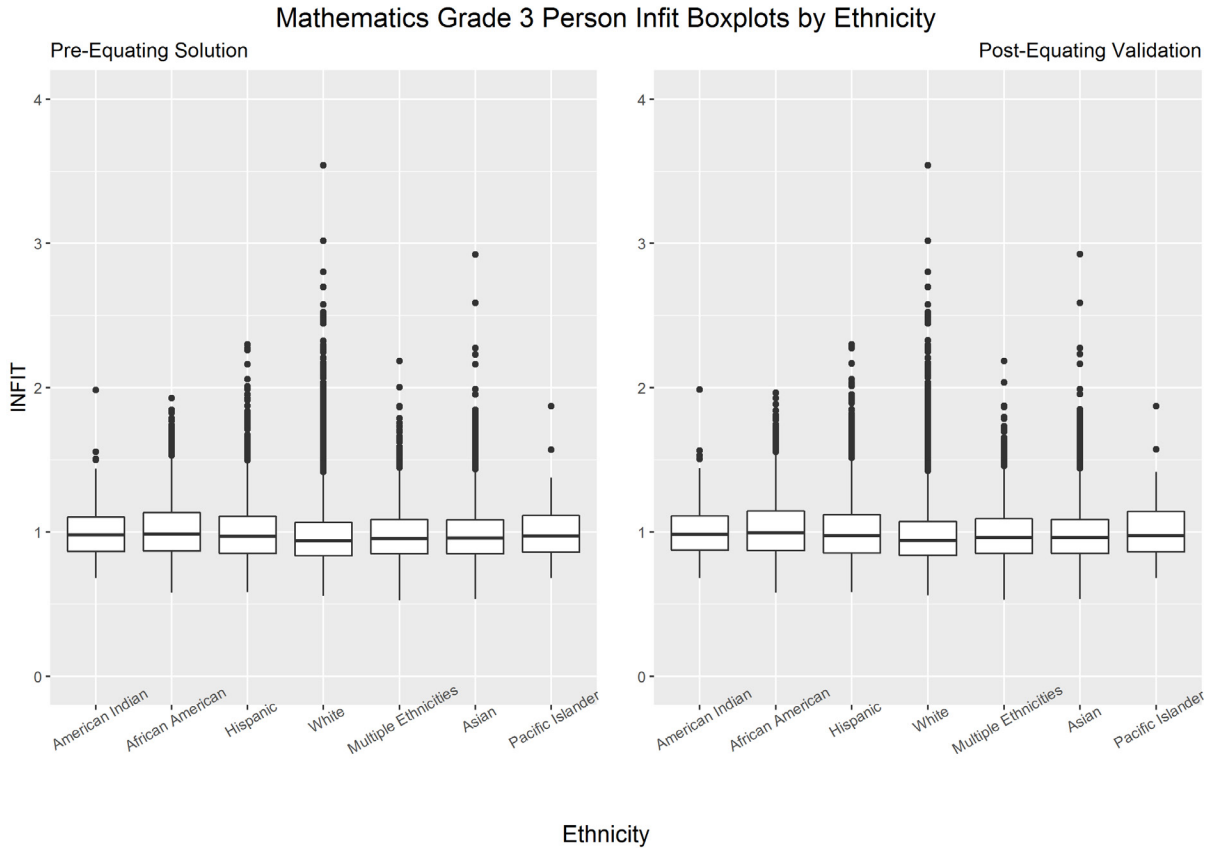
PRE-EQUATING VERIFICATION RESULTS

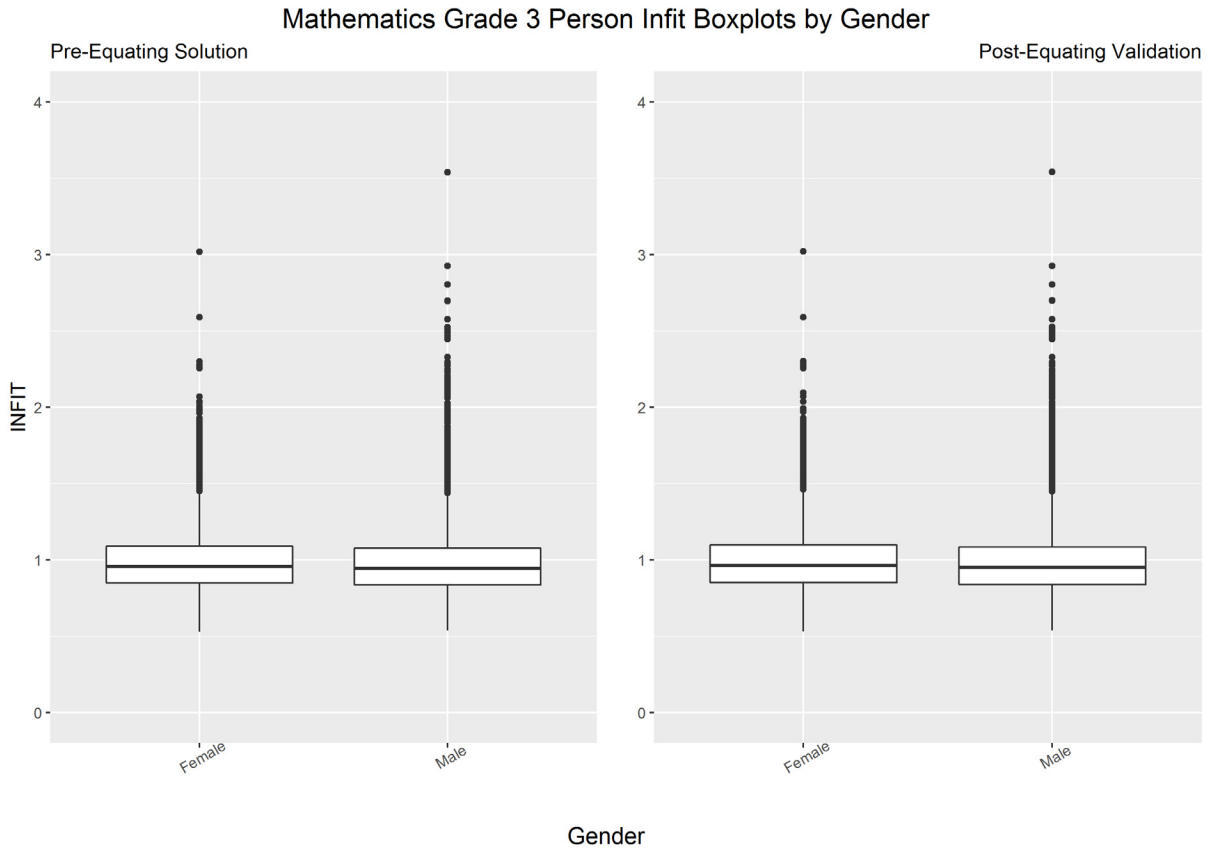
Appendix T contains information and results based on the data used for the pre-equating verification. Results are presented for the fully-anchored pre-equating solution (hereinafter "pre-equating") and the partially anchored pre-equating solution when misfitting items were freely calibrated (hereinafter "post-equating"). The results presented in this appendix provide support for utilizing the pre-equated solution for all student reporting. A complete description of the pre-equating verification process is discussed in Chapter Fifteen.

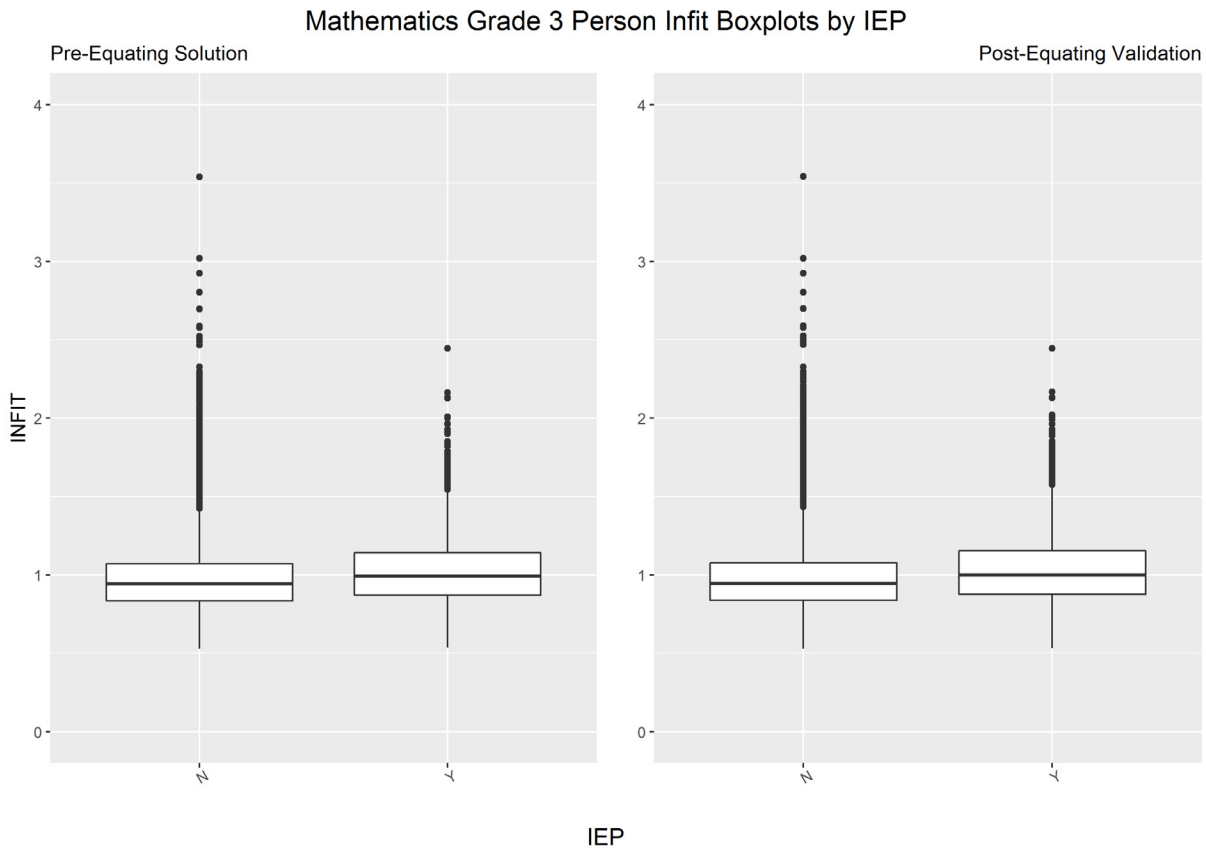
Figure T–1 shows person infit boxplots for pre-equated (left) and post-equated (right) solutions by subject and grade.

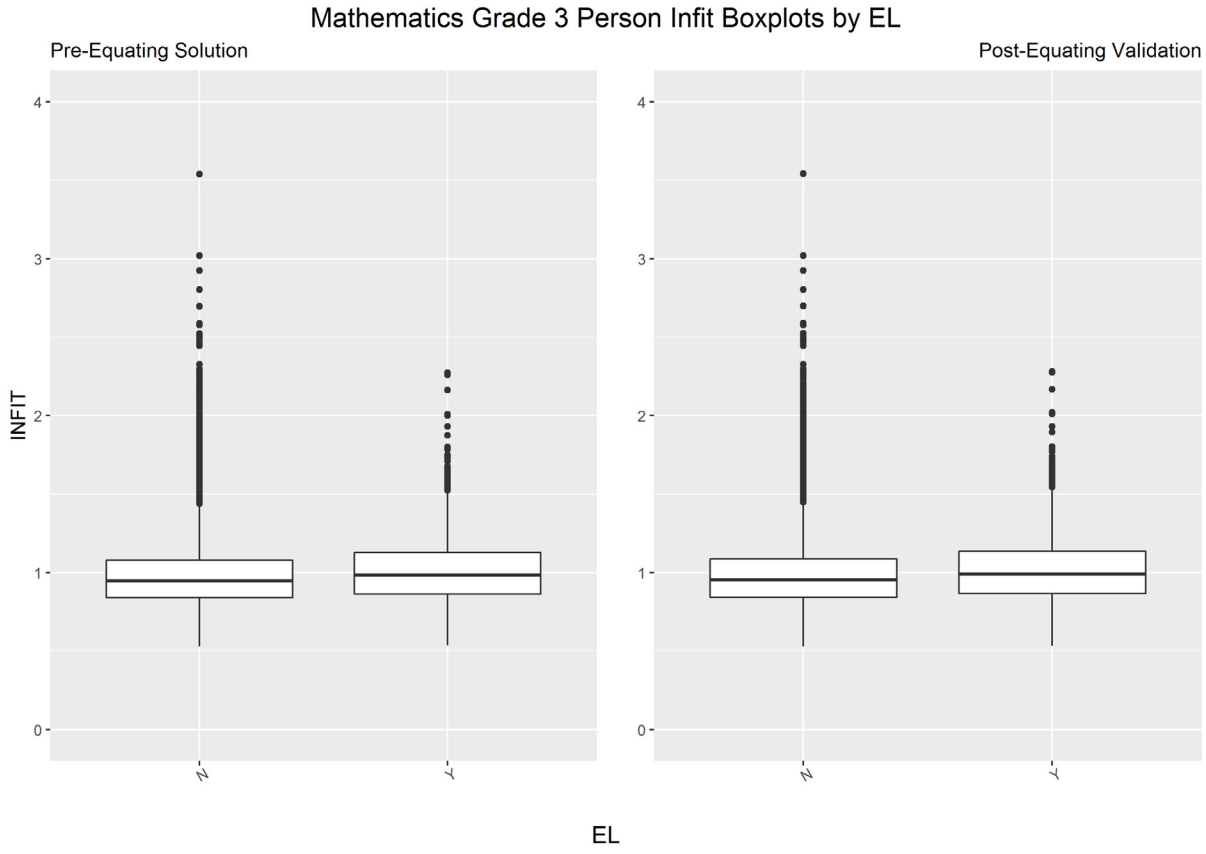
Figure T–1. Person Infit Boxplots by Subject and Grade for Pre- and Post-Equated Solutions

Mathematics Grade 3

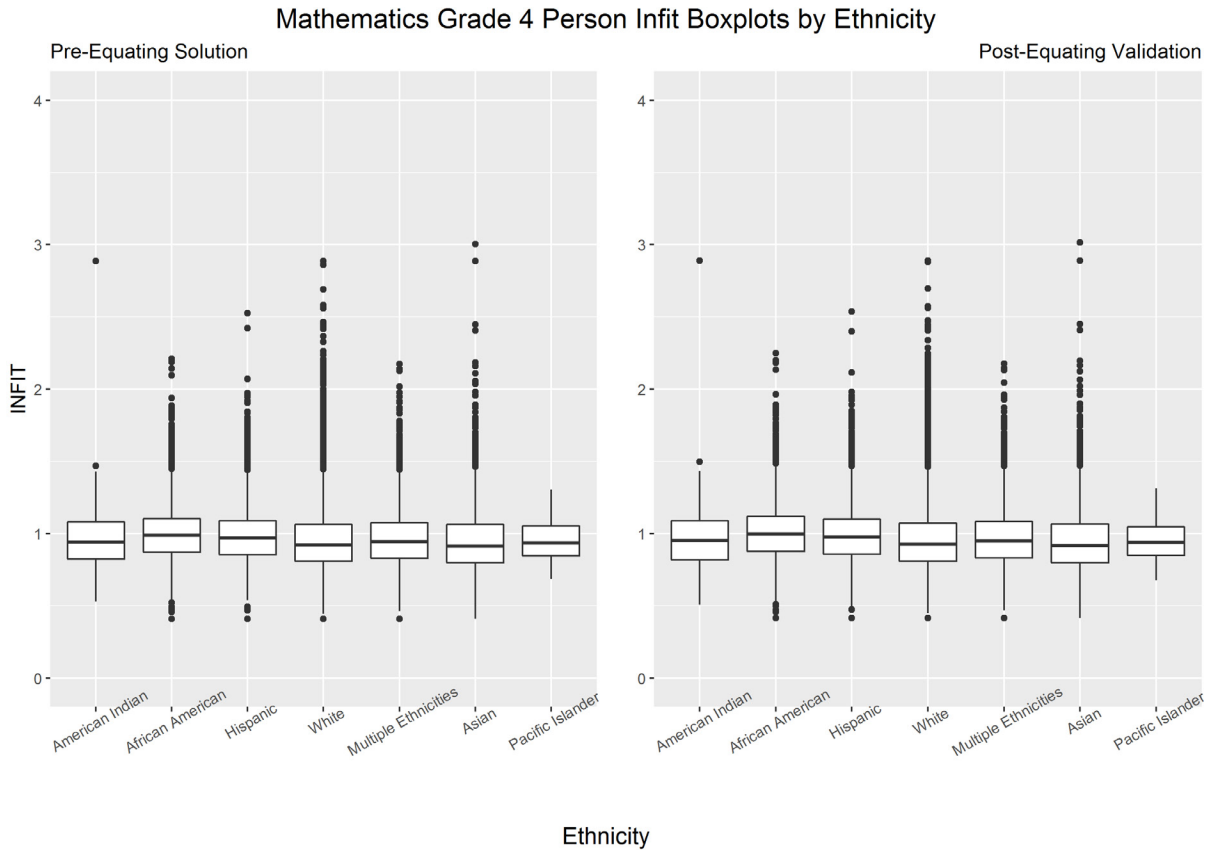


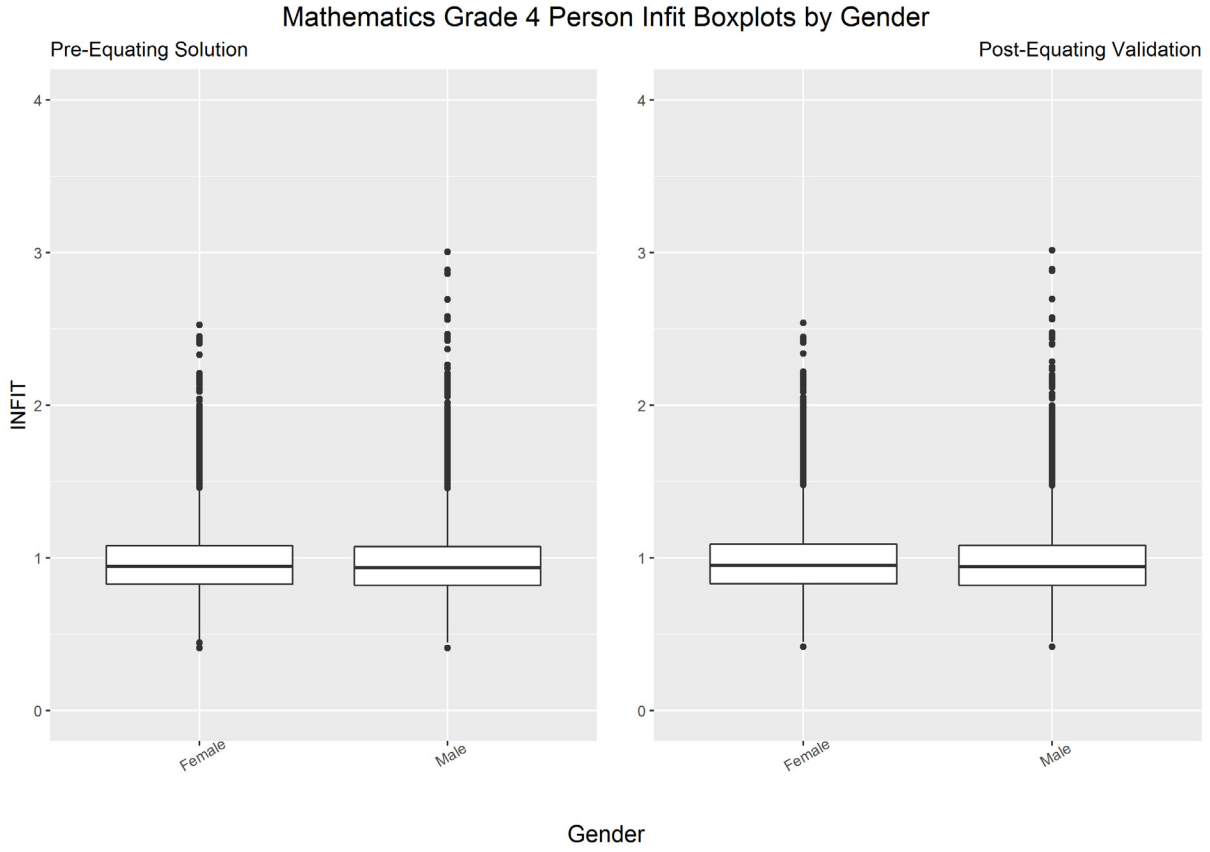


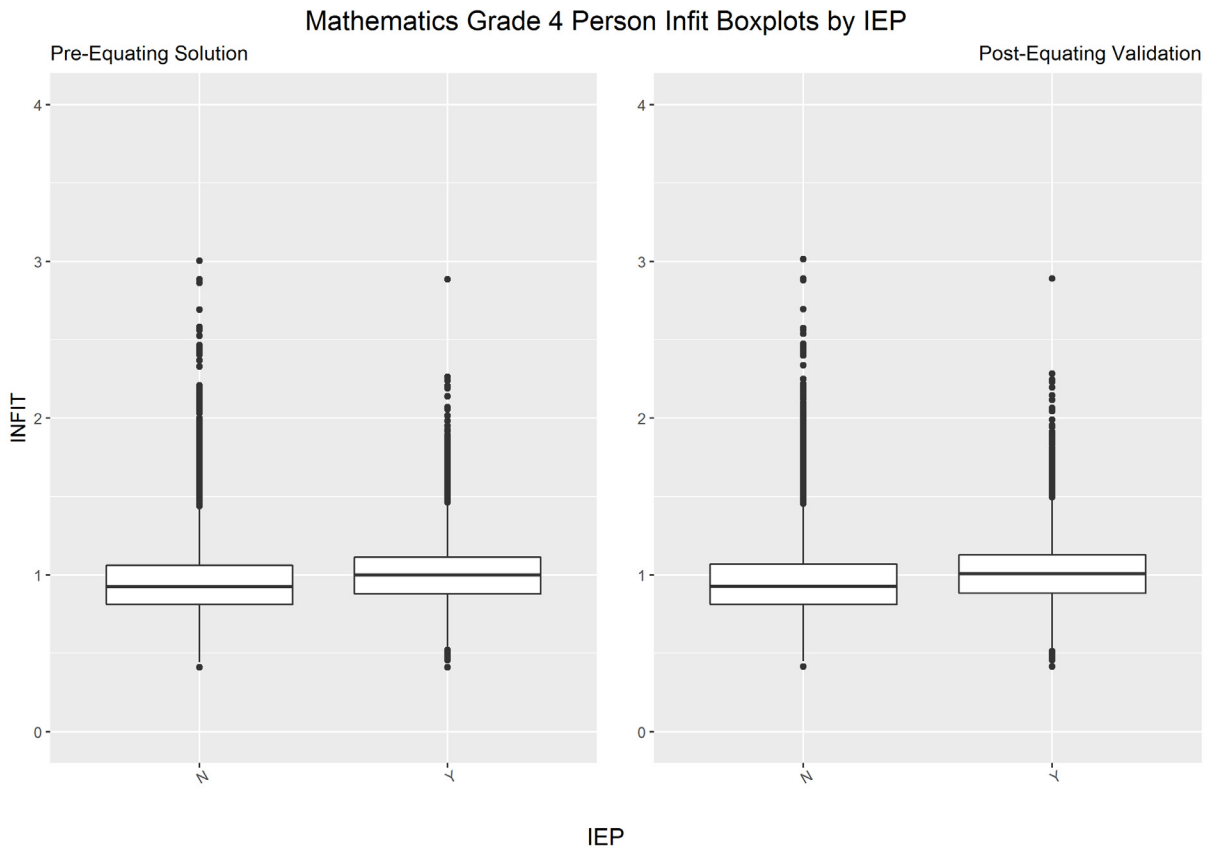

Mathematics Grade 3 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
IEP

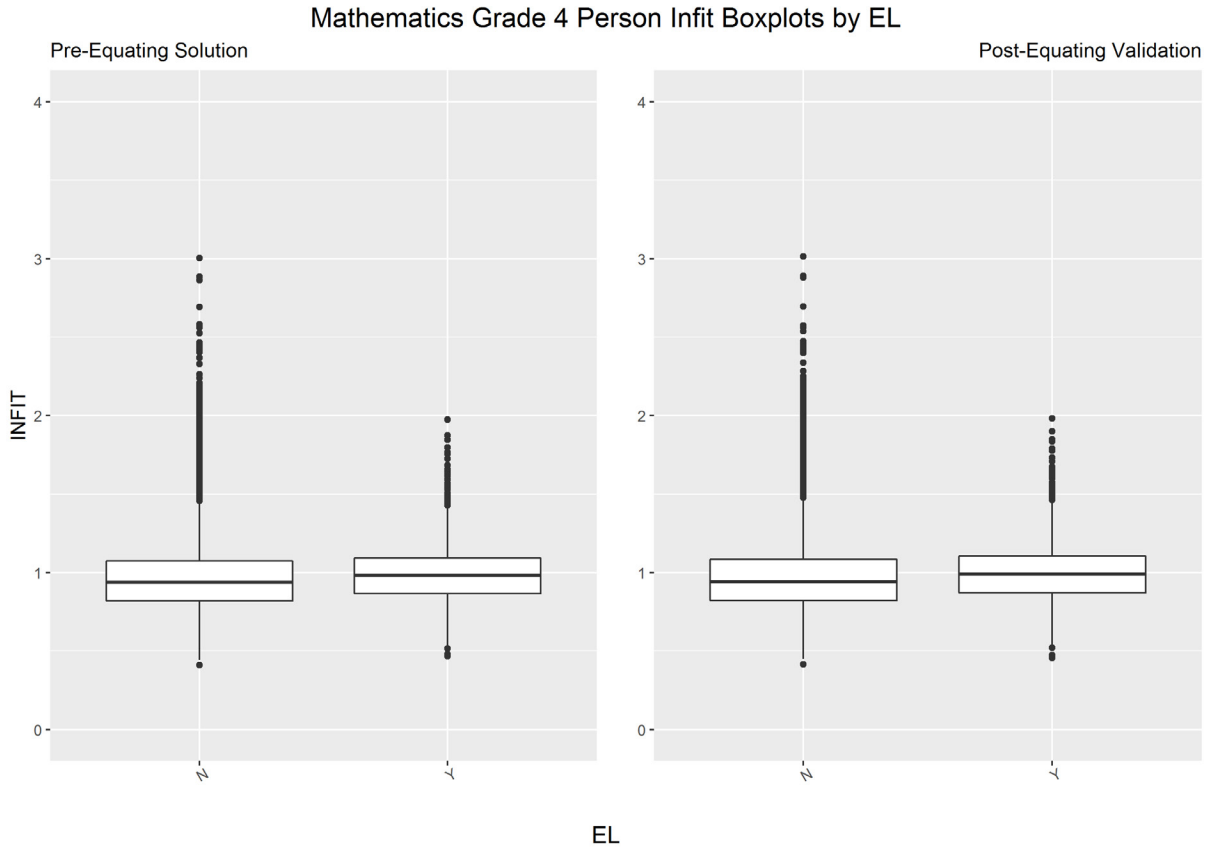

Mathematics Grade 3 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
EL

Mathematics Grade 4

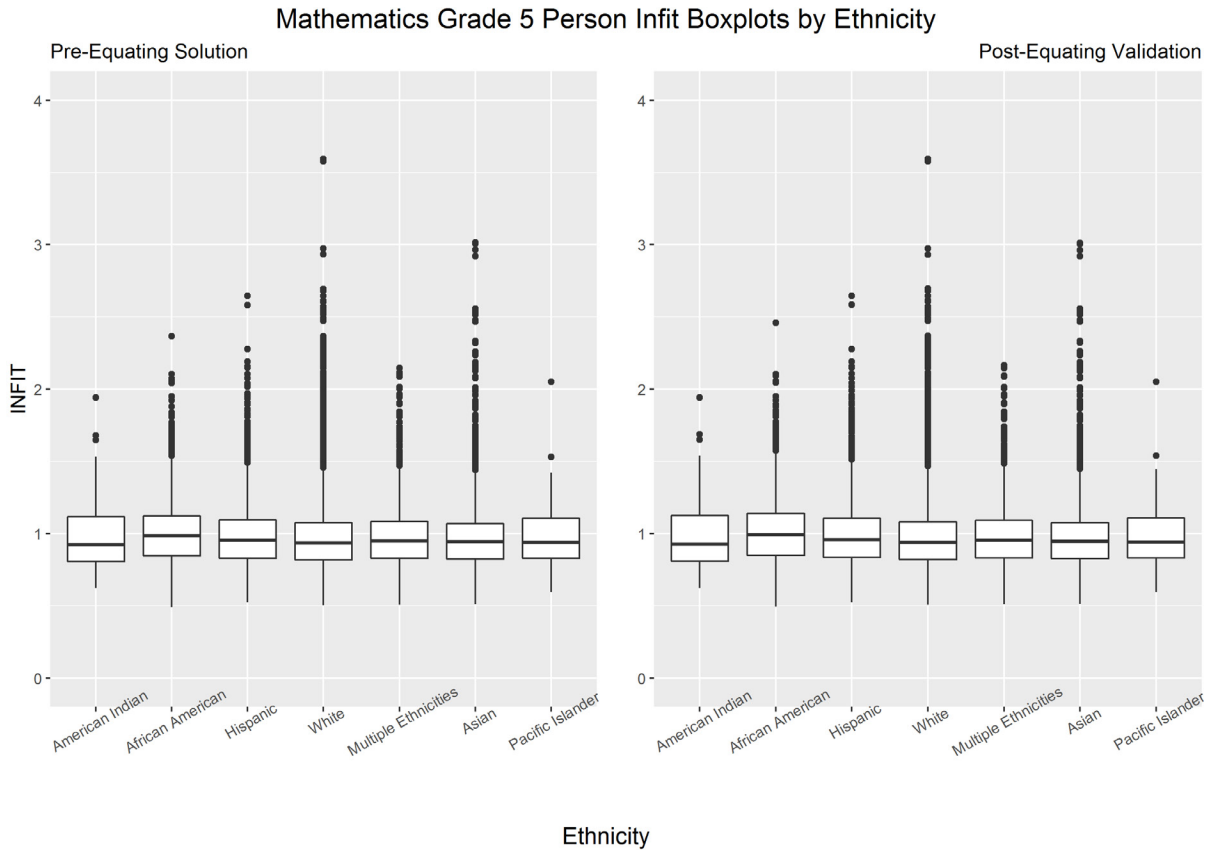


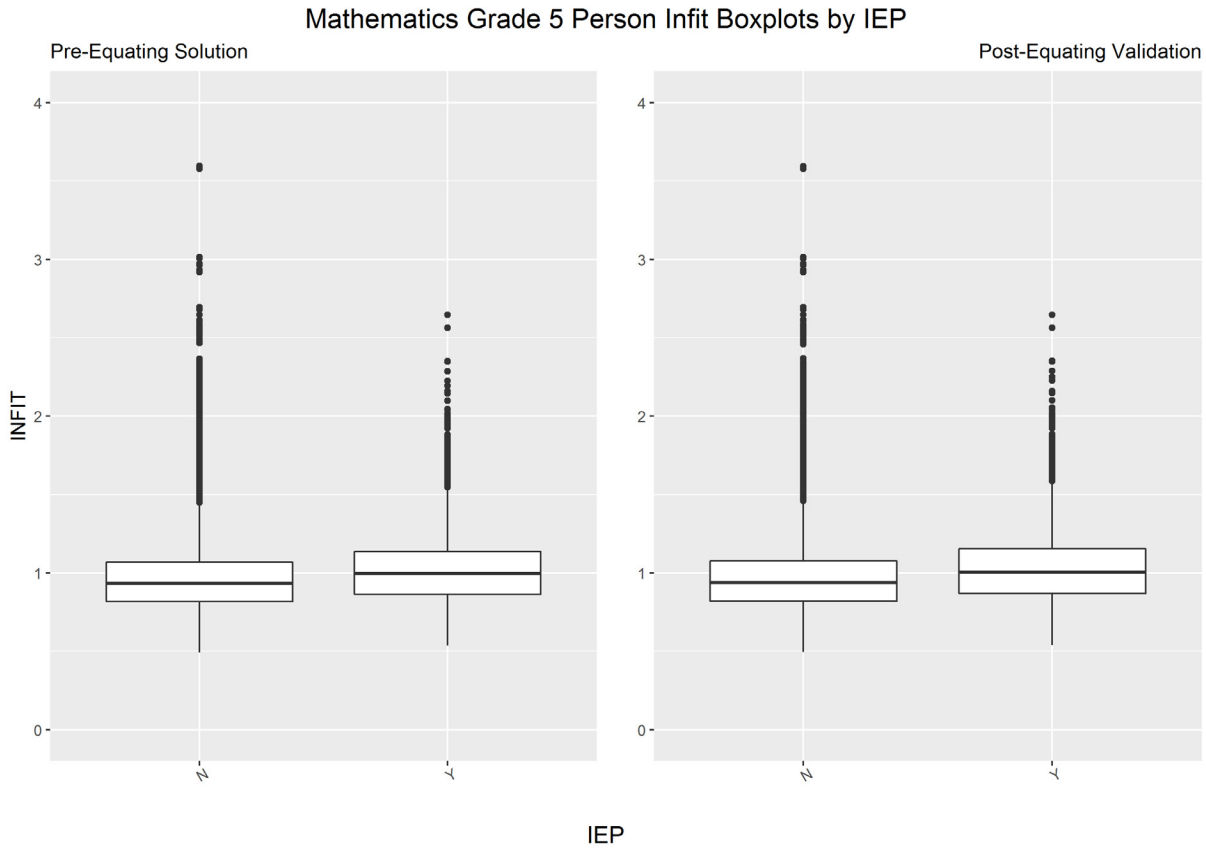


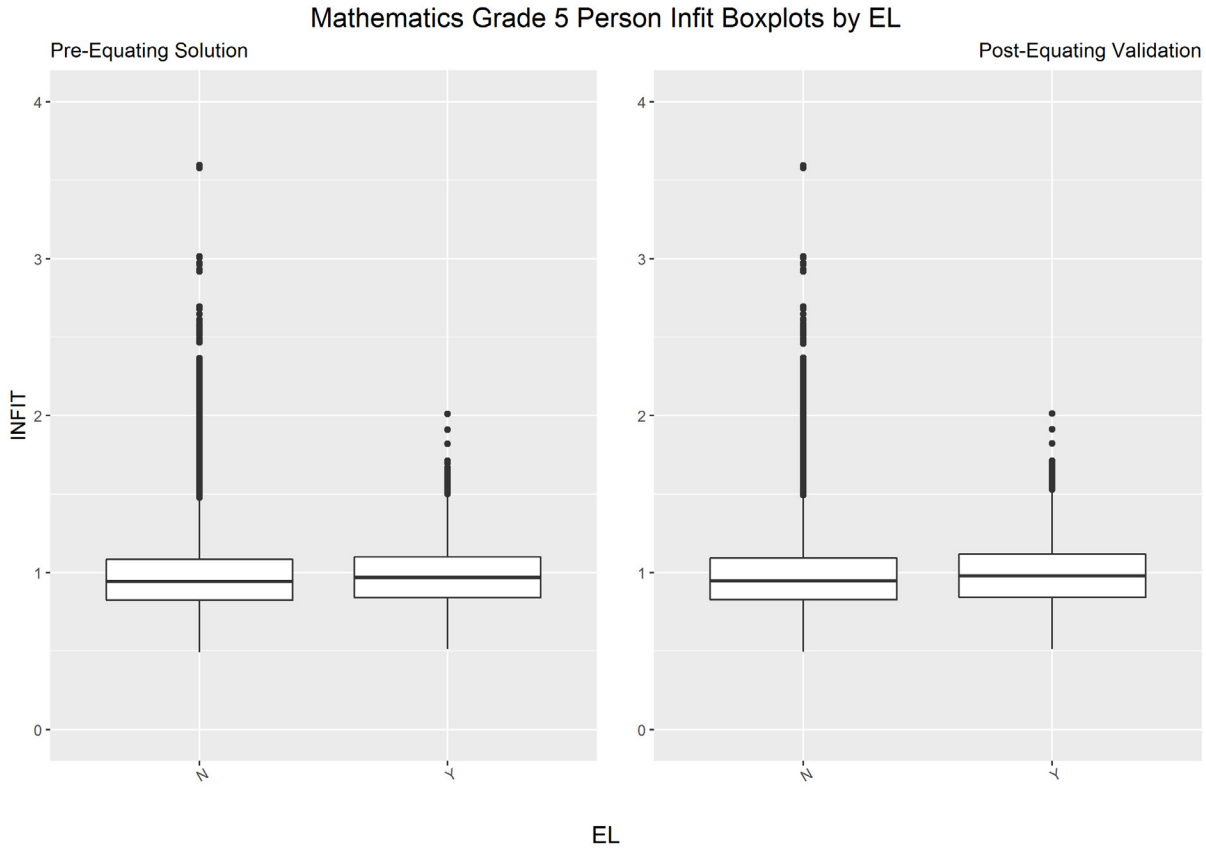

Mathematics Grade 4 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
IEP


Mathematics Grade 4 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
EL

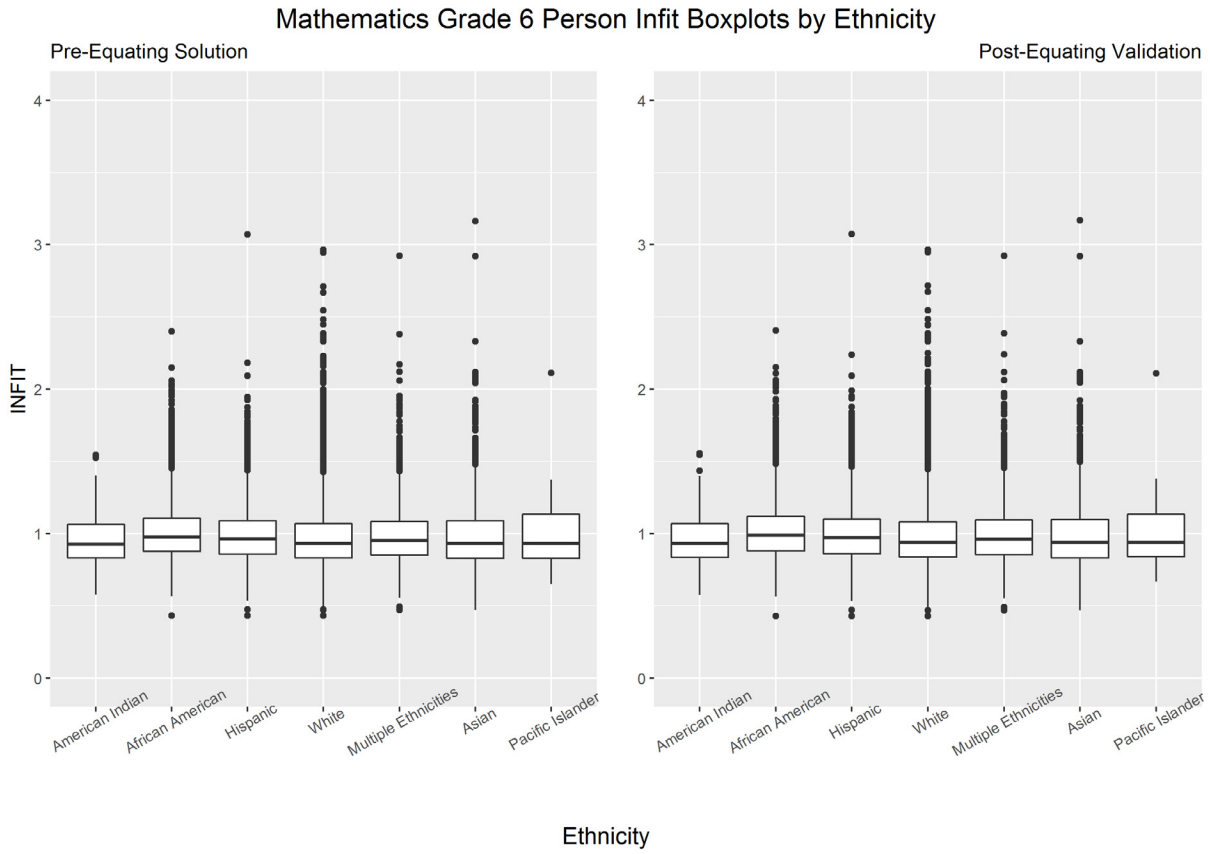
Mathematics Grade 5

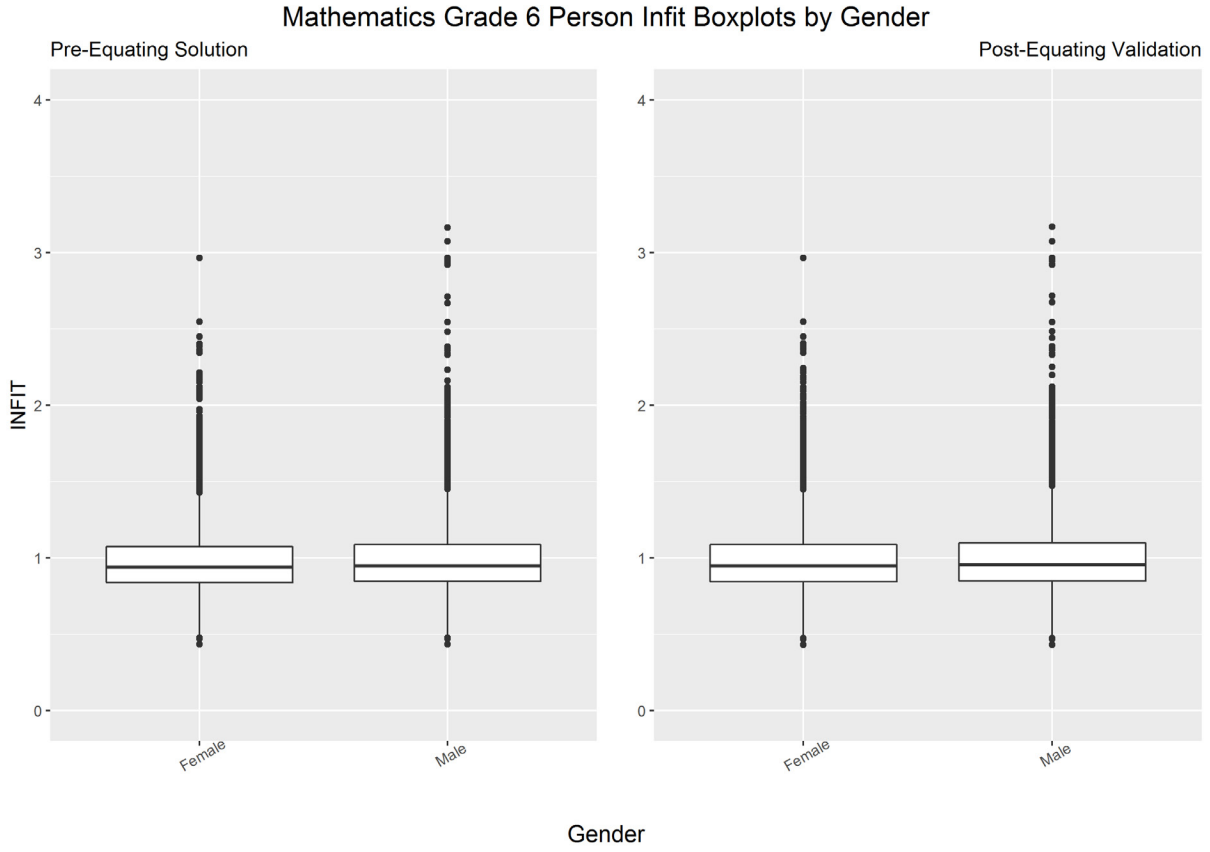


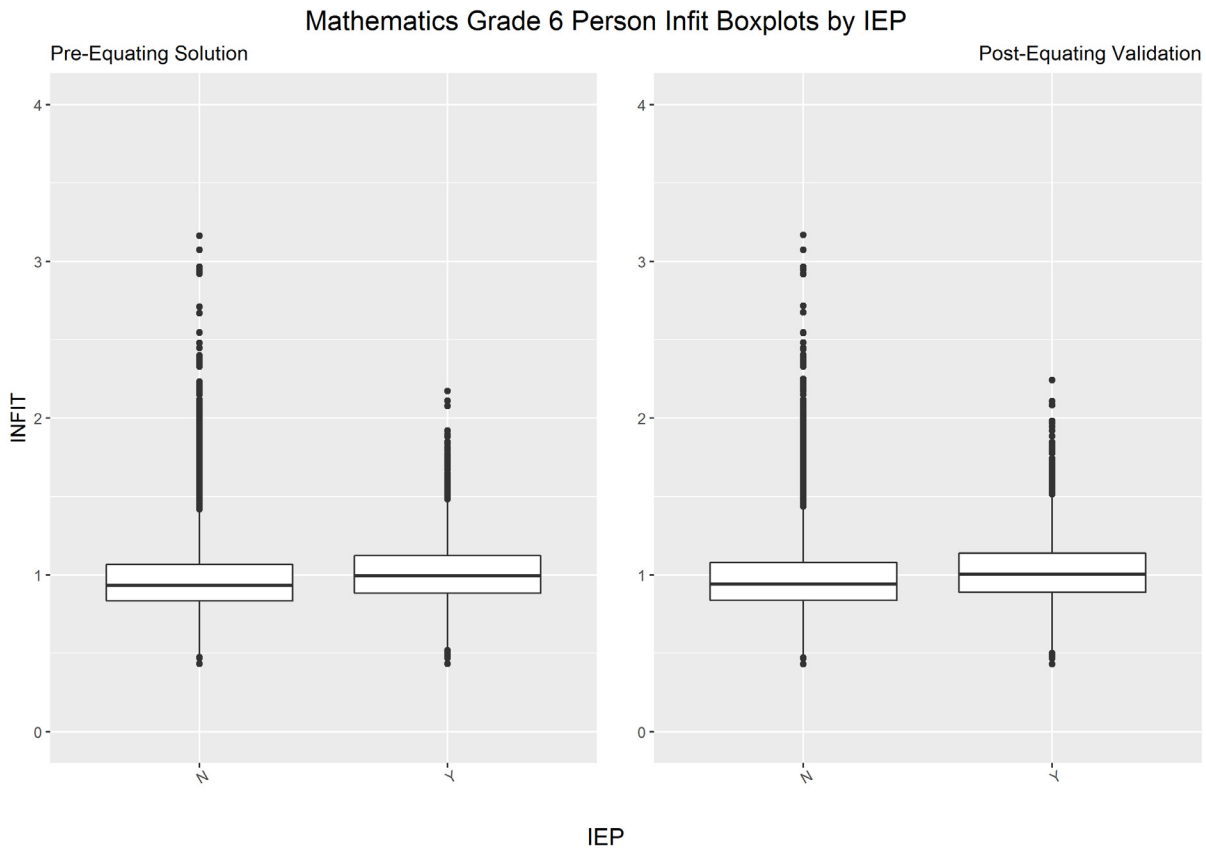

Mathematics Grade 5 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
IEP

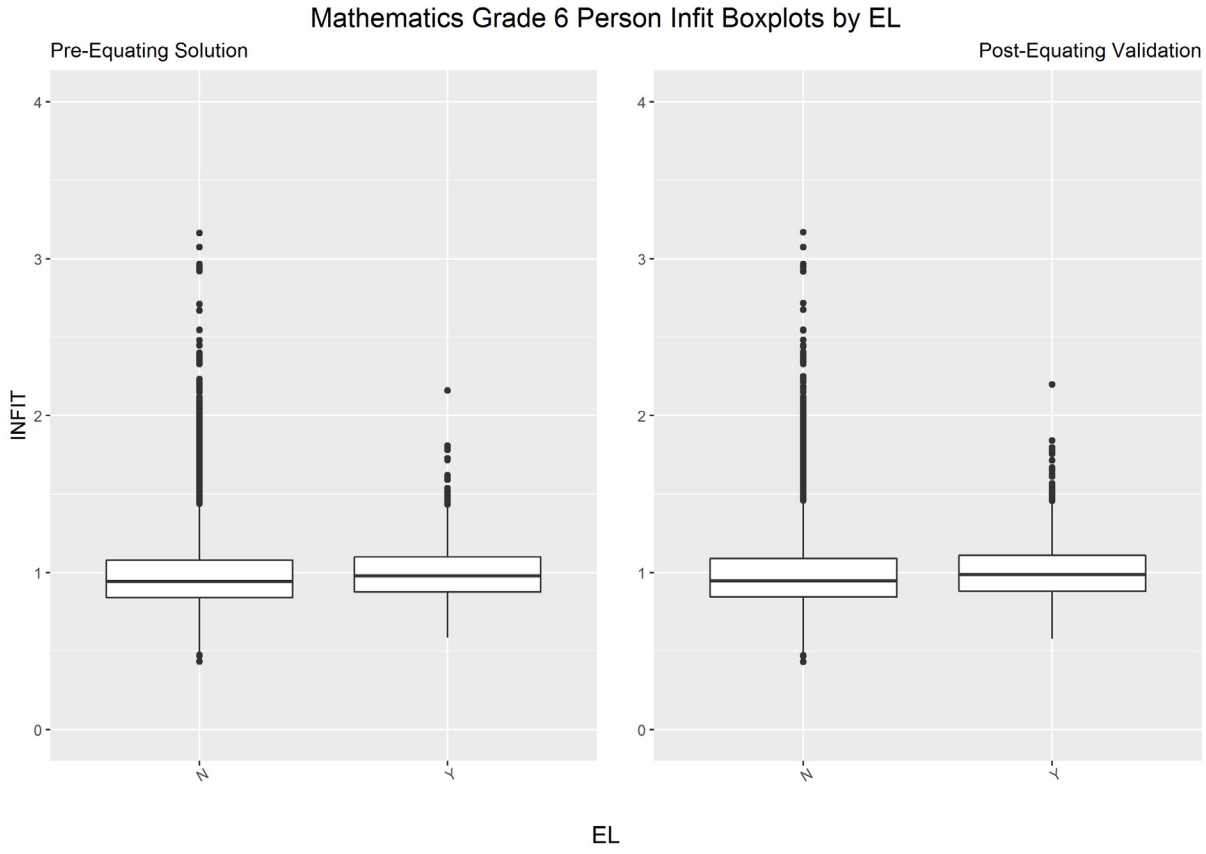

Mathematics Grade 5 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
EL

Mathematics Grade 6

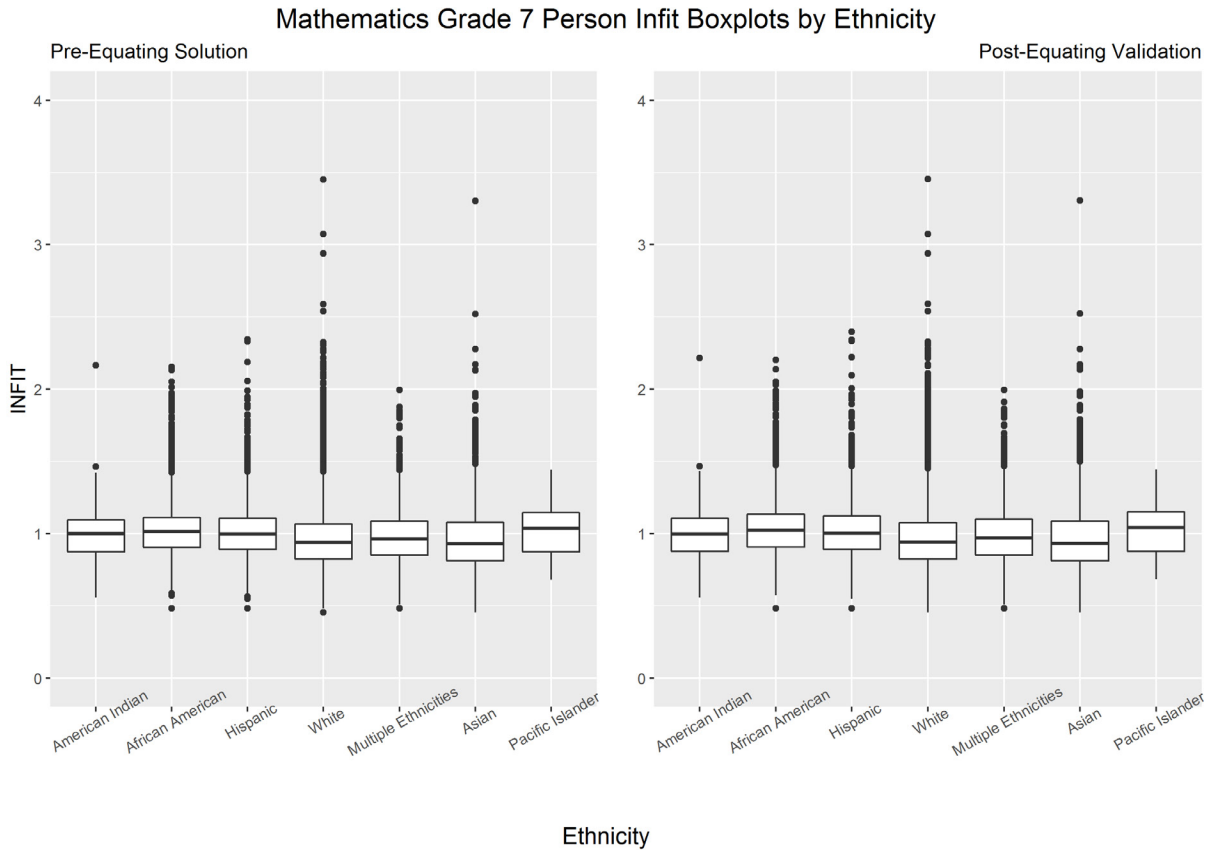


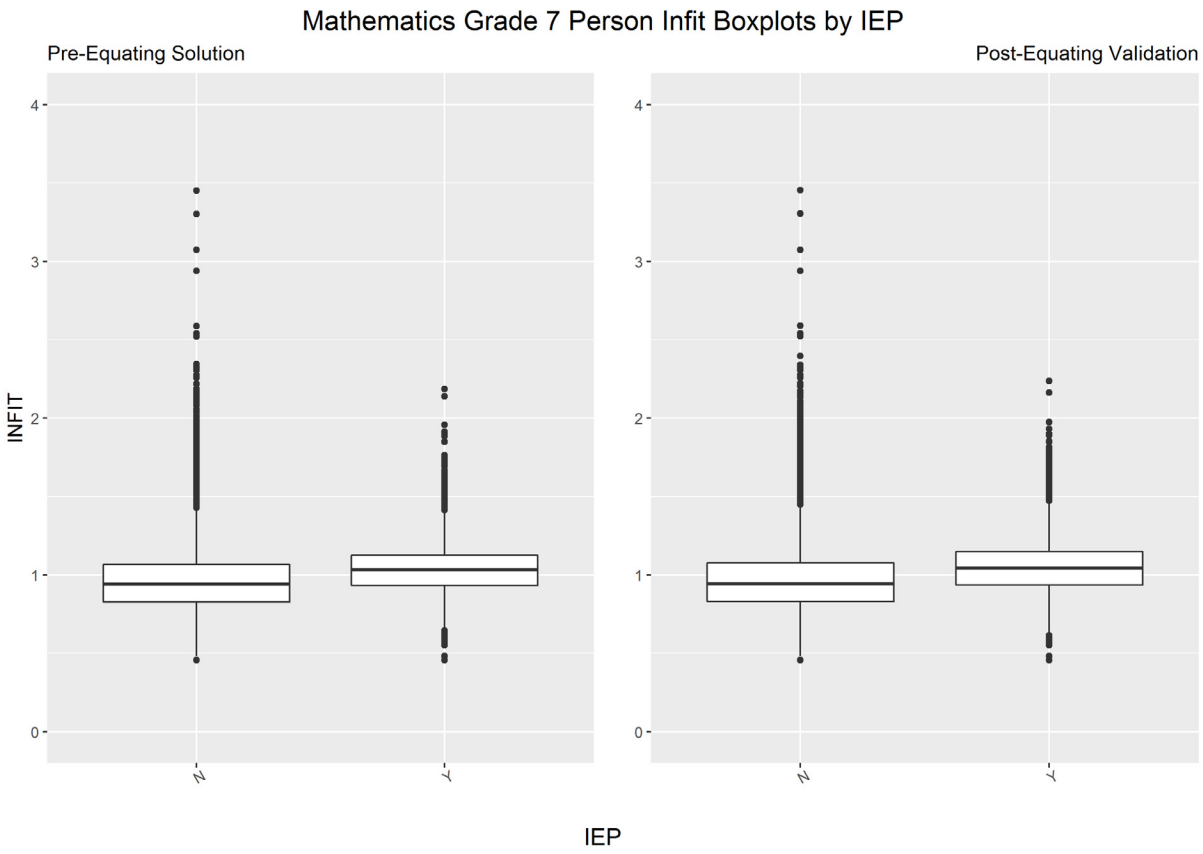


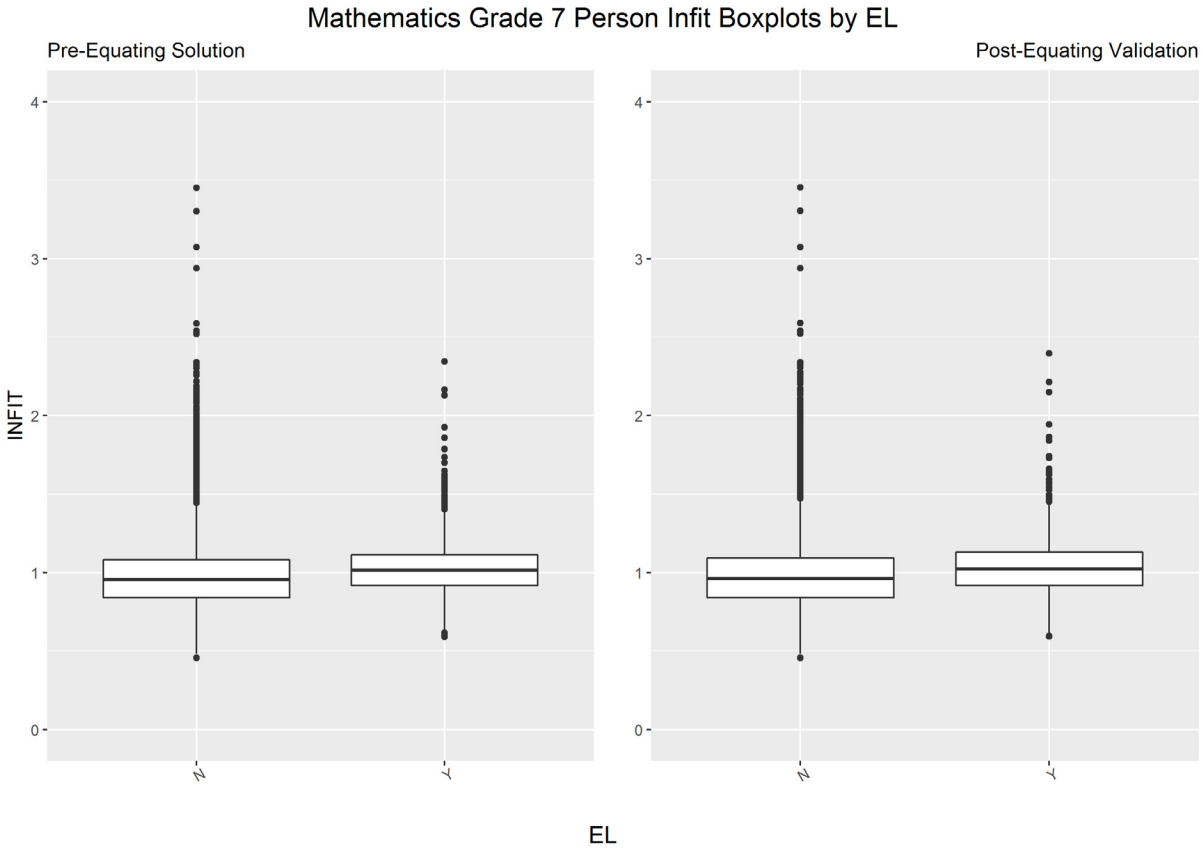

Mathematics Grade 6 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
IEP


Mathematics Grade 6 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
EL

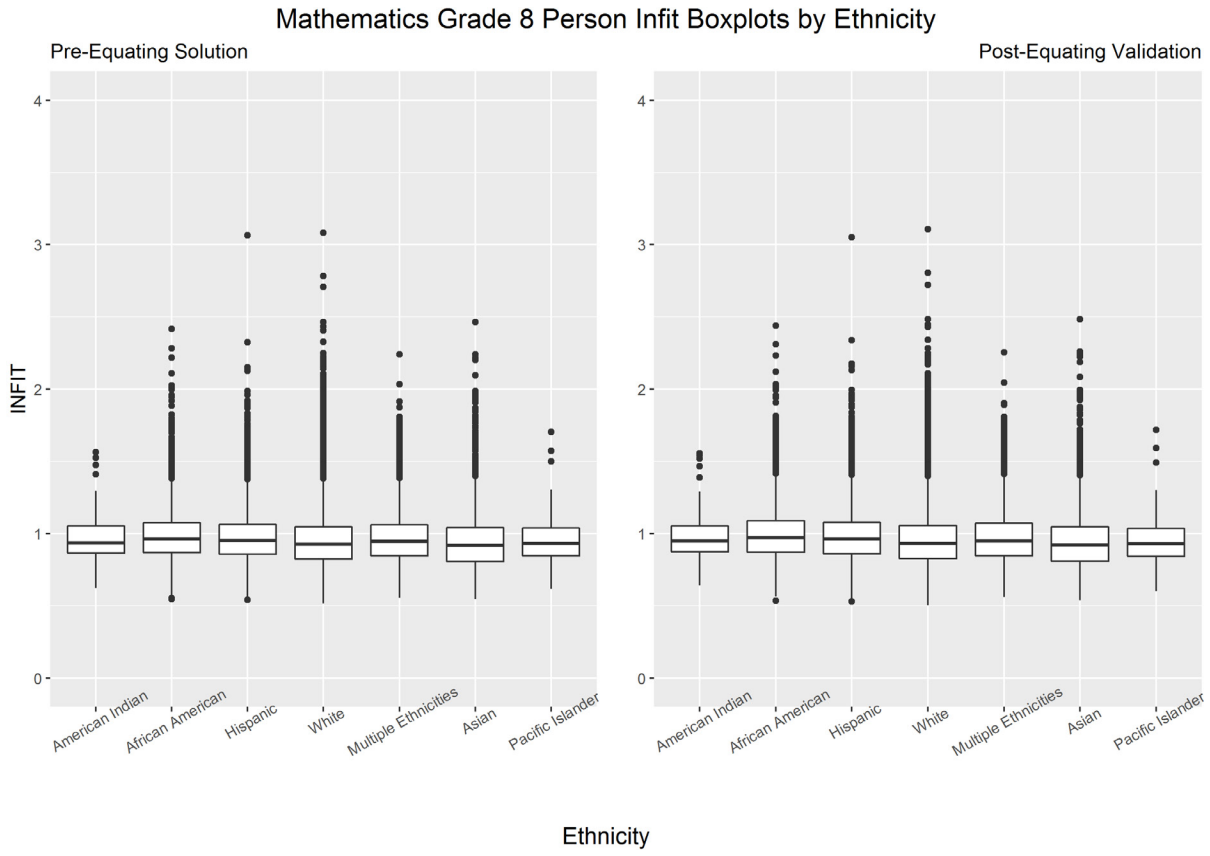
Mathematics Grade 7

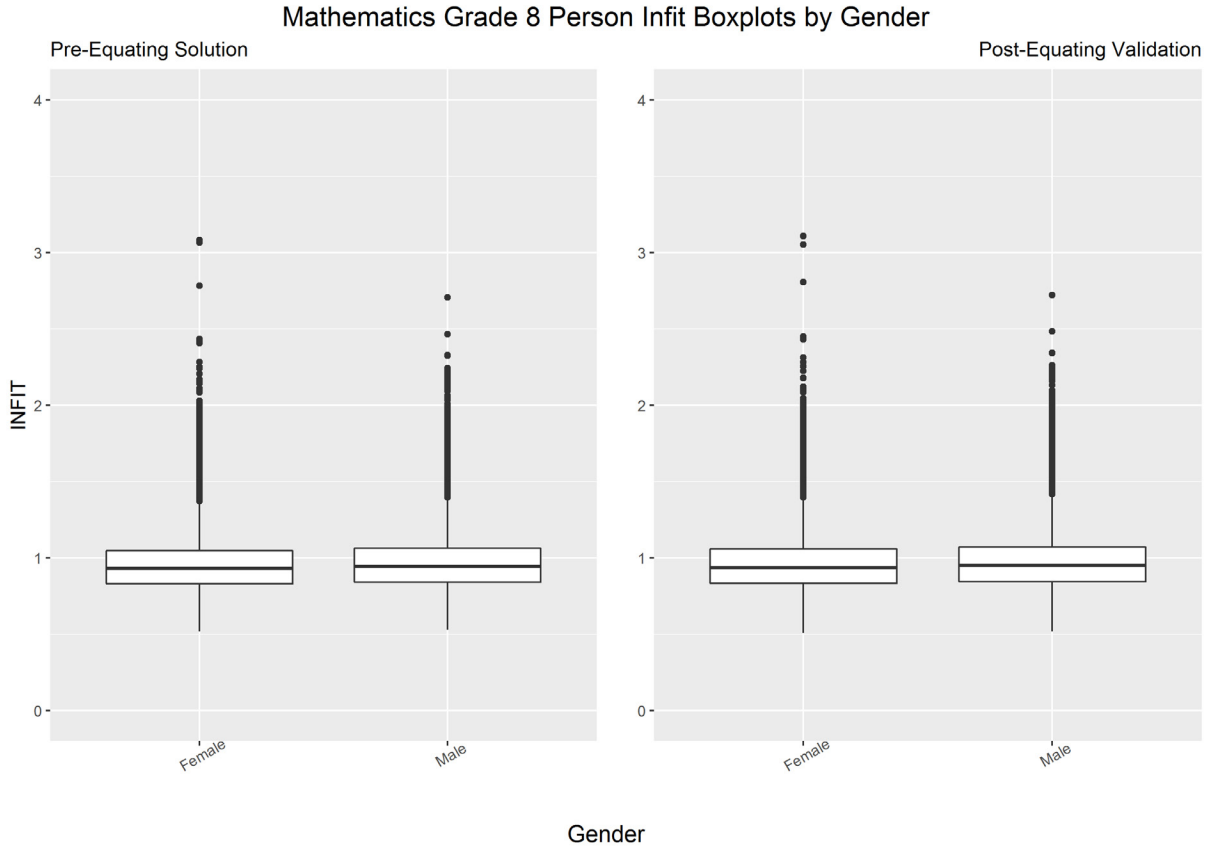


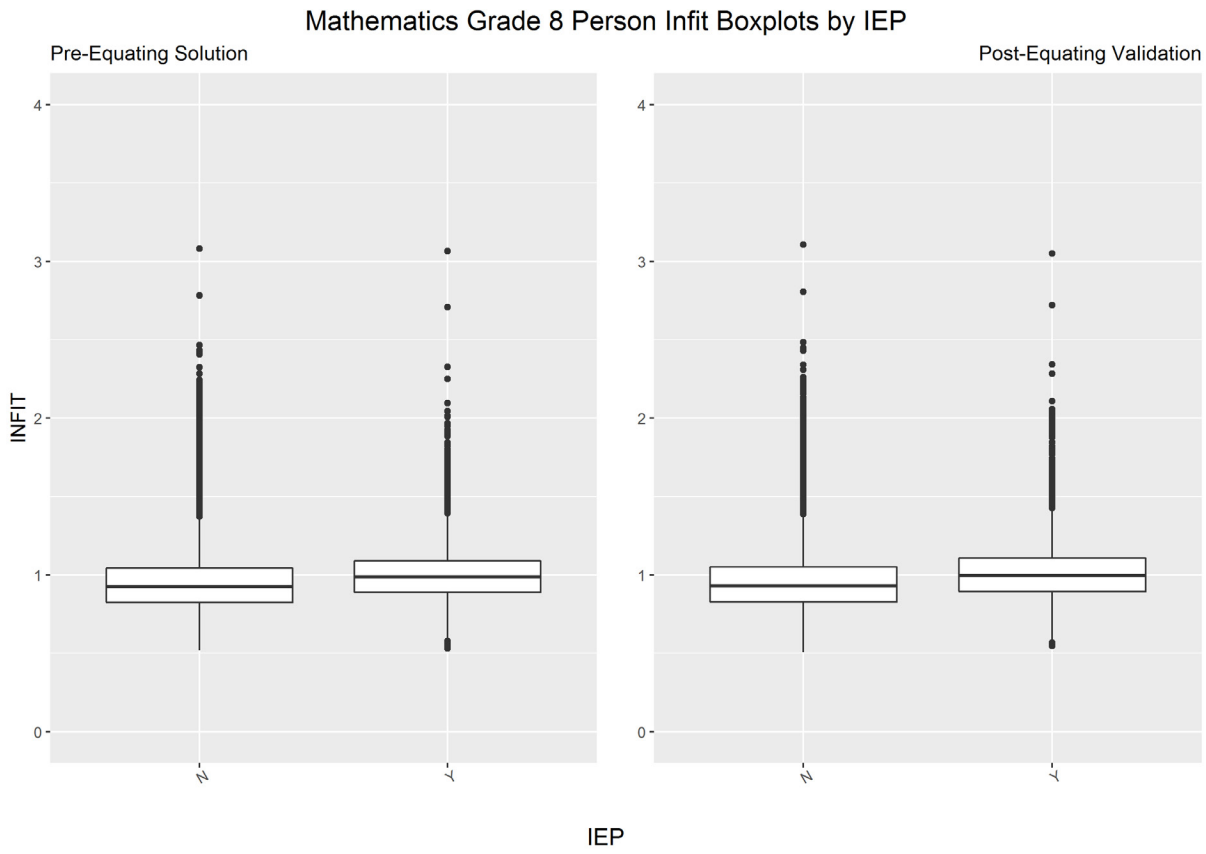

Mathematics Grade 7 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
IEP

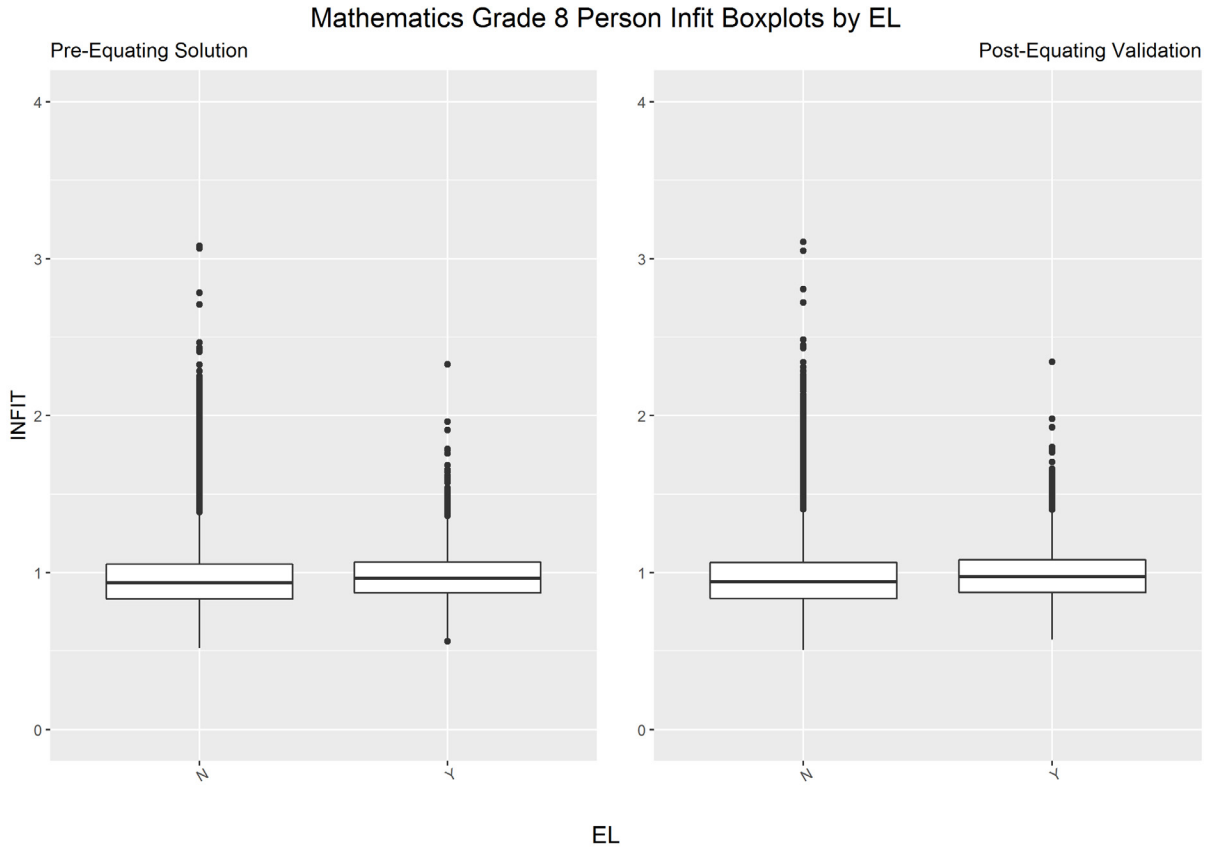

Mathematics Grade 7 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
EL

Mathematics Grade 8

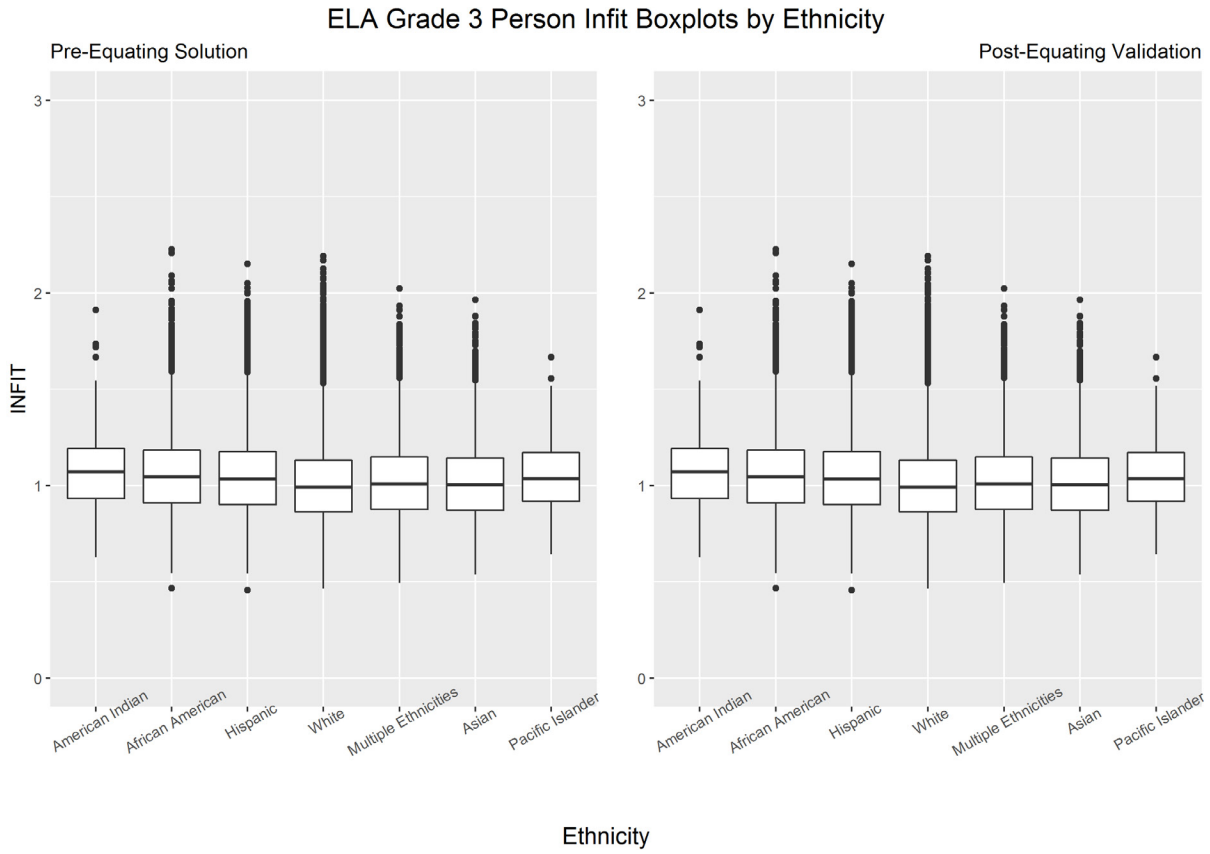


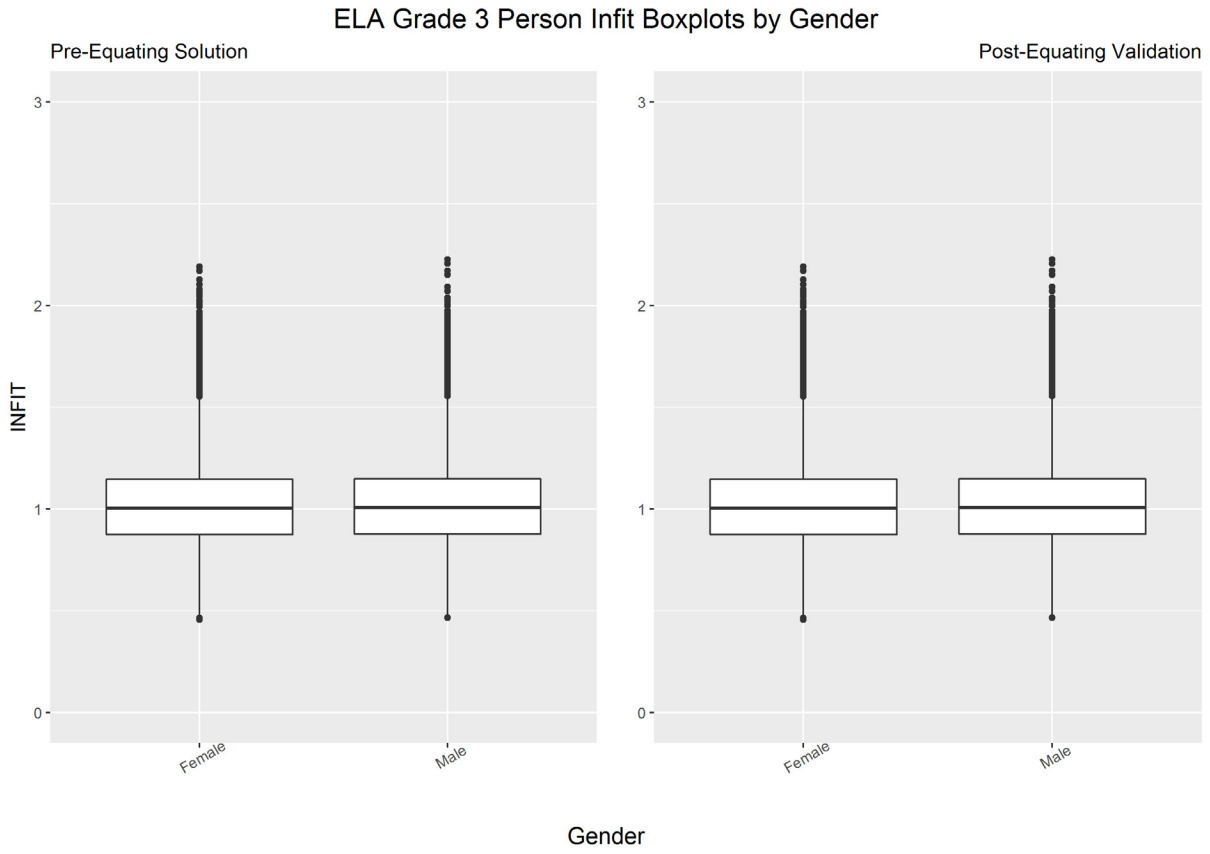


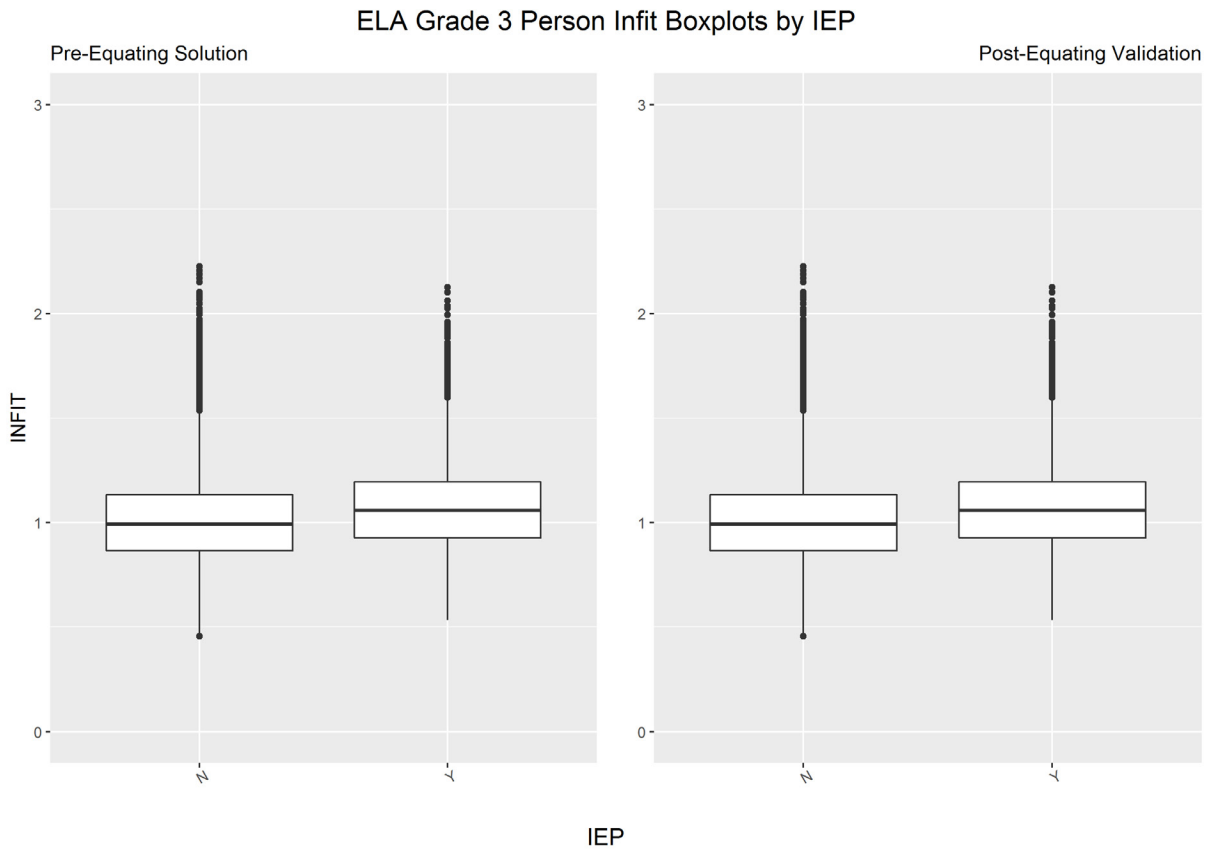

Mathematics Grade 8 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
IEP

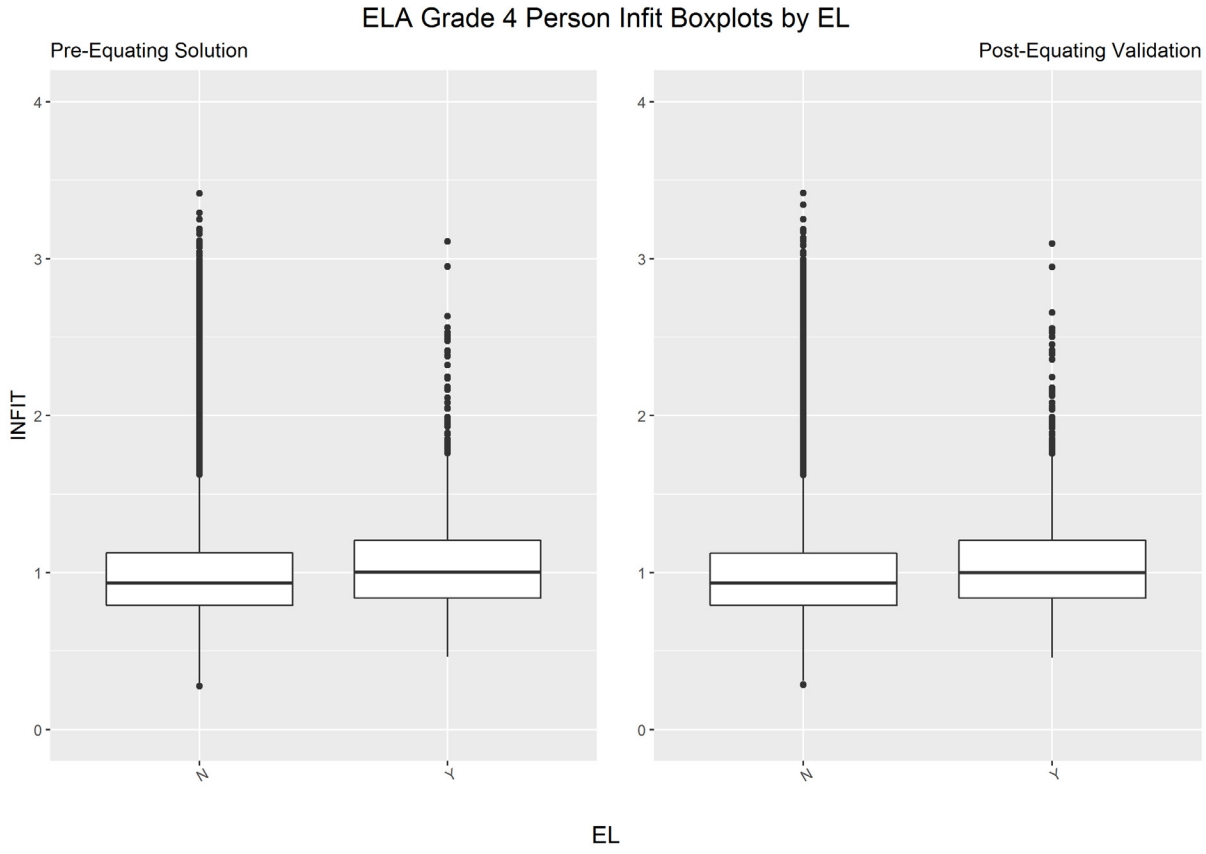

Mathematics Grade 8 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
EL

ELA Grade 3

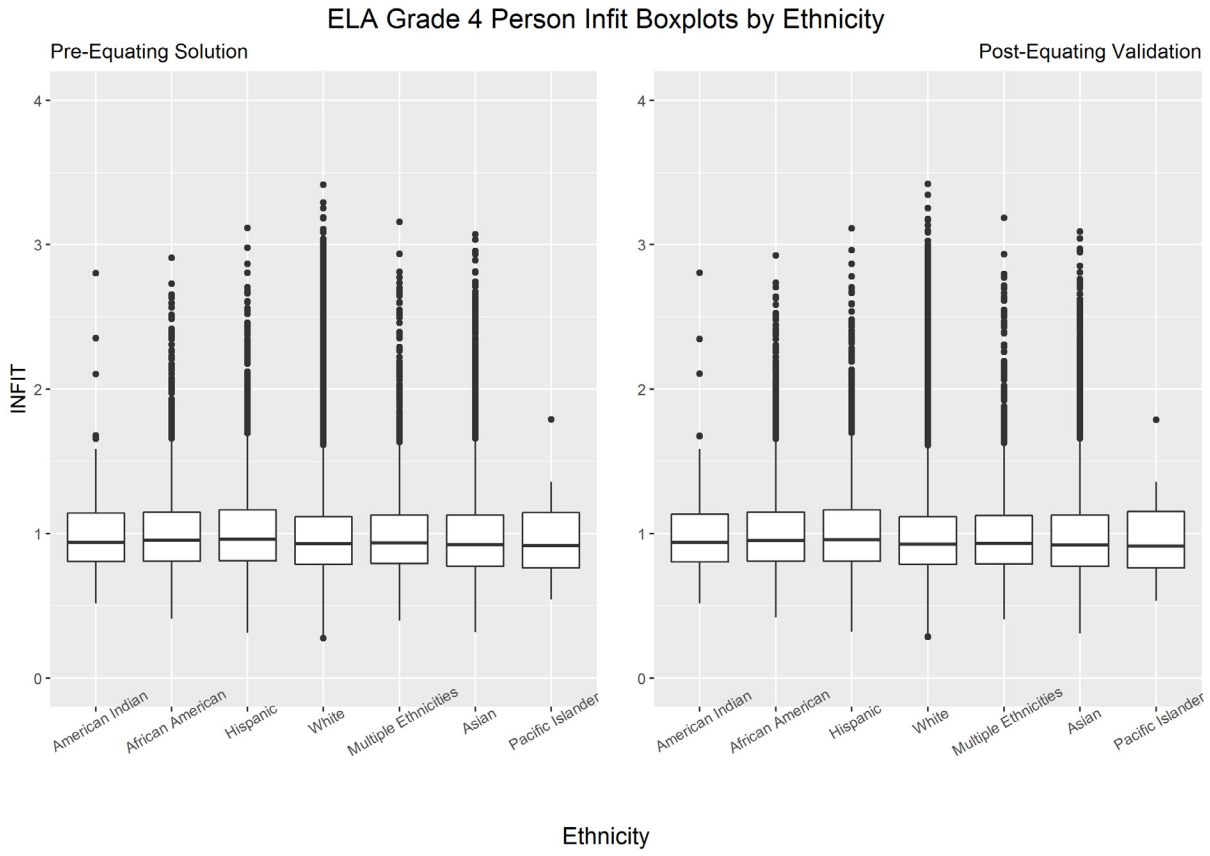

ELA Grade 3 Person Infit Boxplots by Ethnicity
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
American Indian
African American
Hispanic
White
Multiple Ethnicities
Asian
Pacific Islander
Ethnicity

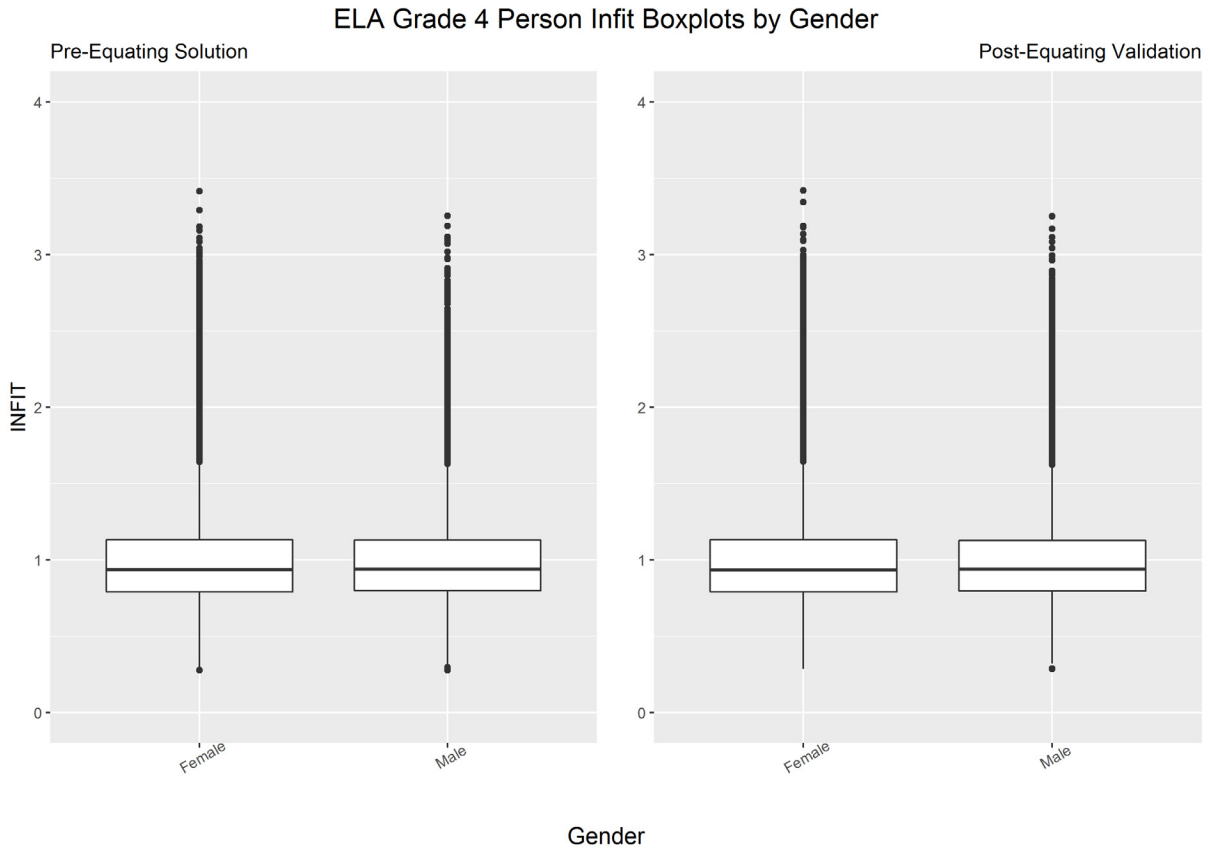

ELA Grade 3 Person Infit Boxplots by Gender
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
Female
Male
Gender

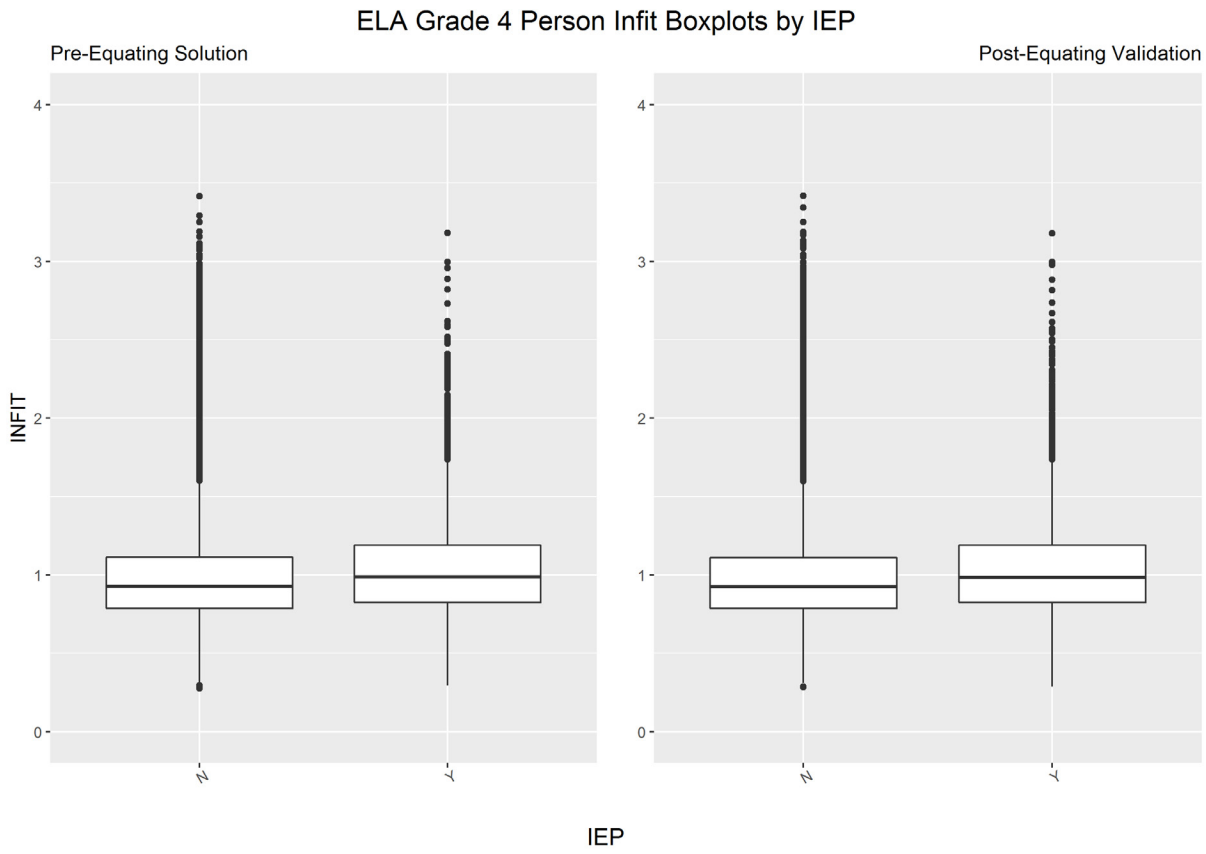

ELA Grade 3 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
N
Y
IEP

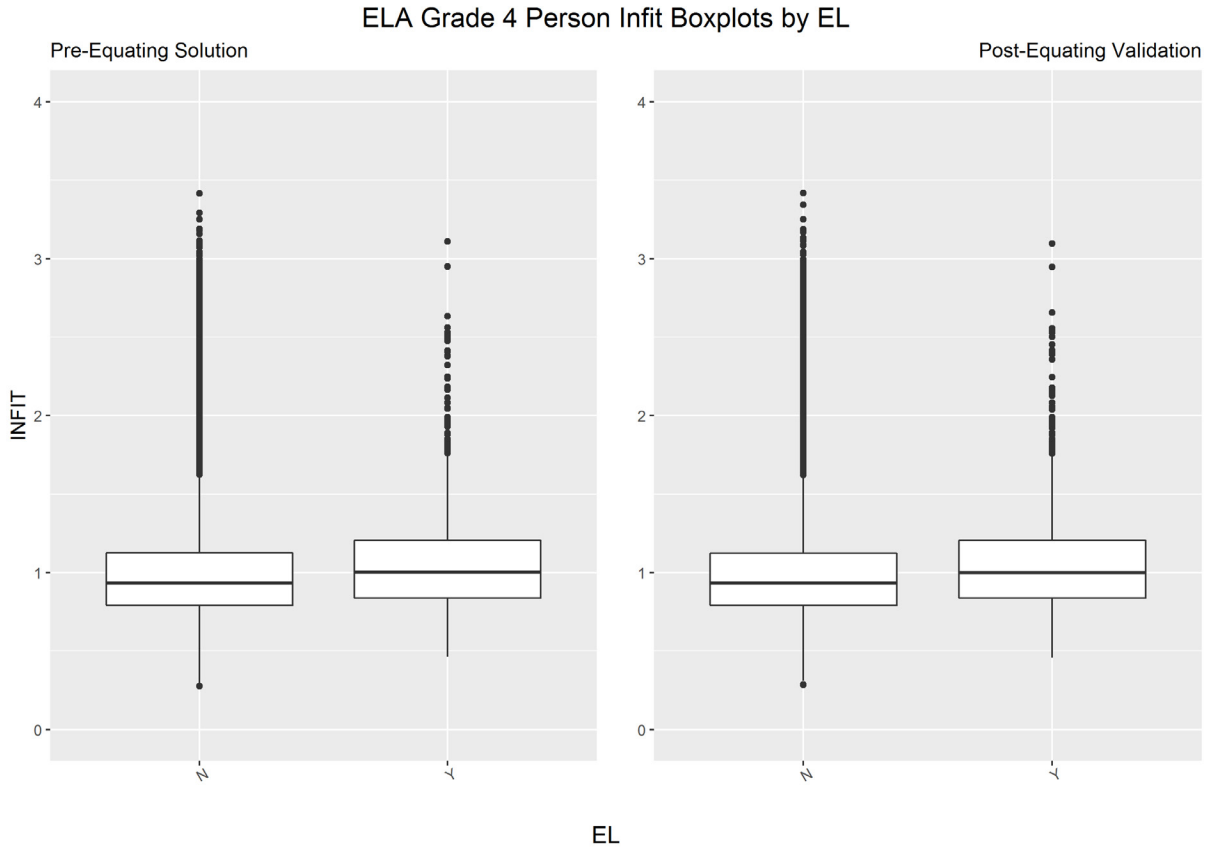

ELA Grade 4 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
EL

ELA Grade 4

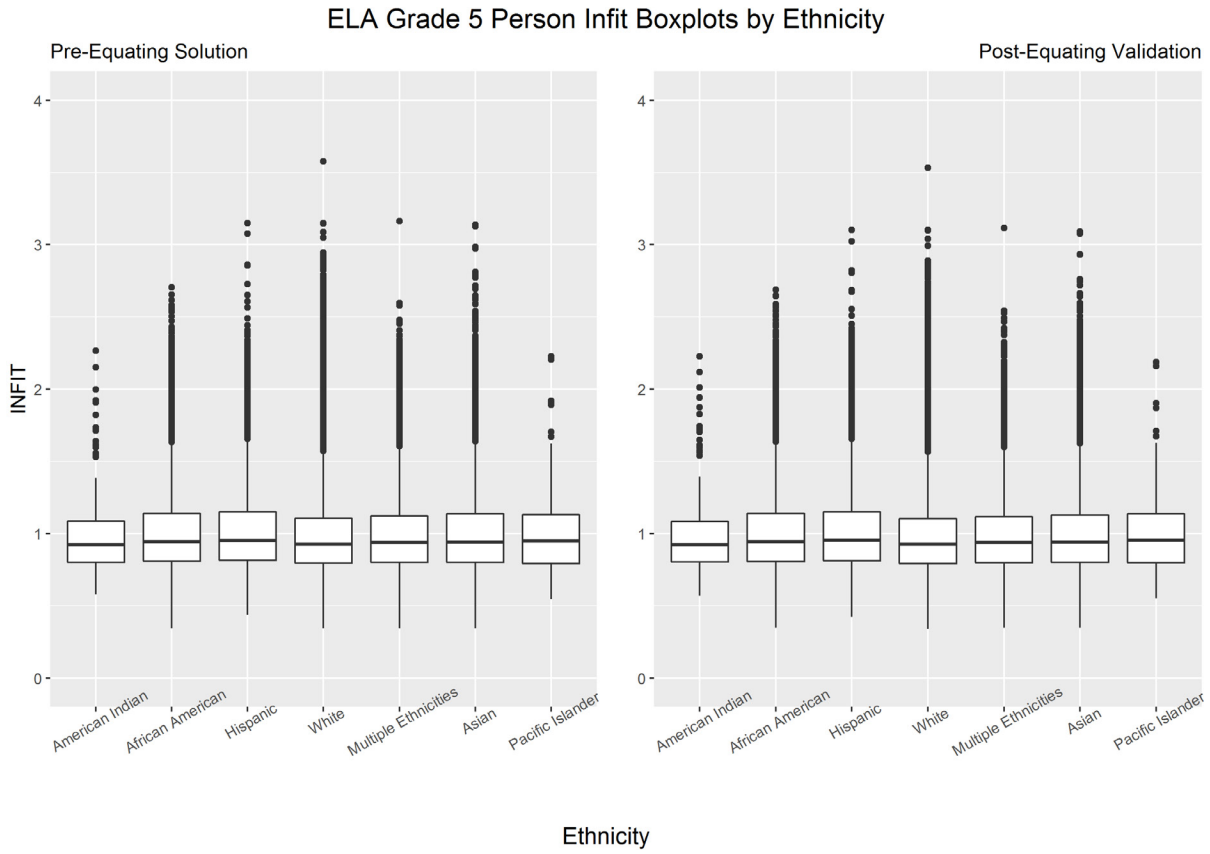

ELA Grade 4 Person Infit Boxplots by Ethnicity
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
American Indian
African American
Hispanic
White
Multiple Ethnicities
Asian
Pacific Islander
Ethnicity

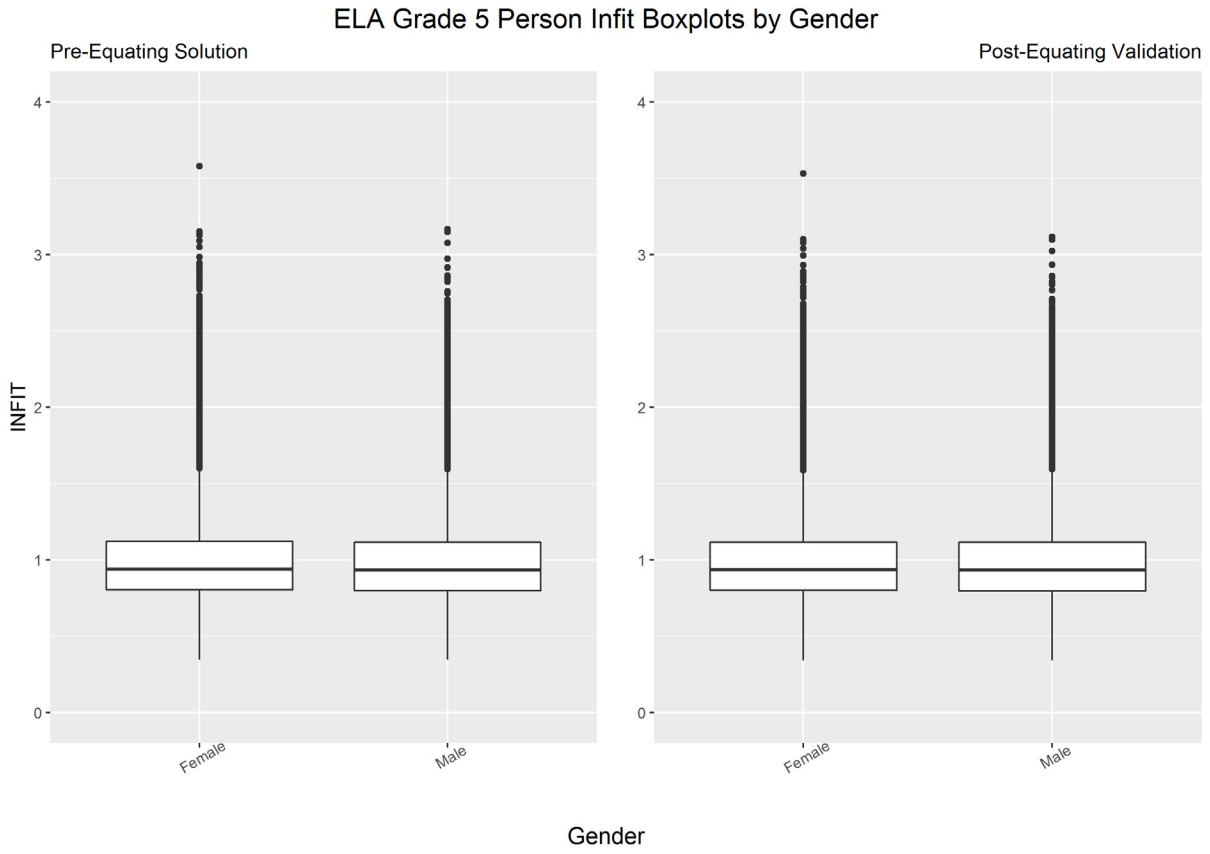

ELA Grade 4 Person Infit Boxplots by Gender
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
Female
Male
Gender

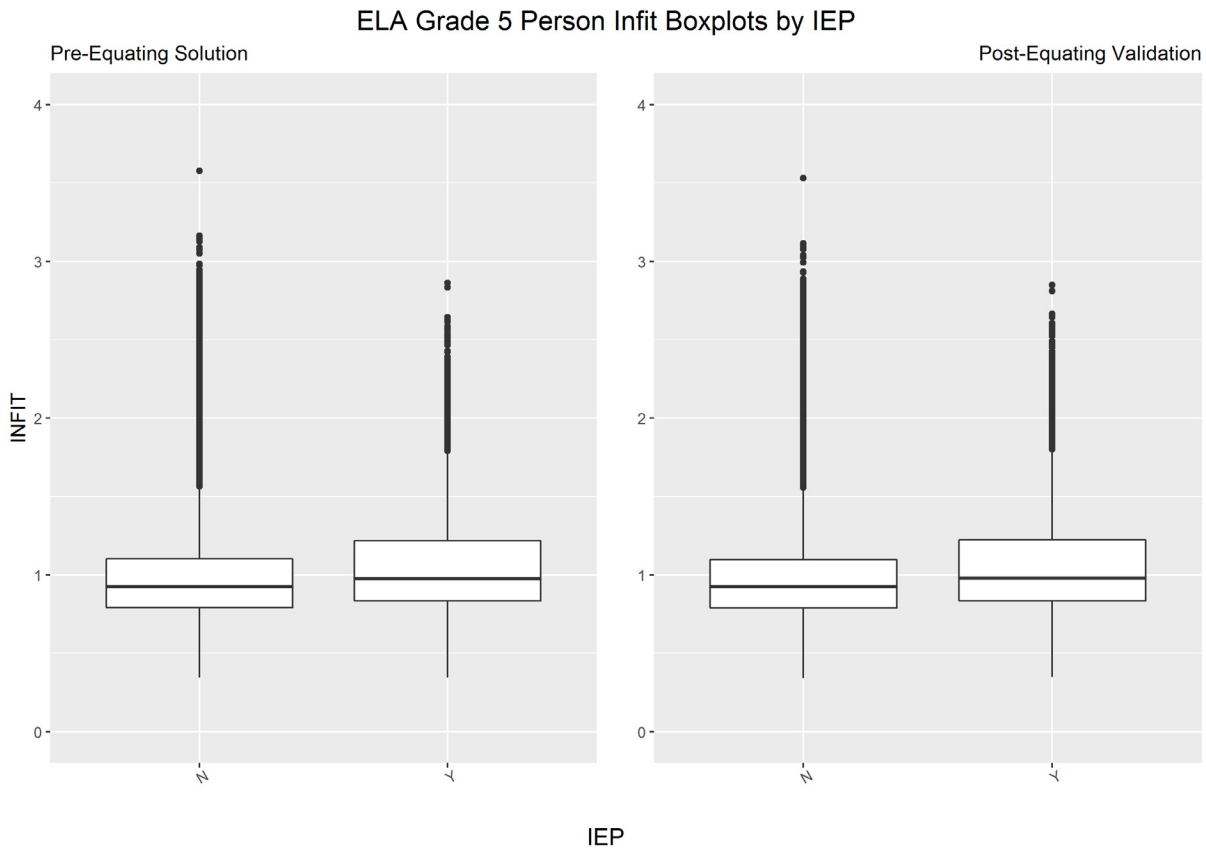

ELA Grade 4 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
IEP

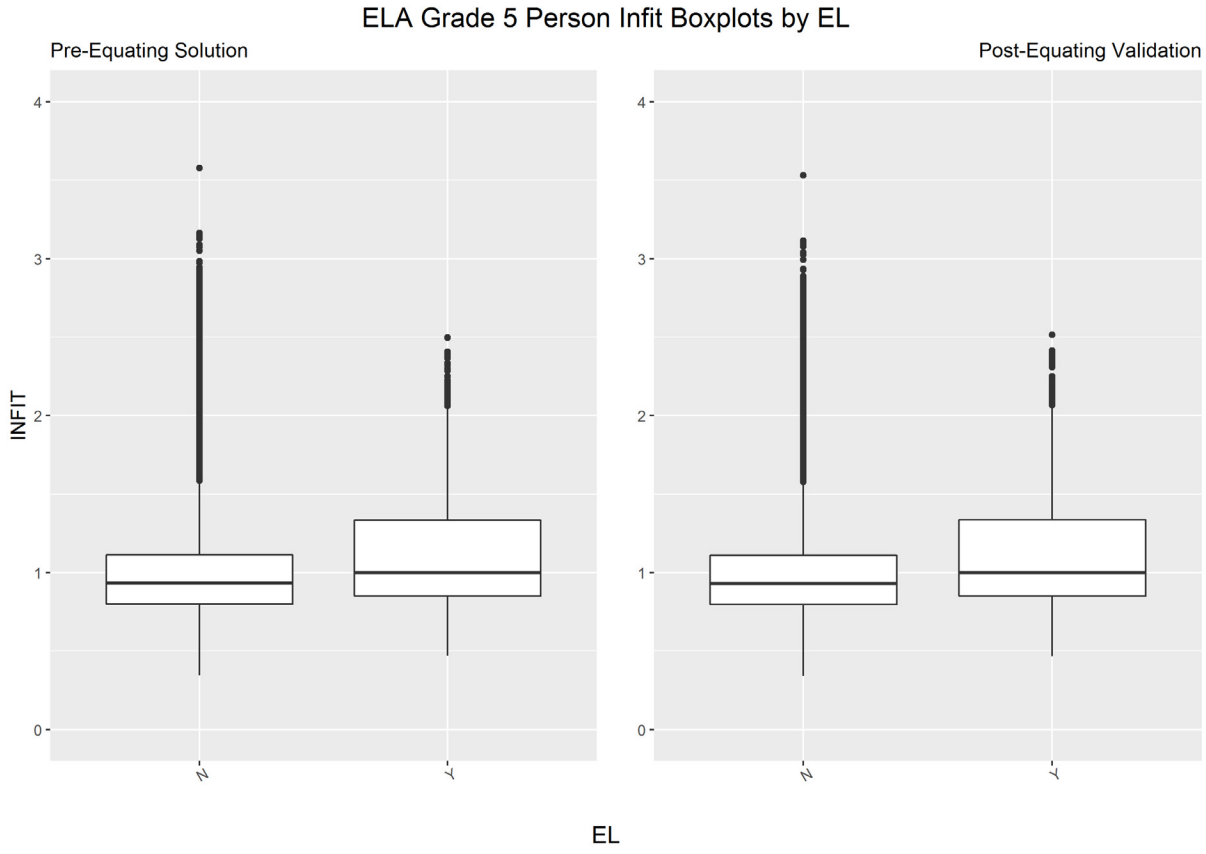

ELA Grade 4 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
EL

ELA Grade 5

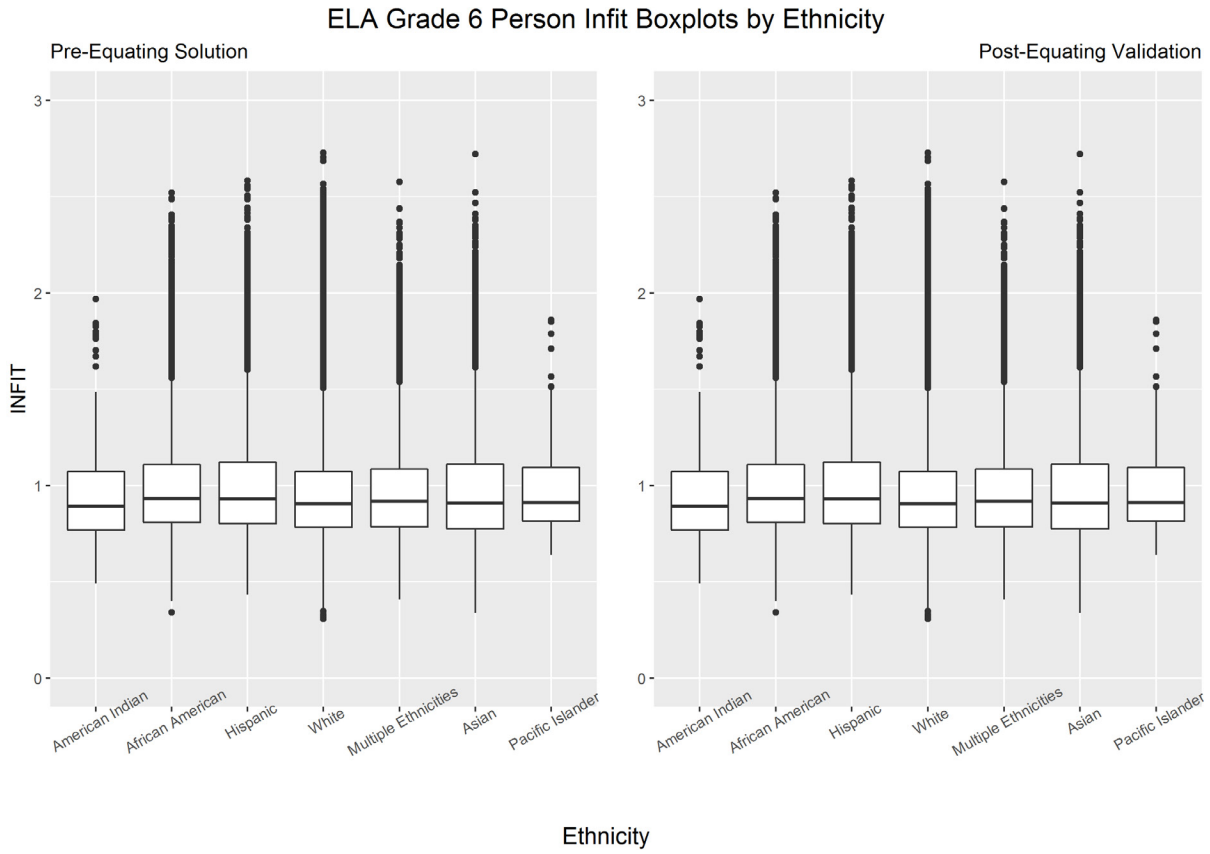

ELA Grade 5 Person Infit Boxplots by Ethnicity
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
American Indian
African American
Hispanic
White
Multiple Ethnicities
Asian
Pacific Islander
Ethnicity

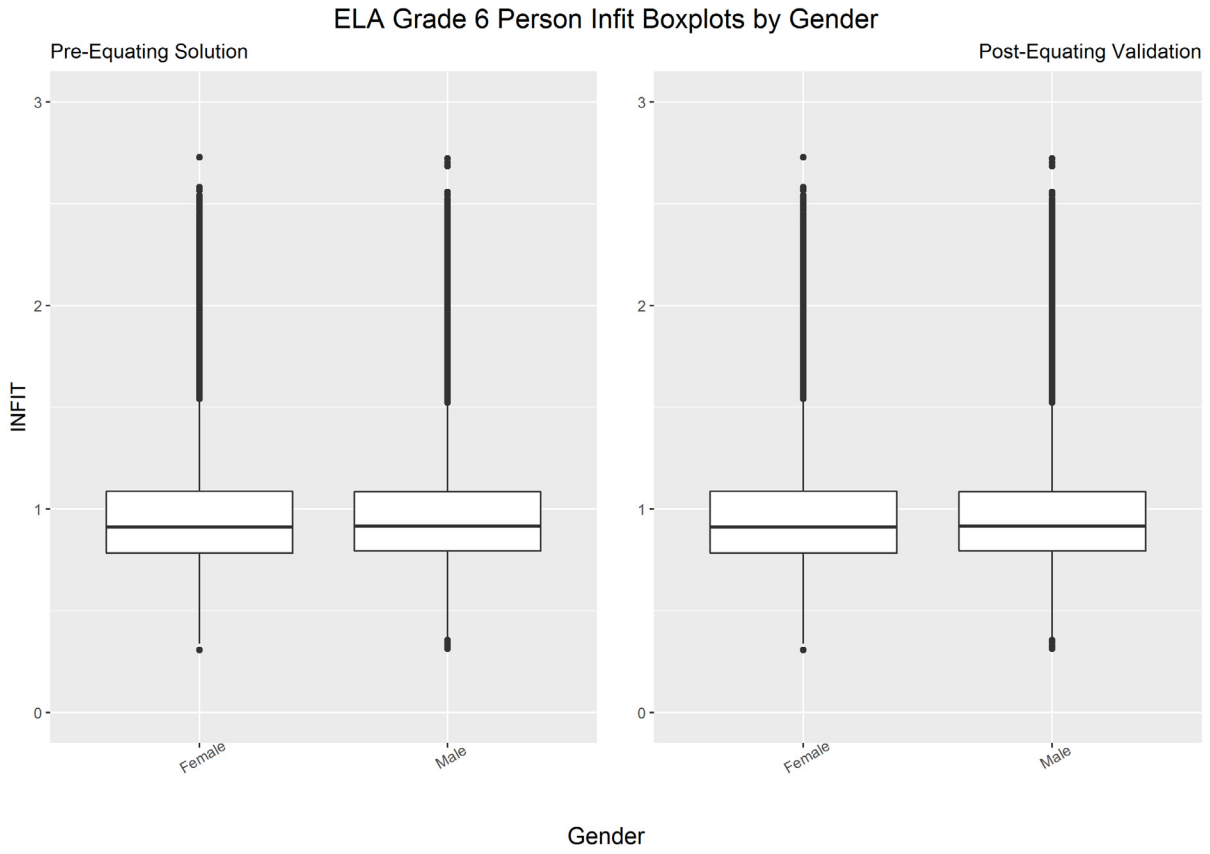

ELA Grade 5 Person Infit Boxplots by Gender
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
Female
Male
Gender

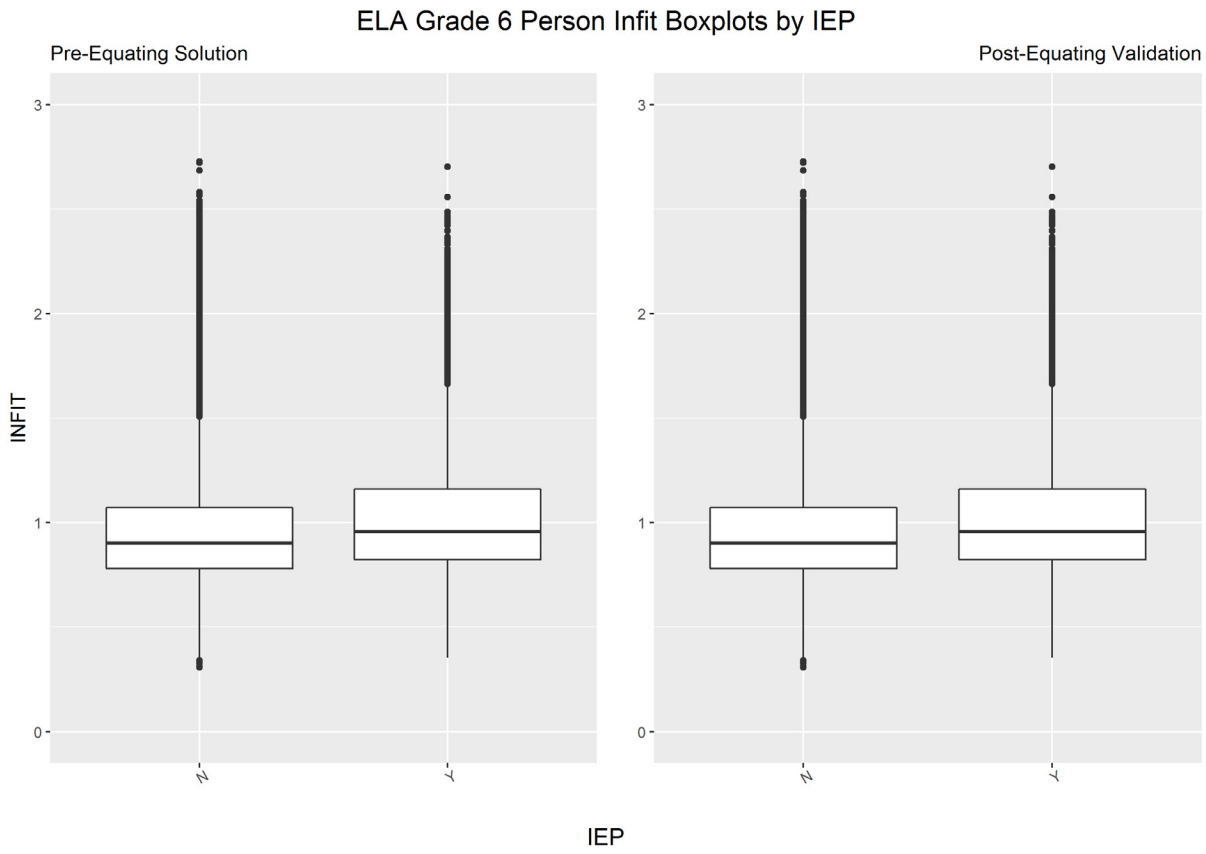

ELA Grade 5 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
IEP

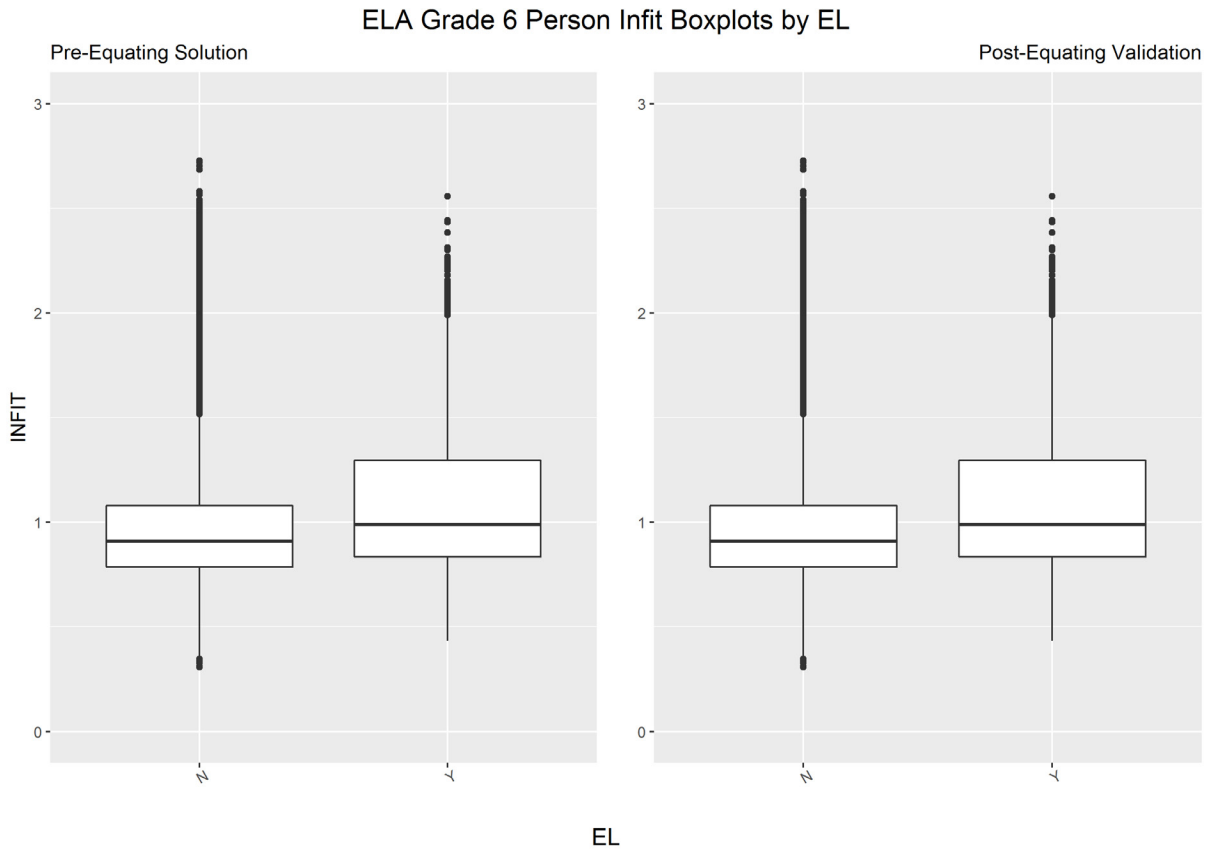

ELA Grade 5 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
EL

ELA Grade 6

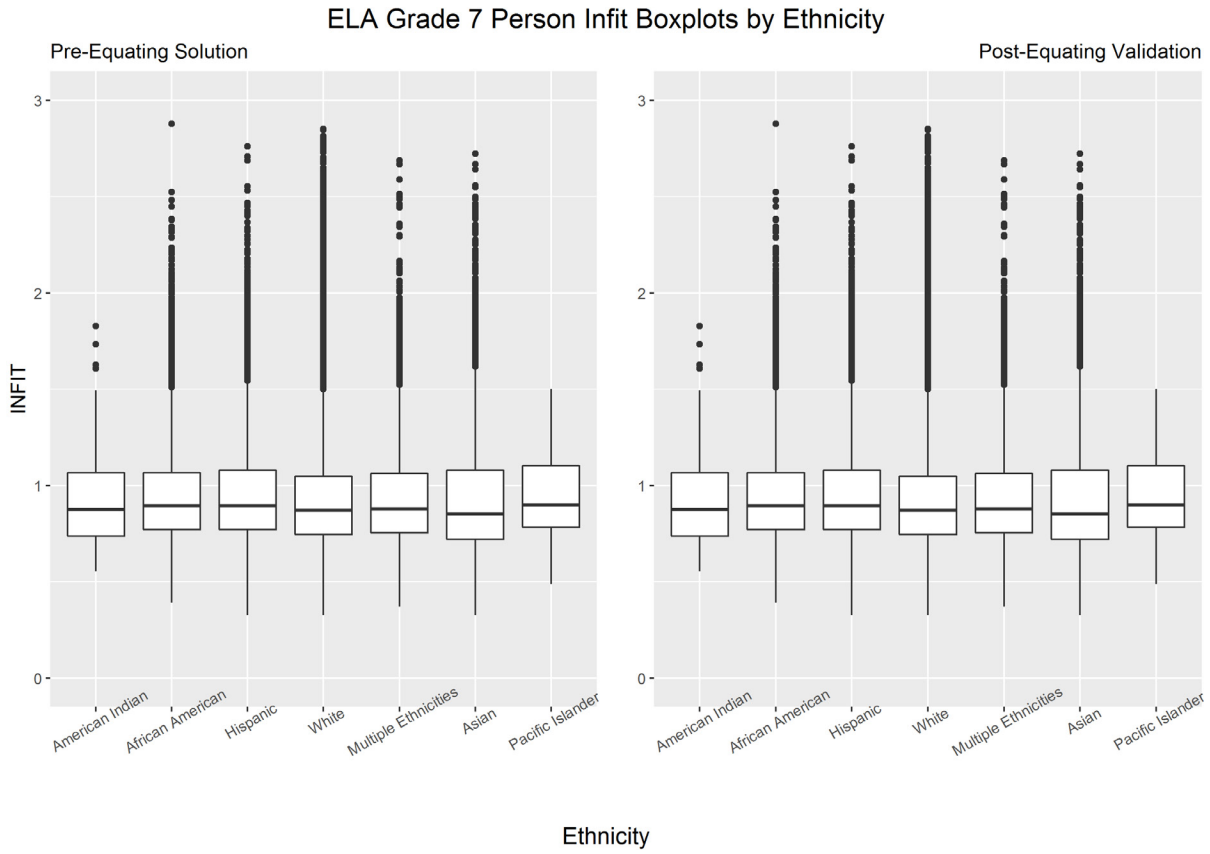

ELA Grade 6 Person Infit Boxplots by Ethnicity
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
American Indian
African American
Hispanic
White
Multiple Ethnicities
Asian
Pacific Islander
Ethnicity

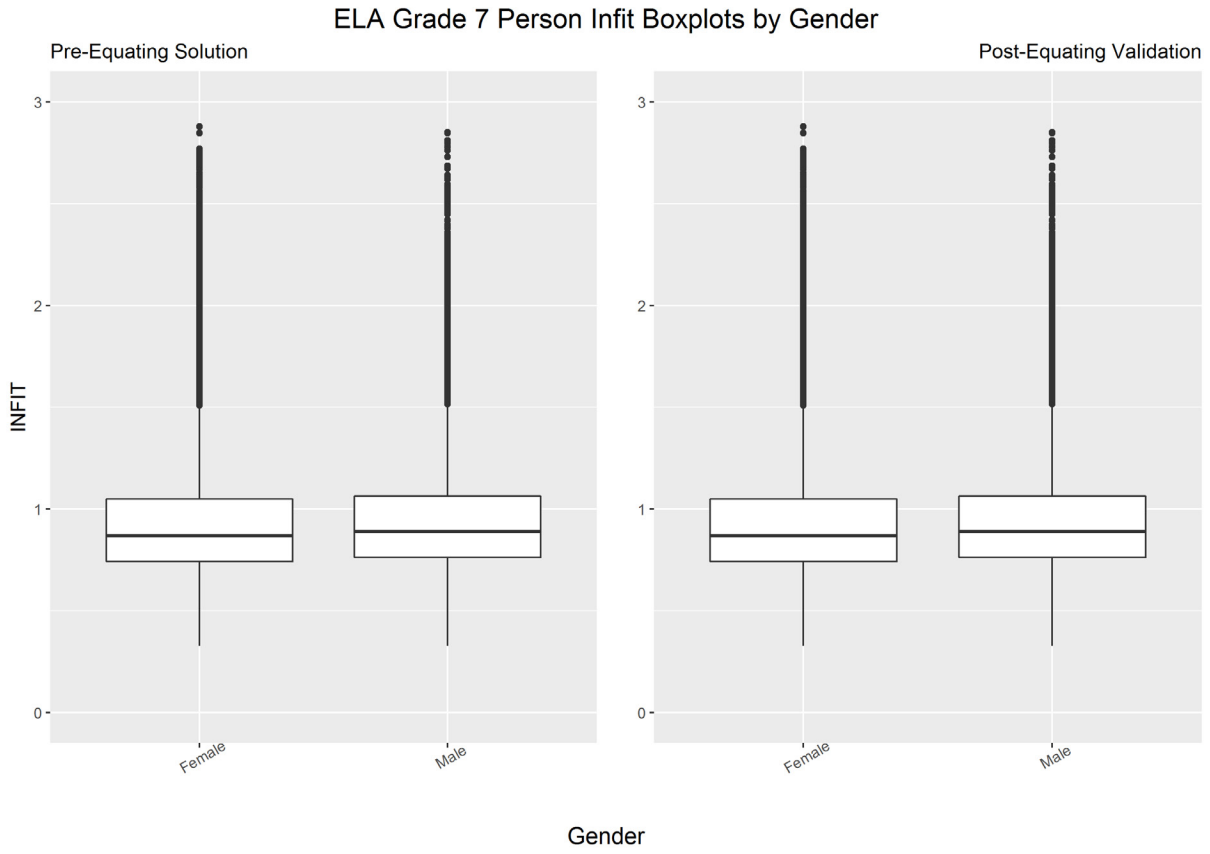

ELA Grade 6 Person Infit Boxplots by Gender
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
Female
Male
Gender

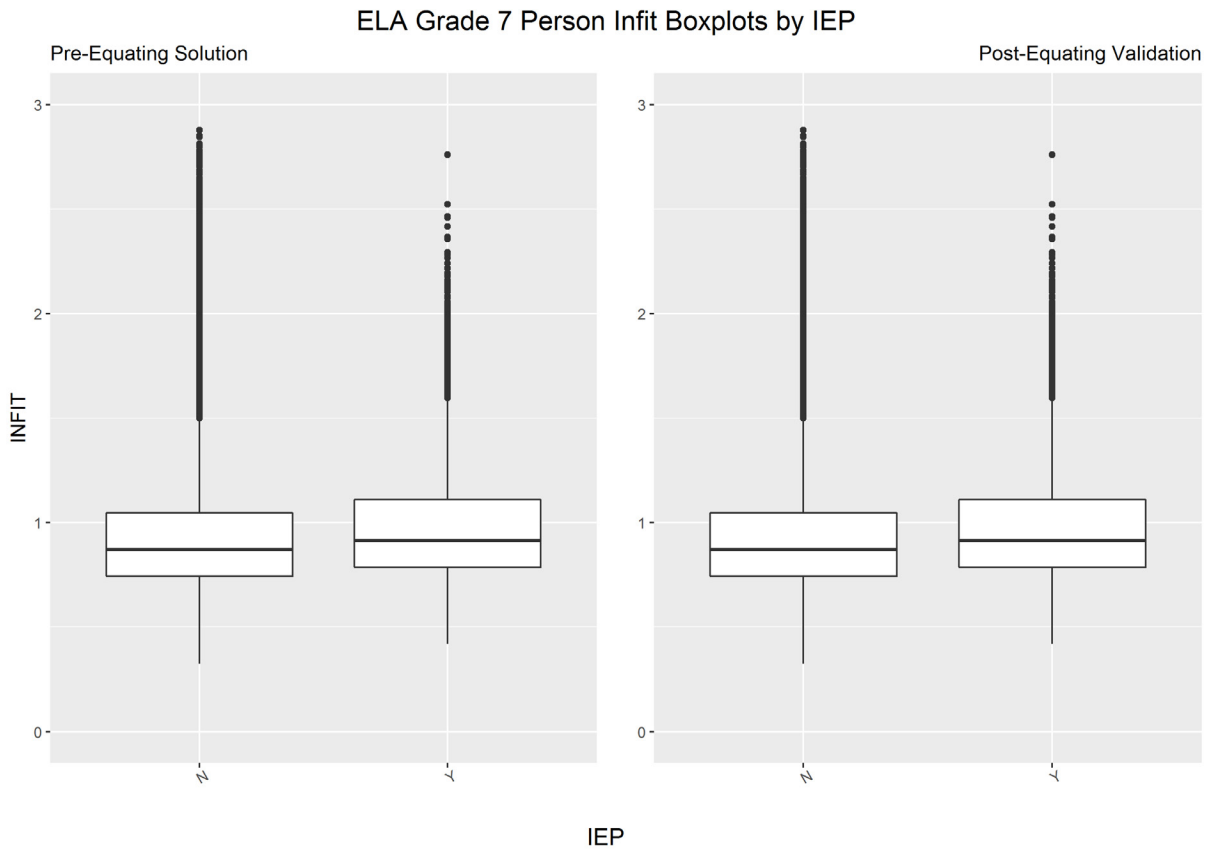

ELA Grade 6 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
N
Y
IEP

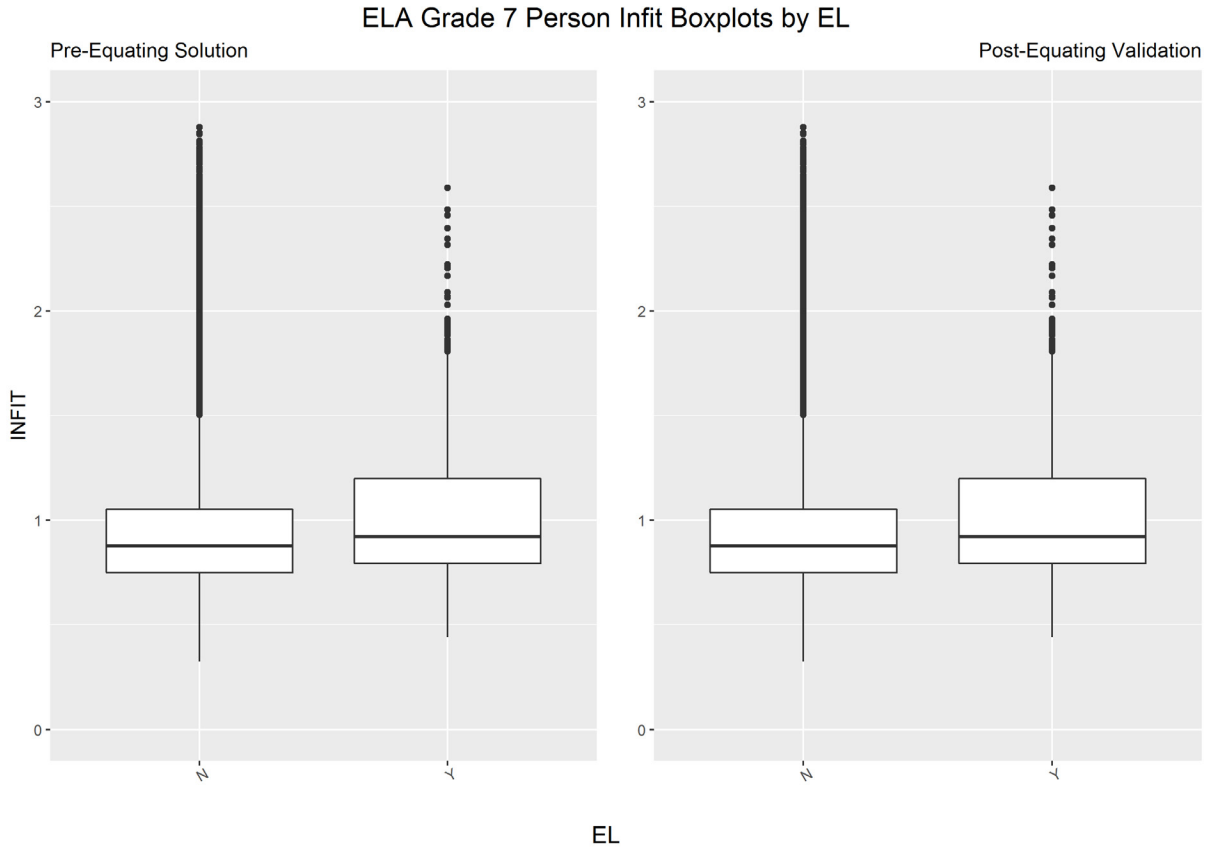

ELA Grade 6 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
N
Y
EL

ELA Grade 7

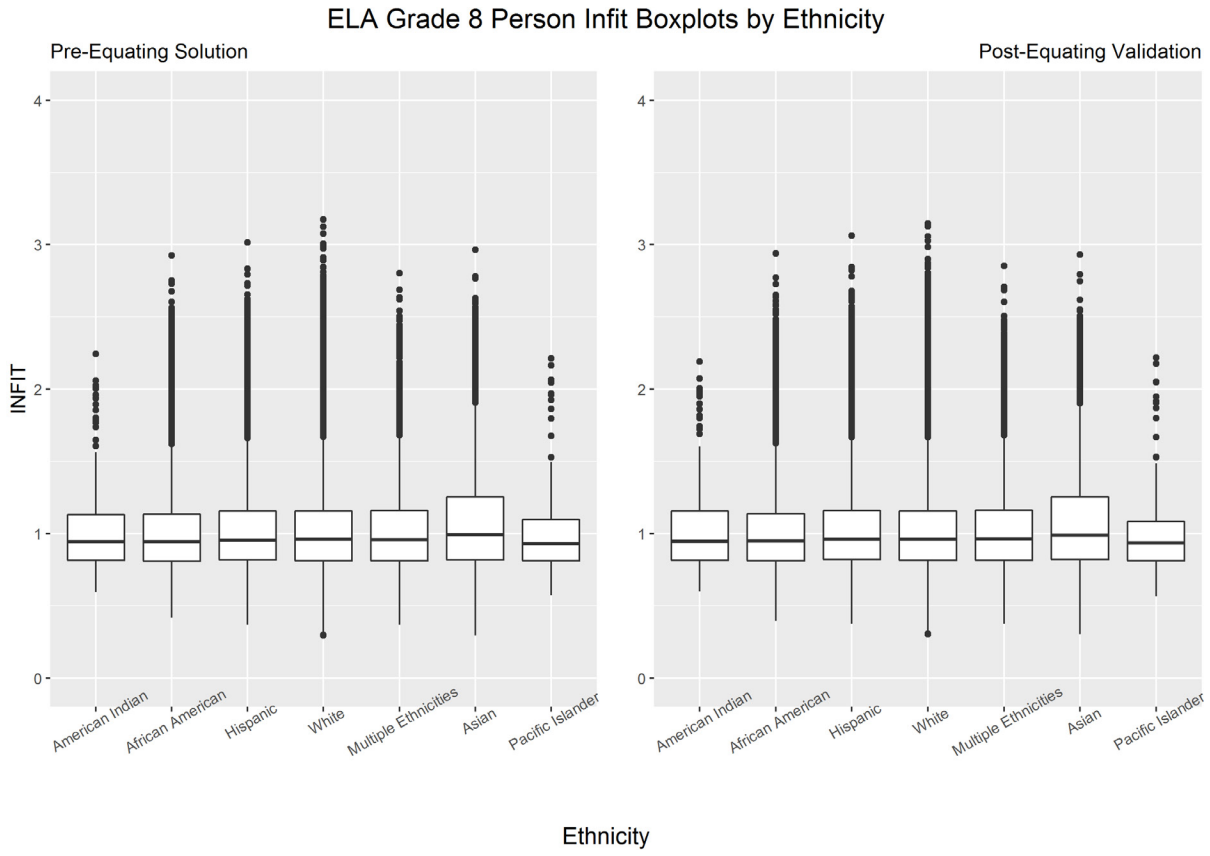

ELA Grade 7 Person Infit Boxplots by Ethnicity
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
American Indian
African American
Hispanic
White
Multiple Ethnicities
Asian
Pacific Islander
Ethnicity

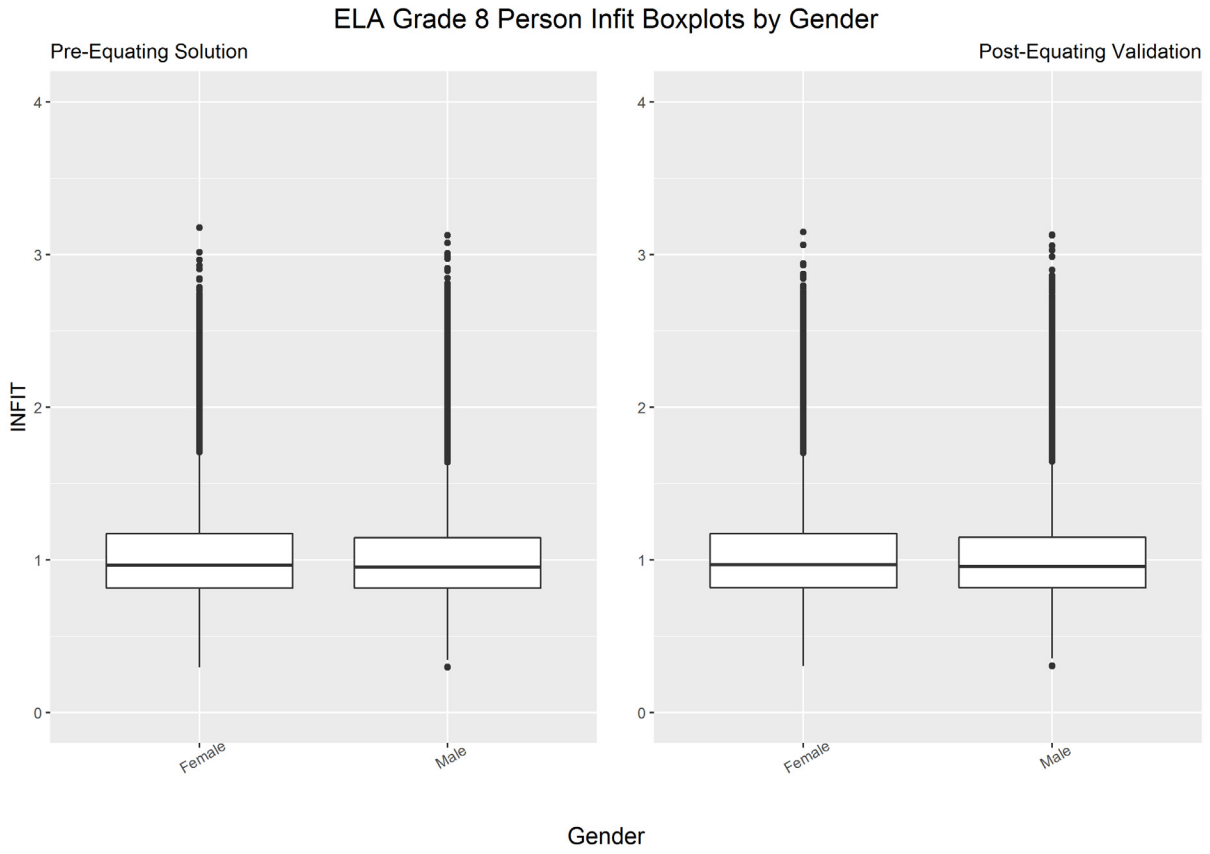

ELA Grade 7 Person Infit Boxplots by Gender
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
Female
Male
Gender

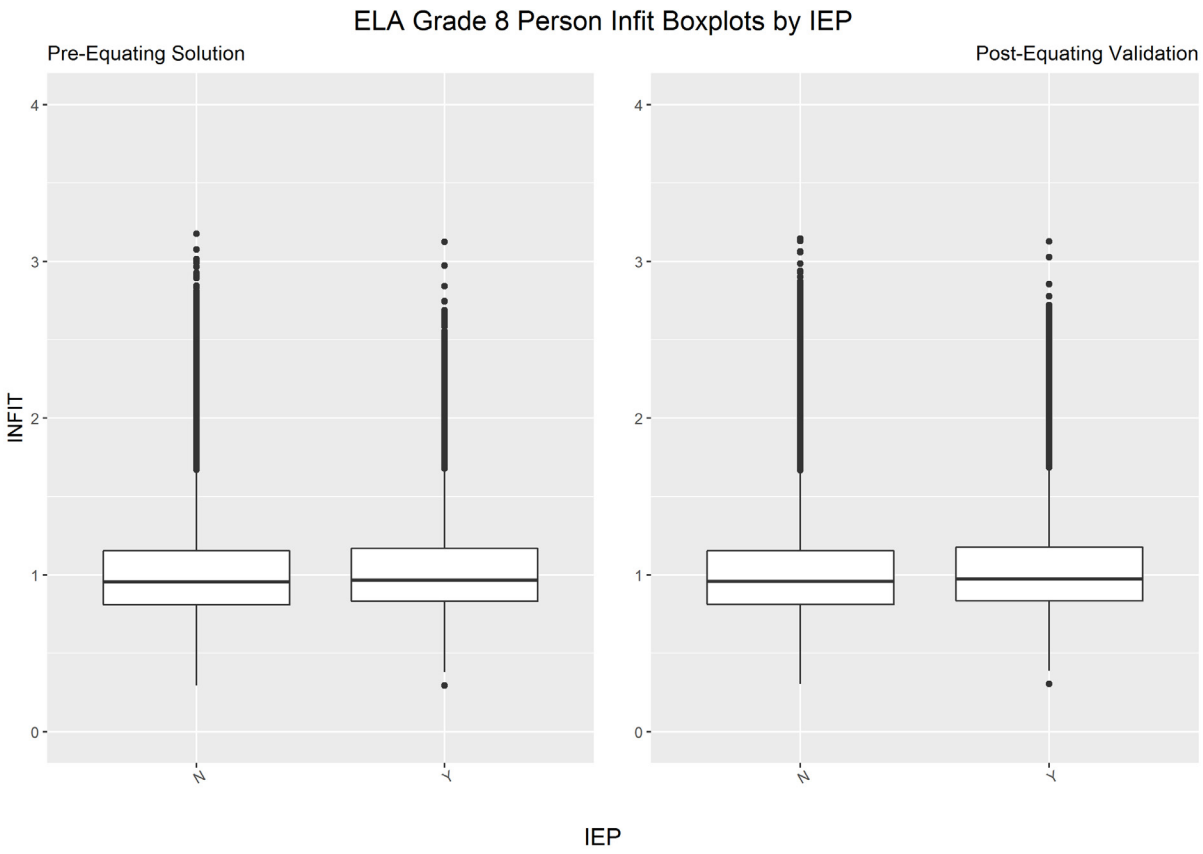

ELA Grade 7 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
N
Y
IEP

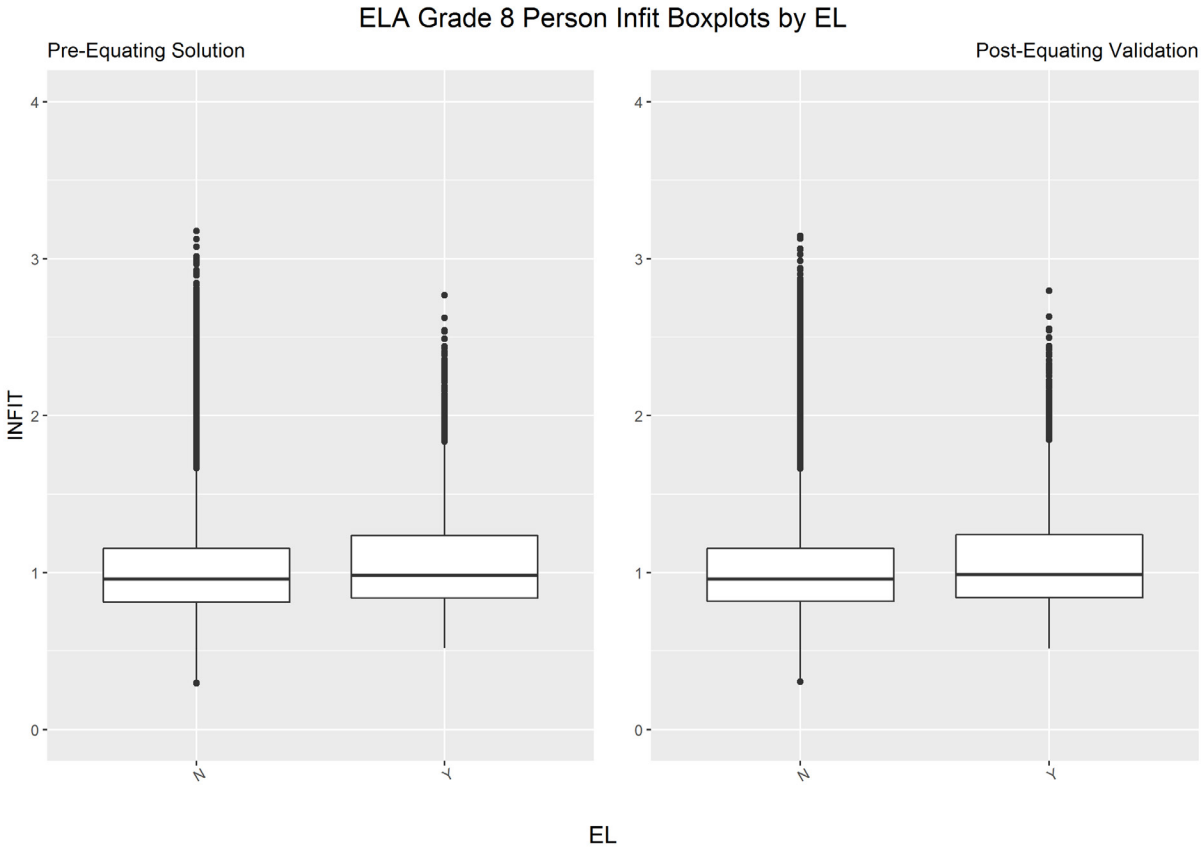

ELA Grade 7 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
N
Y
EL

ELA Grade 8

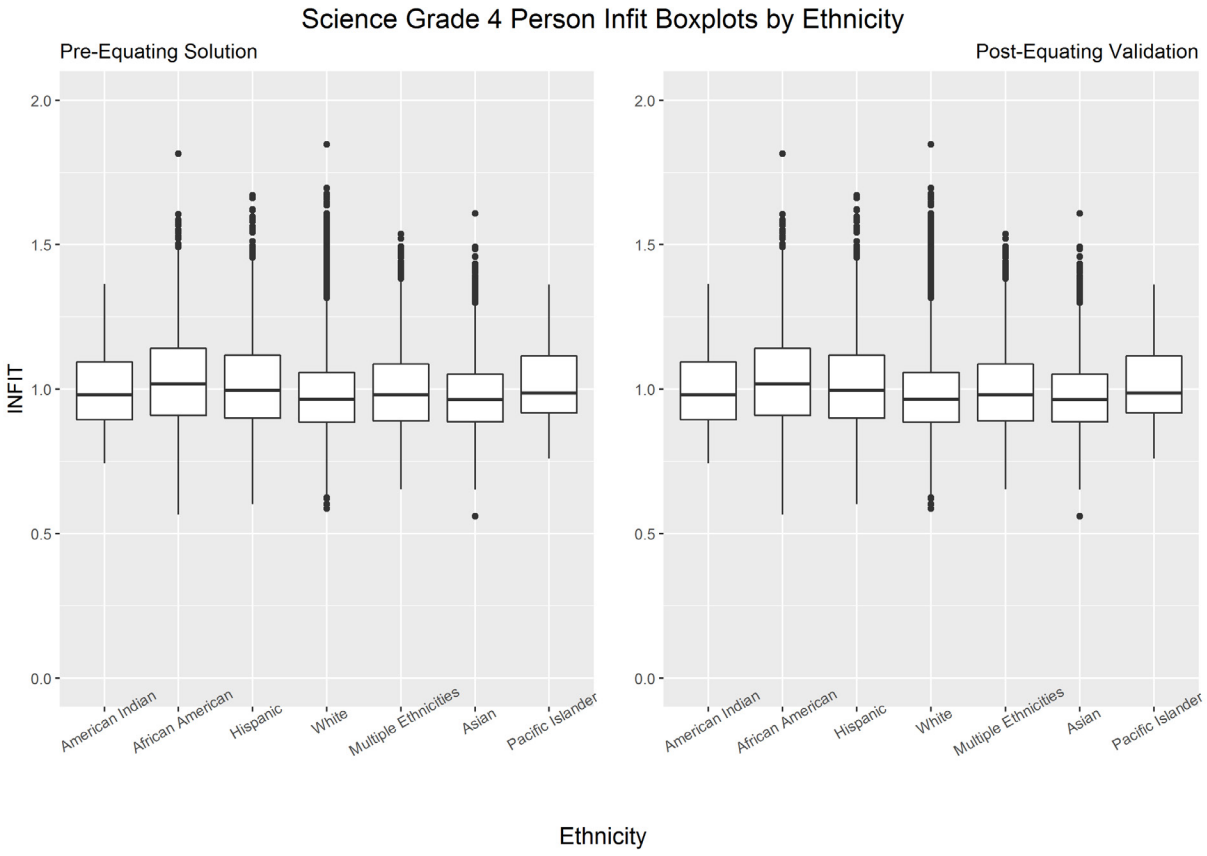

ELA Grade 8 Person Infit Boxplots by Ethnicity
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
American Indian
African American
Hispanic
White
Multiple Ethnicities
Asian
Pacific Islander
Ethnicity

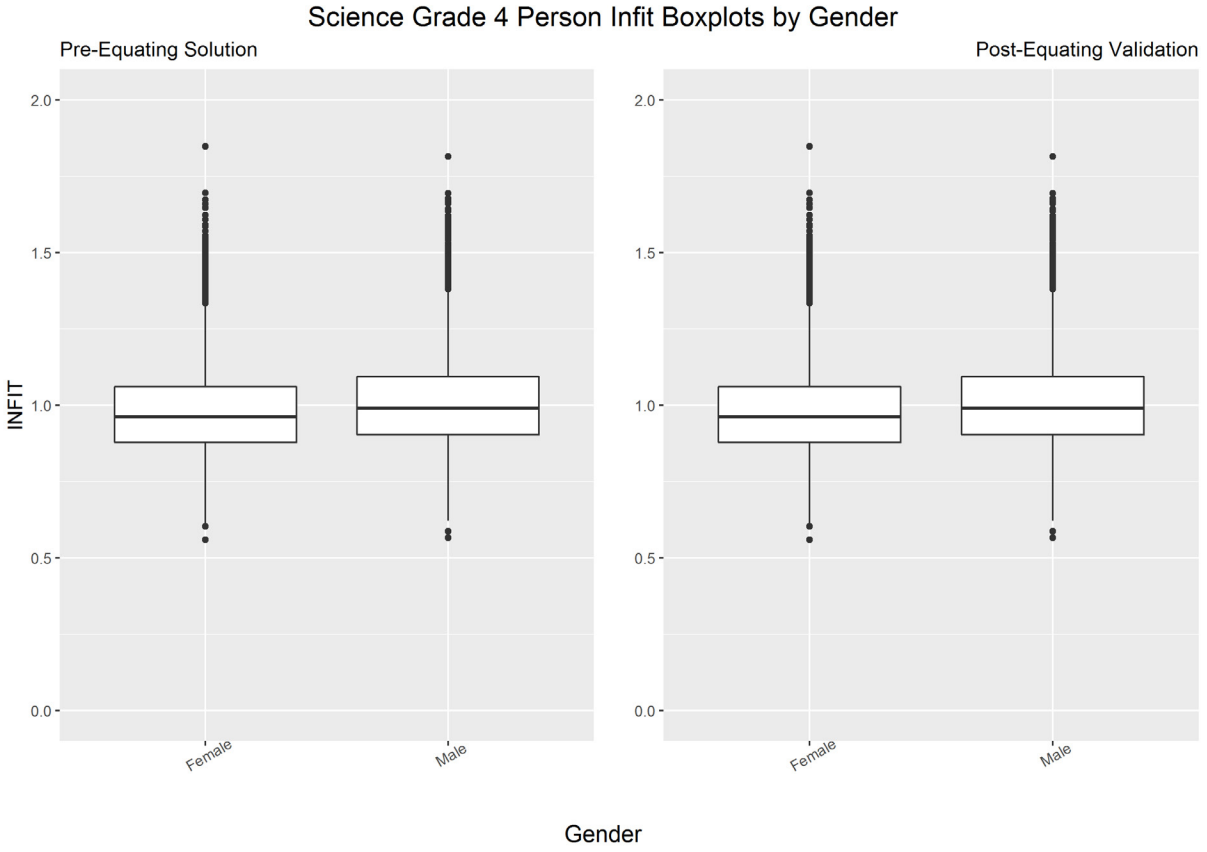

ELA Grade 8 Person Infit Boxplots by Gender
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
Female
Male
Gender

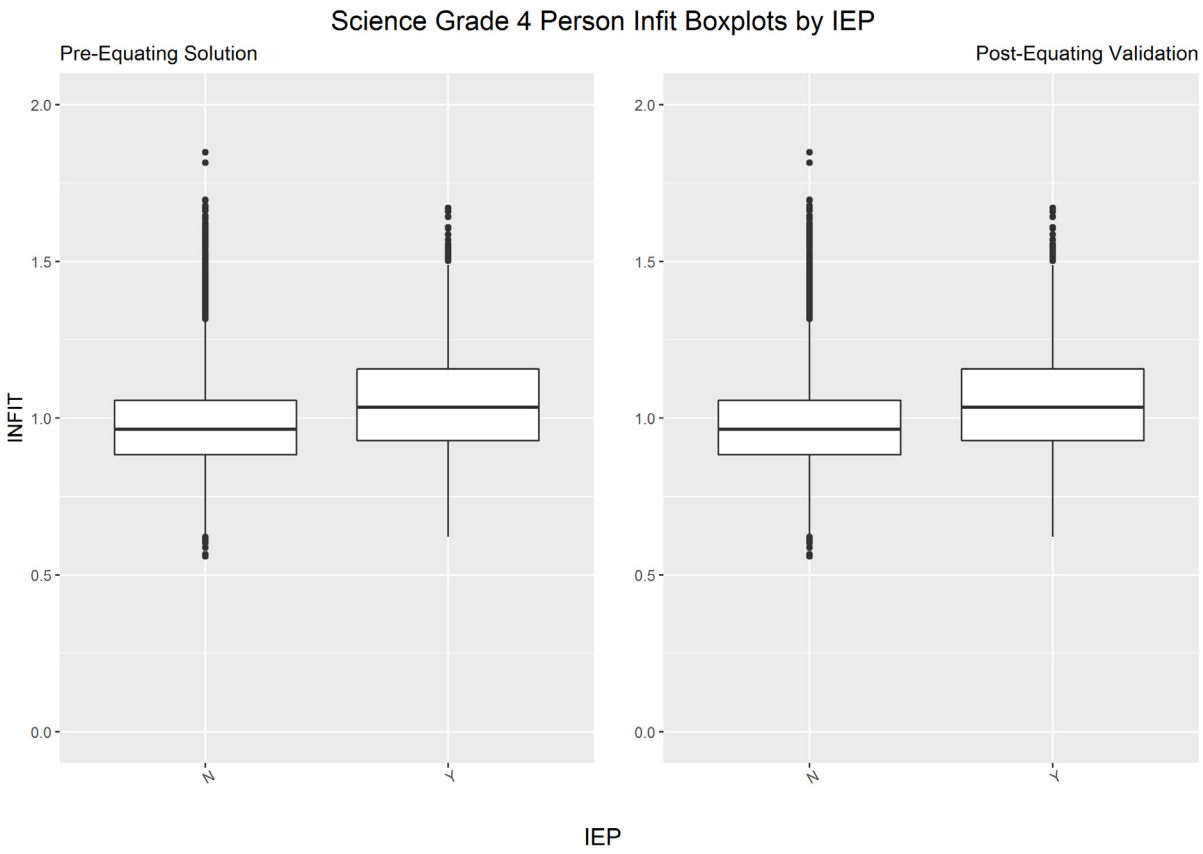

ELA Grade 8 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
IEP

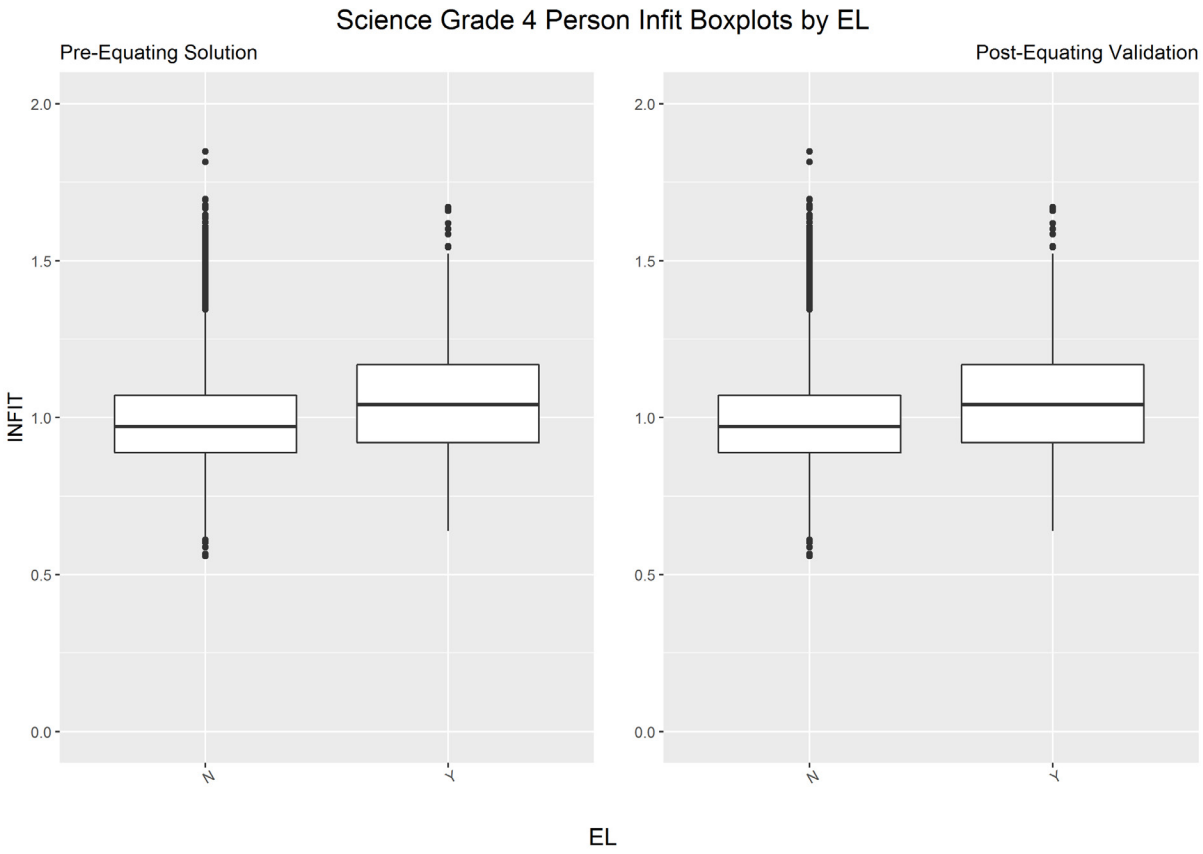

ELA Grade 8 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
0
1
2
3
4
N
Y
EL

Science Grade 4

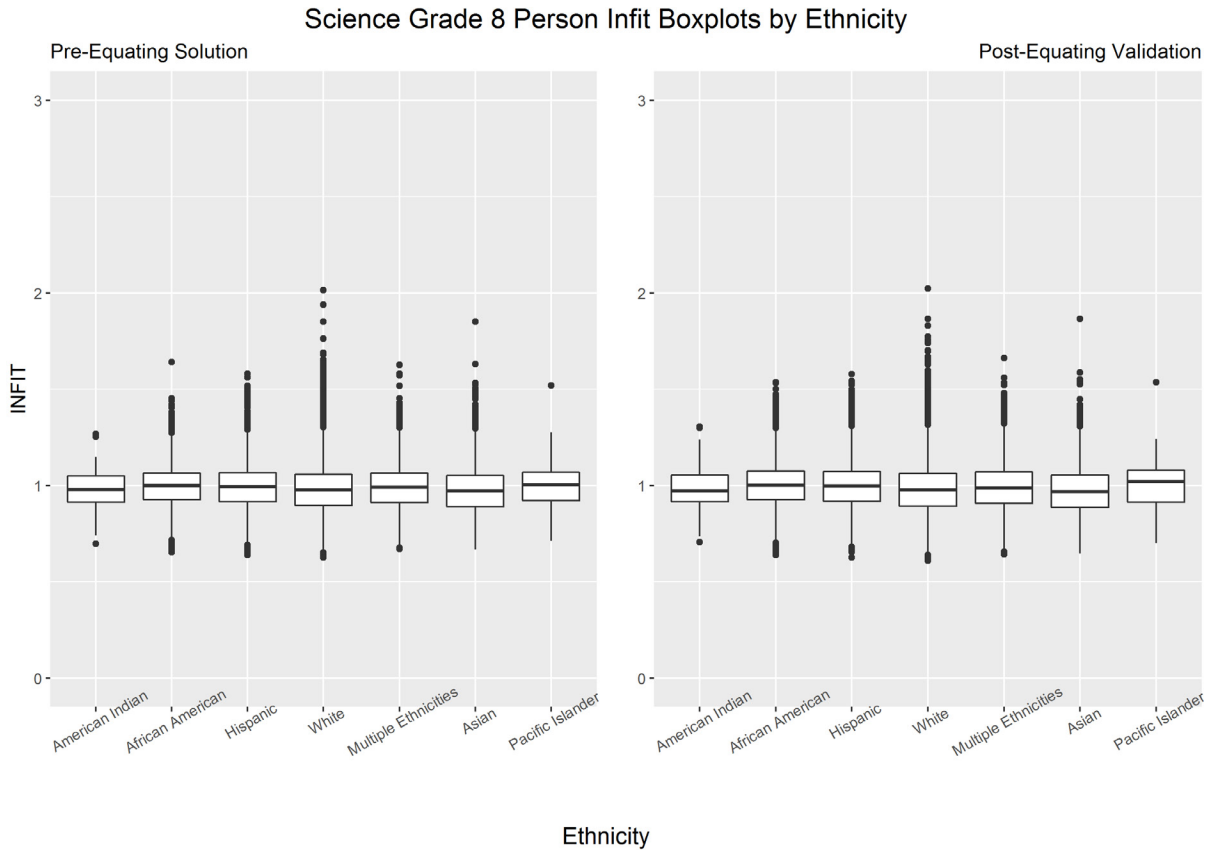


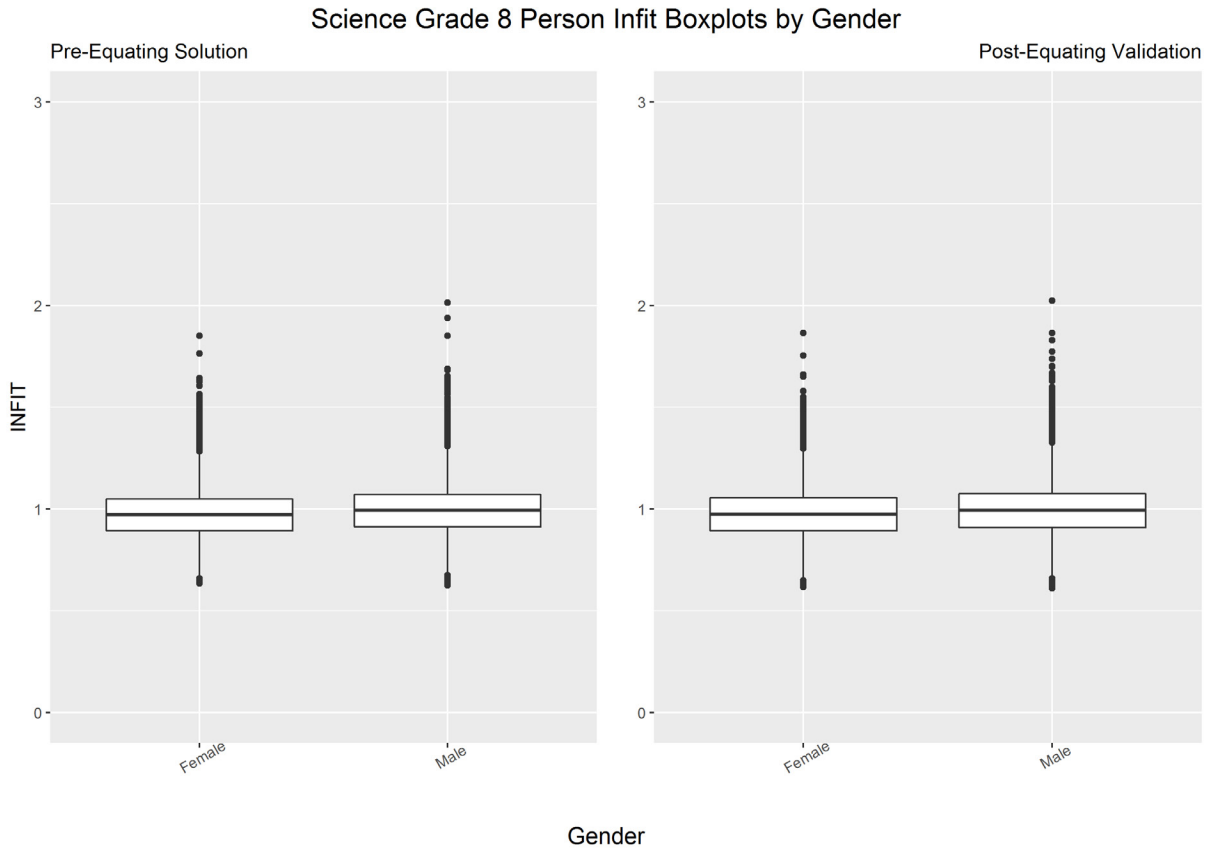


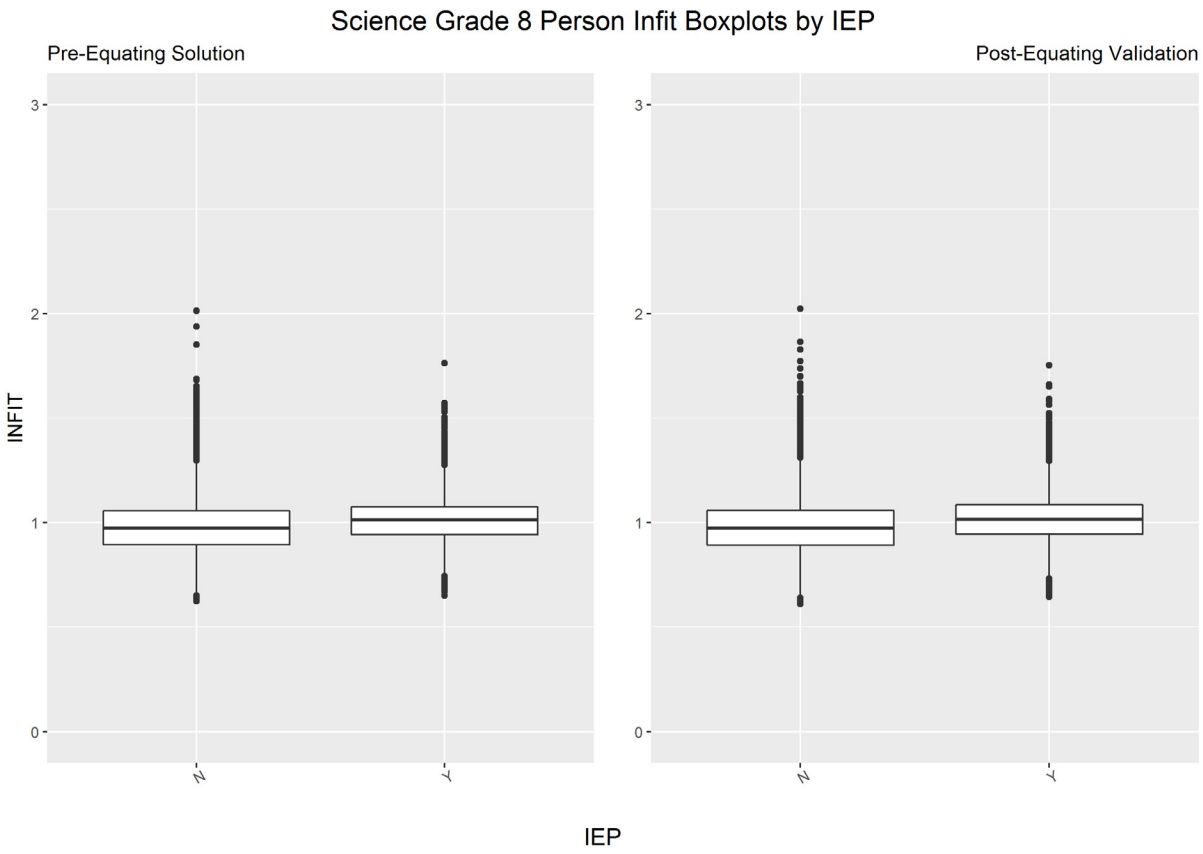

Science Grade 4 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
2.0
1.5
1.0
0.5
0.0
N
Y
IEP


Science Grade 4 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
2.0
1.5
1.0
0.5
0.0
N
Y
EL

Science Grade 8






Science Grade 8 Person Infit Boxplots by IEP
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
N
Y
IEP

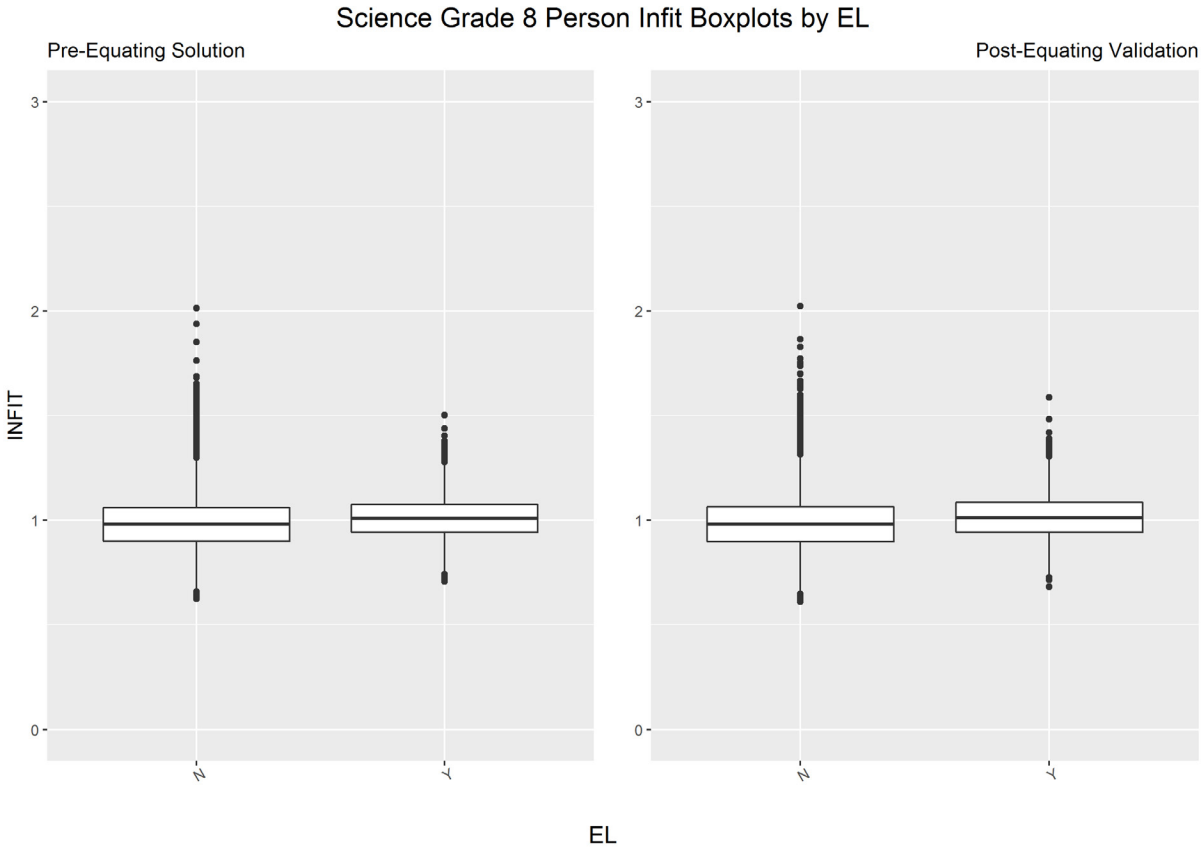
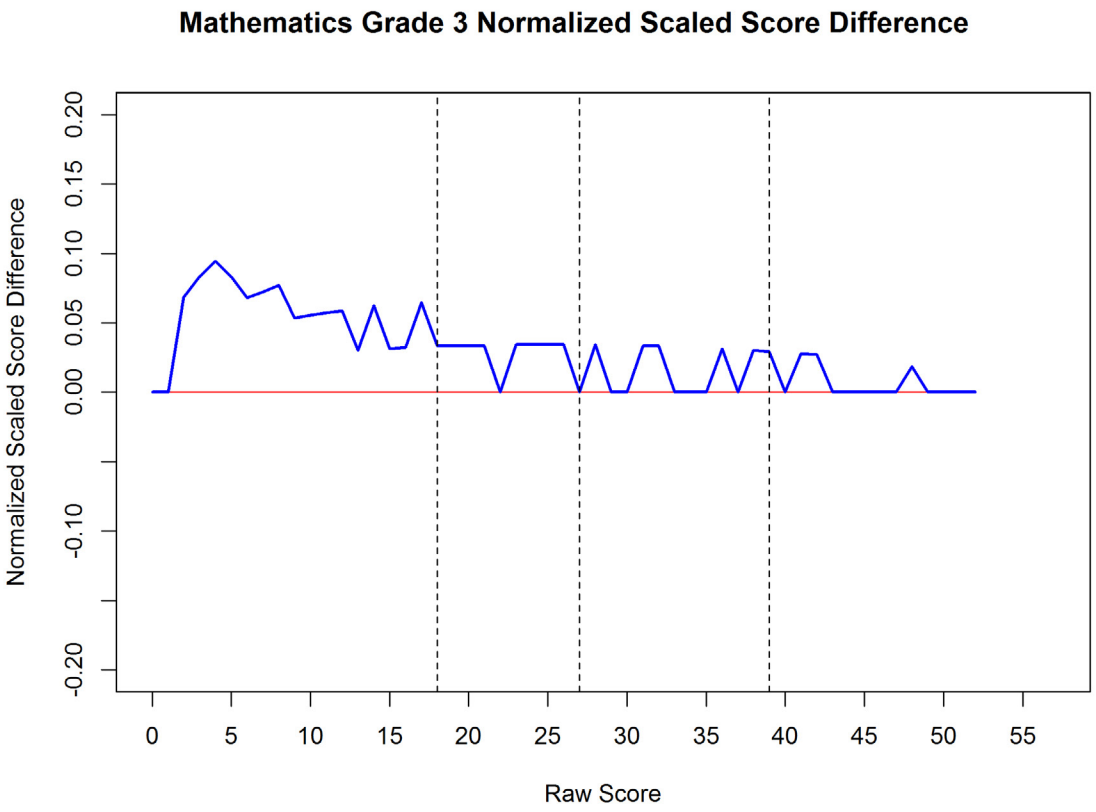
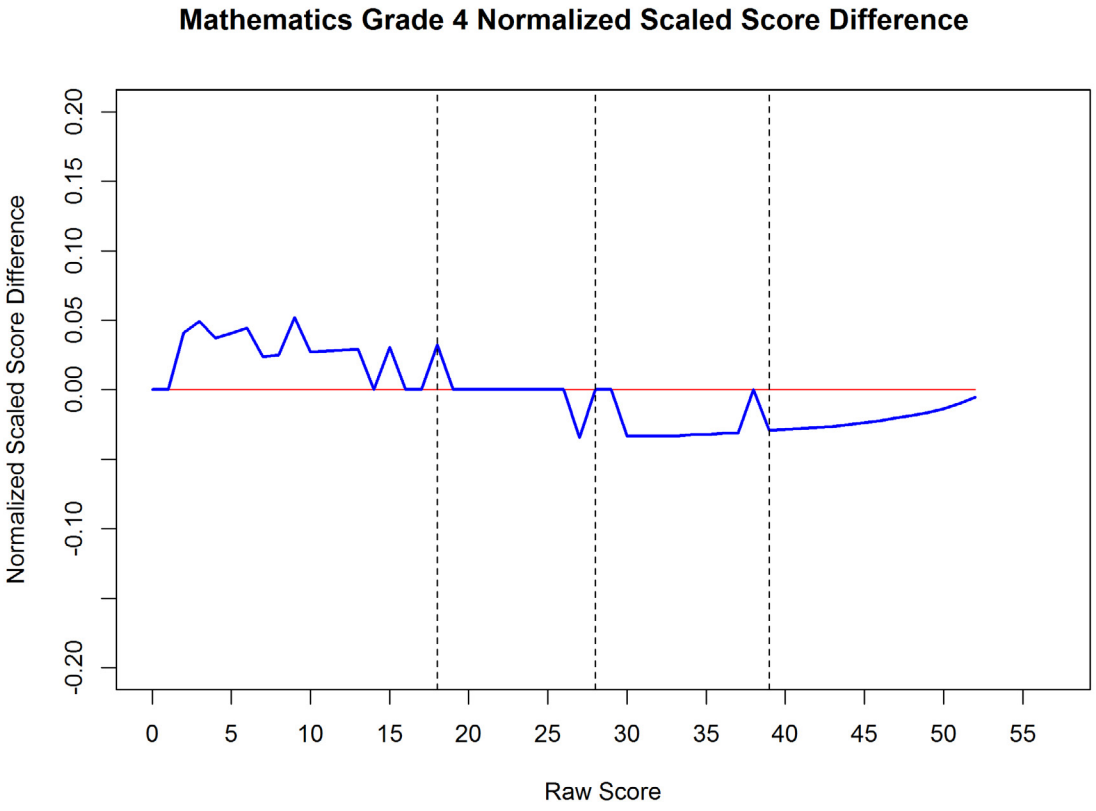
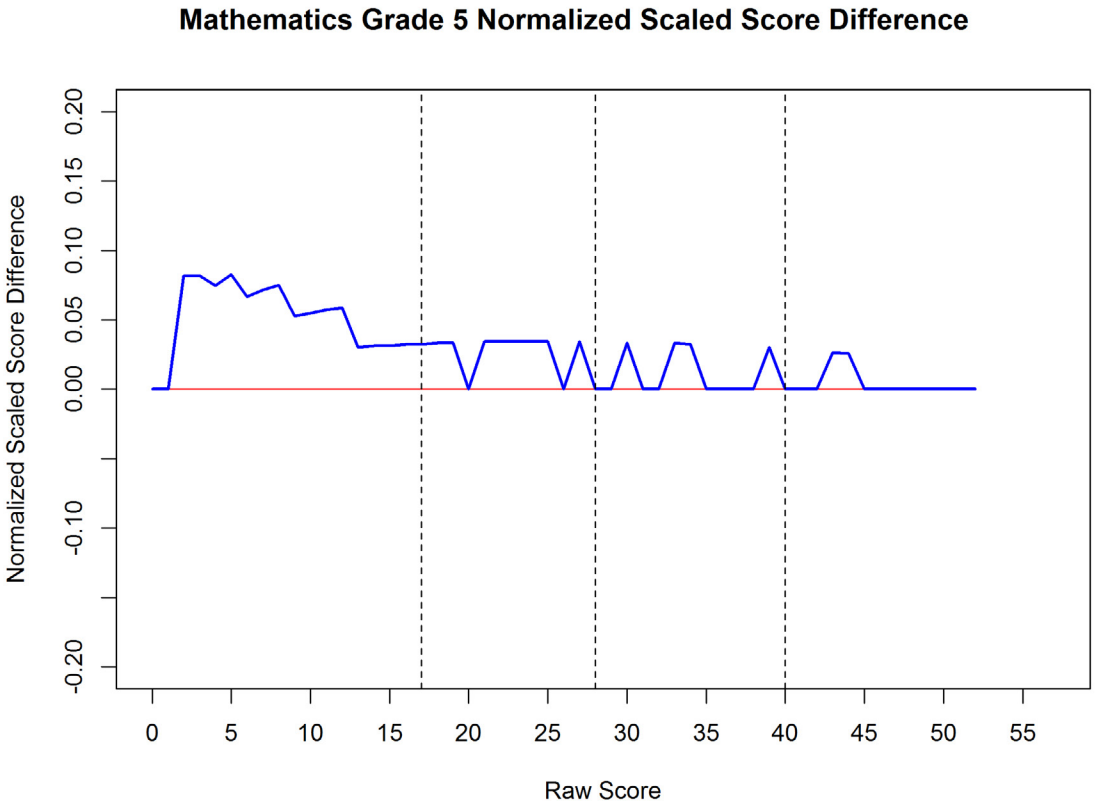

Science Grade 8 Person Infit Boxplots by EL
Pre-Equating Solution
Post-Equating Validation
INFIT
3
2
1
0
N
Y
EL

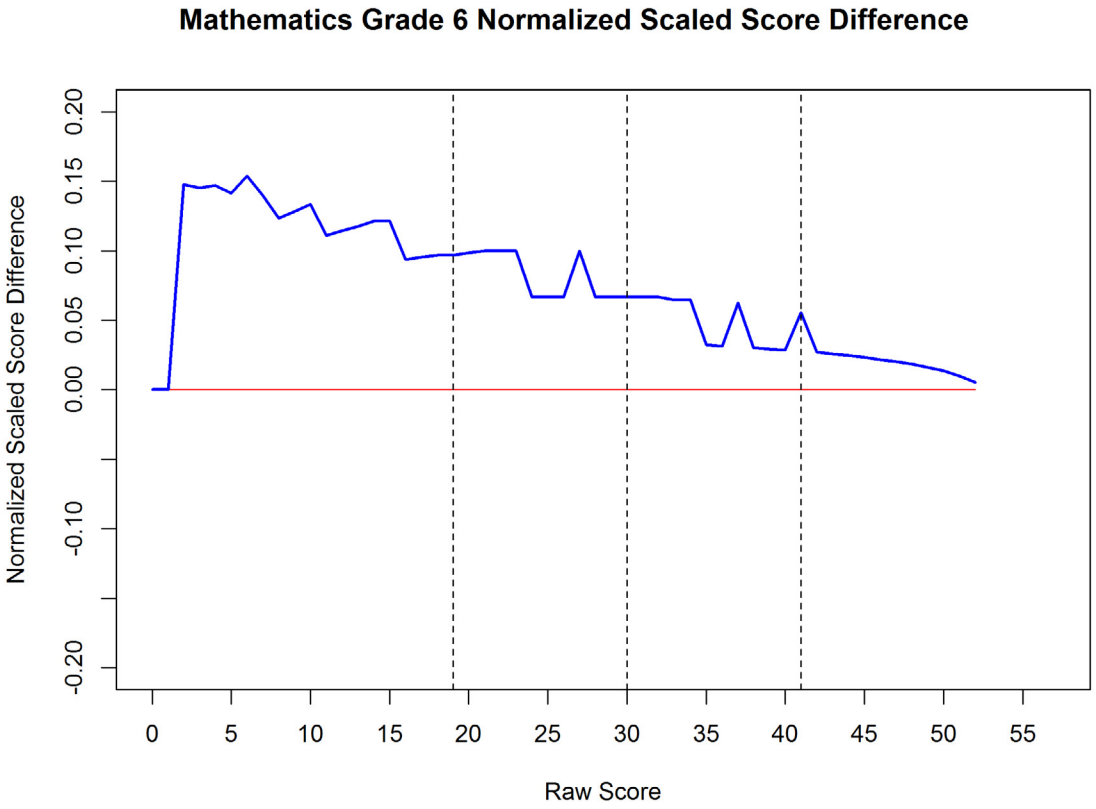
Figure T–2 displays the normalized scale score distributions by subject and grade across raw score points. The blue line represents the normalized scaled score difference between pre- and post-equated solutions at each raw score point. The red line represents no change between the solutions and the black dotted vertical lines represent the original raw cut-scores for each performance level classification (Basic, Proficient, and Advanced). If no red line is shown, then there were no differences between pre- and post-equated solutions.

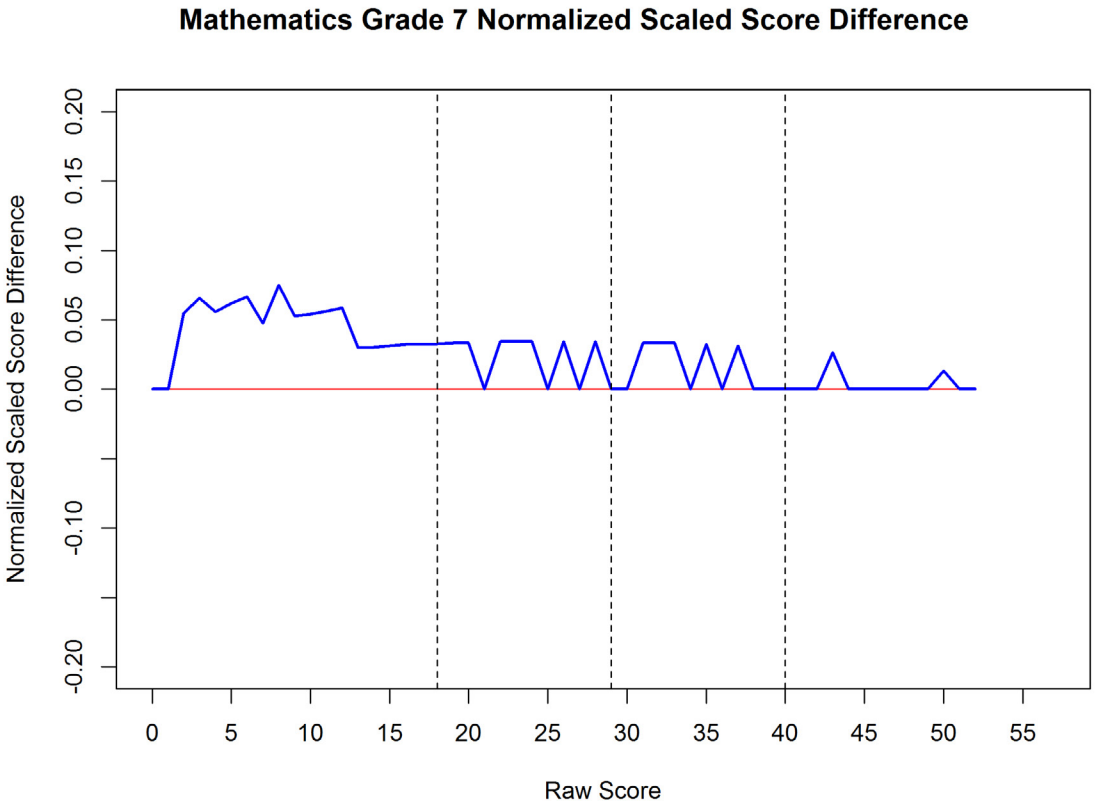
Figure T–2. Normalized Scale Score Distributions by Subject and Grade

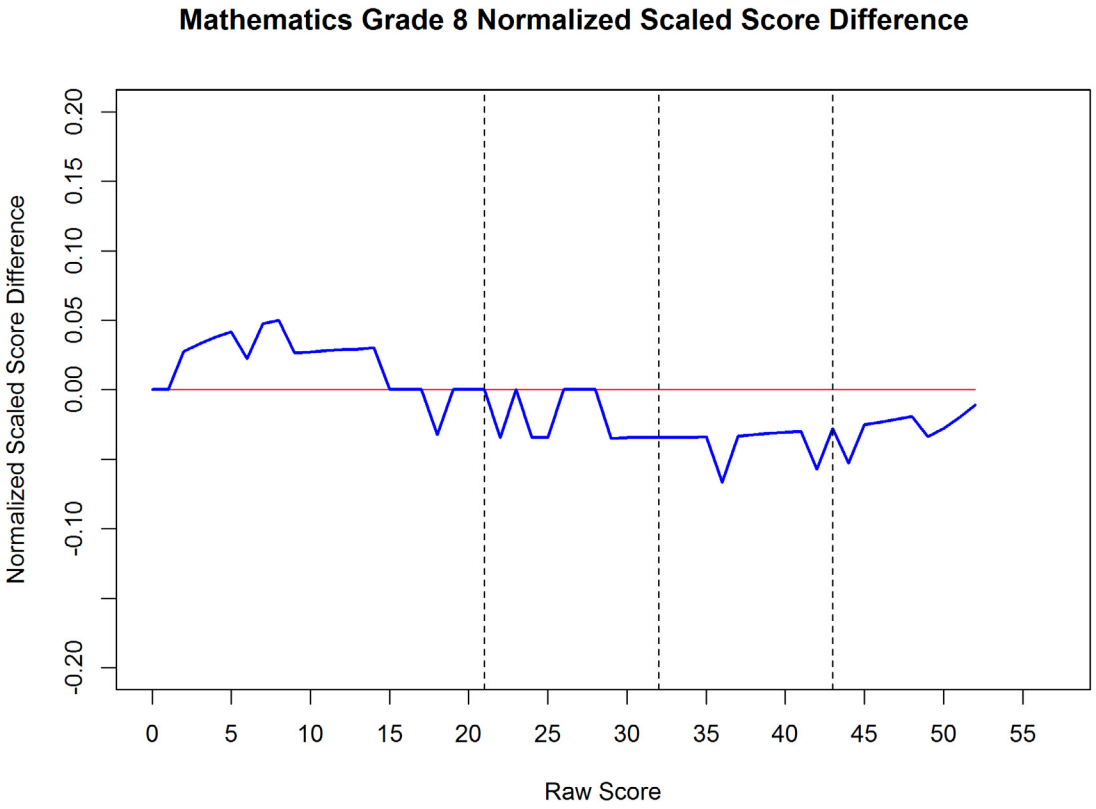


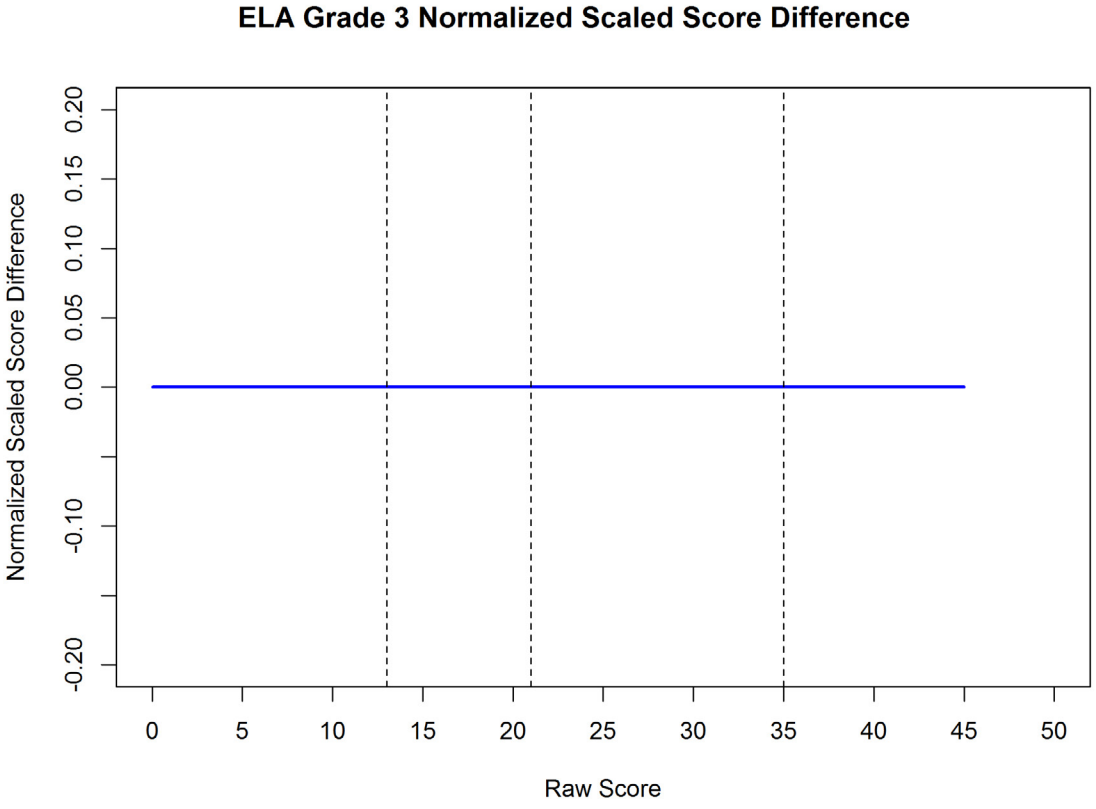

Mathematics Grade 4 Normalized Scaled Score Difference
Normalized Scaled Score Difference
0.20
0.15
0.10
0.05
0.00
-0.10
-0.20
0
5
10
15
20
25
30
35
40
45
50
55
Raw Score

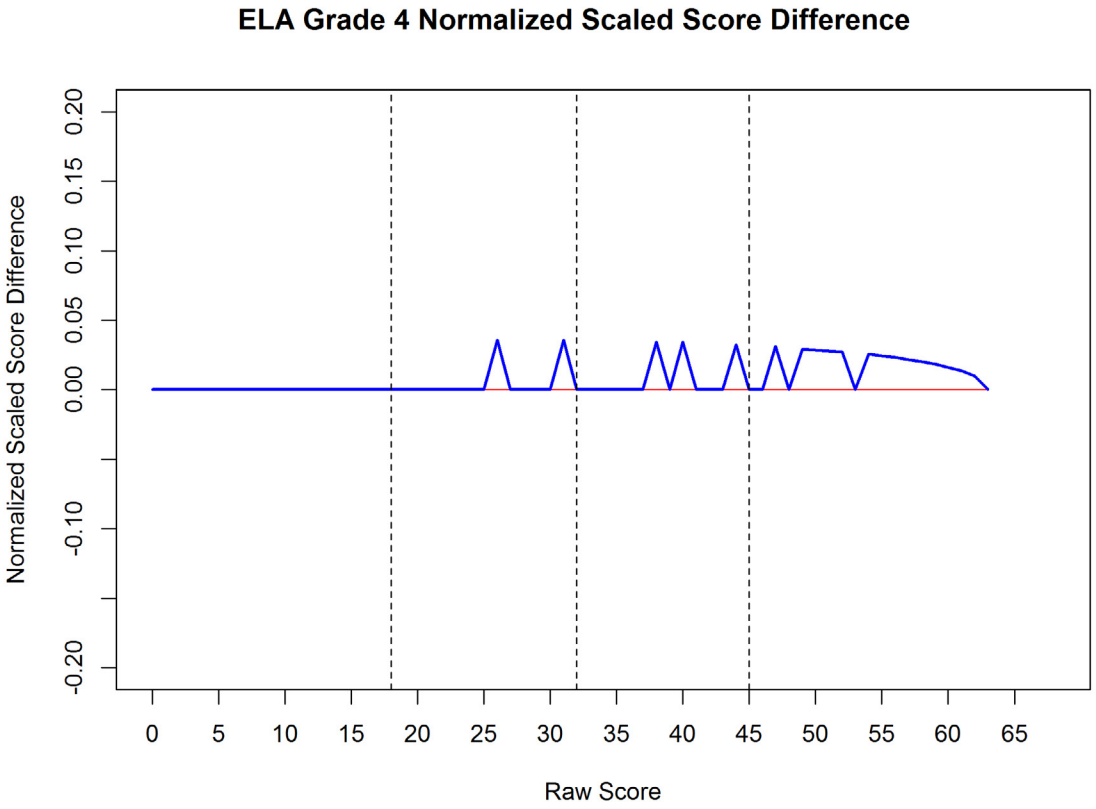

Mathematics Grade 5 Normalized Scaled Score Difference
Normalized Scaled Score Difference
0.20
0.15
0.10
0.05
0.00
-0.10
-0.20
0
5
10
15
20
25
30
35
40
45
50
55
Raw Score

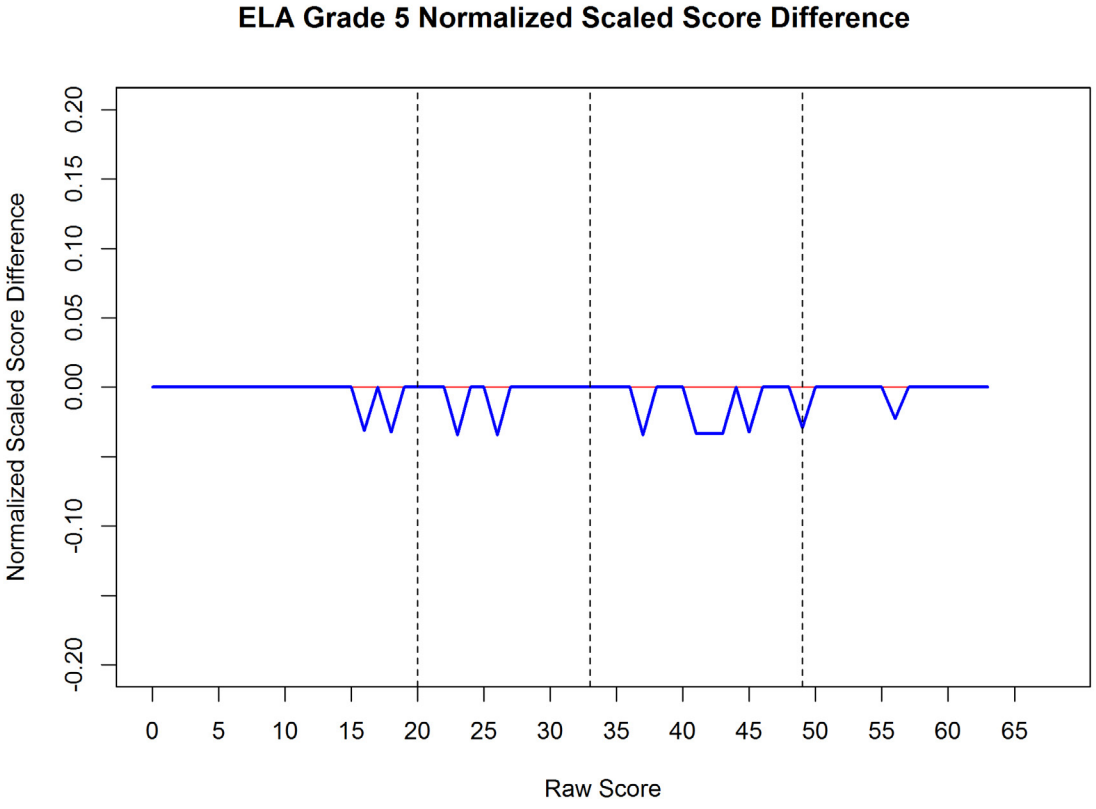

Mathematics Grade 6 Normalized Scaled Score Difference
Normalized Scaled Score Difference
0.20
0.15
0.10
0.05
0.00
-0.10
-0.20
0
5
10
15
20
25
30
35
40
45
50
55
Raw Score

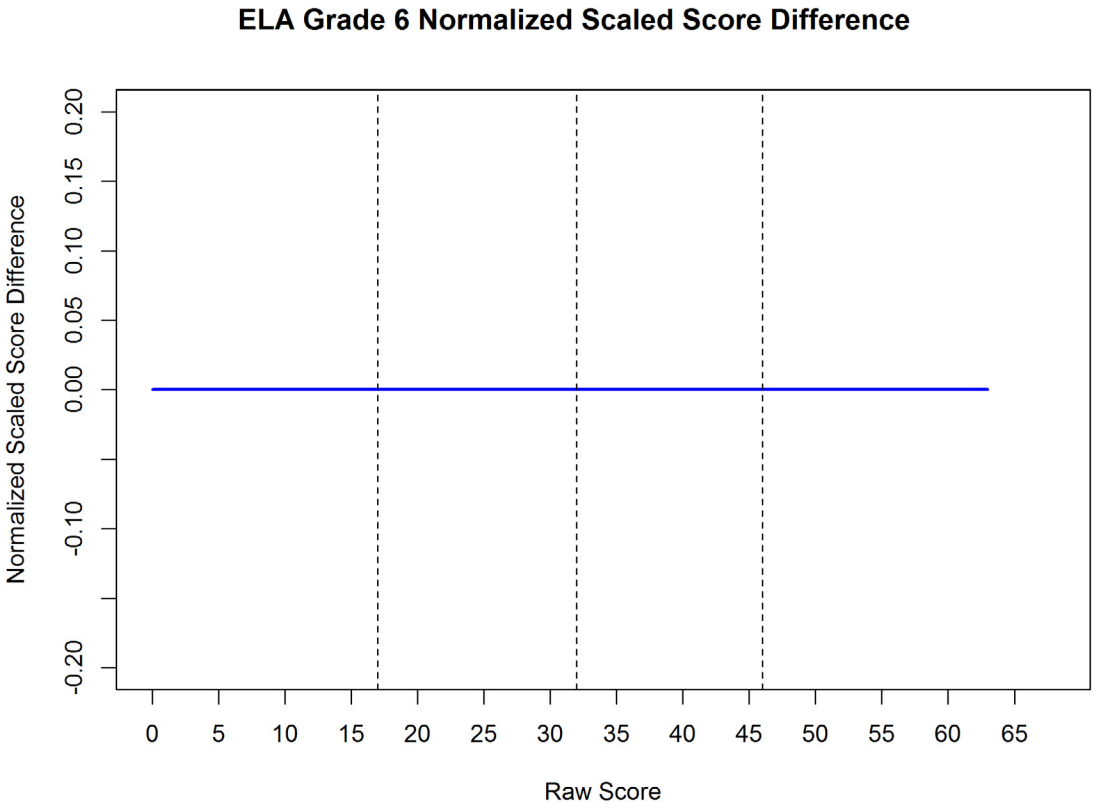

Mathematics Grade 7 Normalized Scaled Score Difference
Normalized Scaled Score Difference
0.20
0.15
0.10
0.05
0.00
-0.10
-0.20
0
5
10
15
20
25
30
35
40
45
50
55
Raw Score

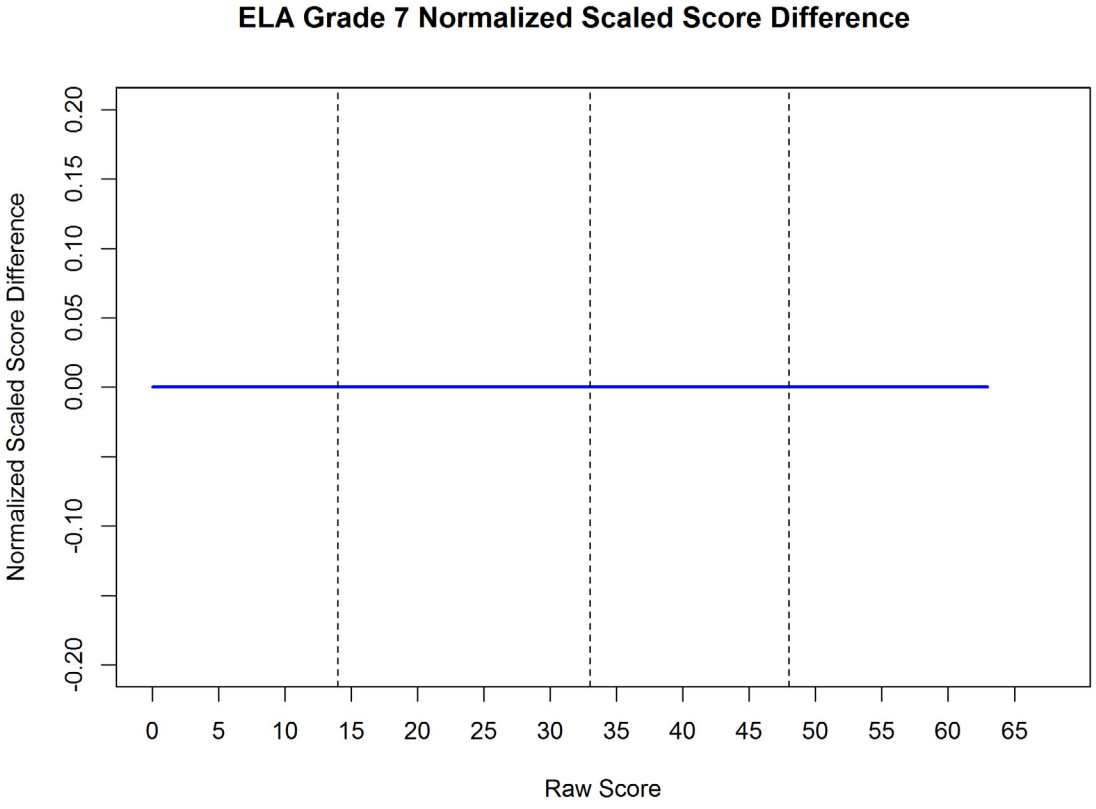

Mathematics Grade 8 Normalized Scaled Score Difference
Normalized Scaled Score Difference
0.20
0.15
0.10
0.05
0.00
-0.10
-0.20
0
5
10
15
20
25
30
35
40
45
50
55
Raw Score

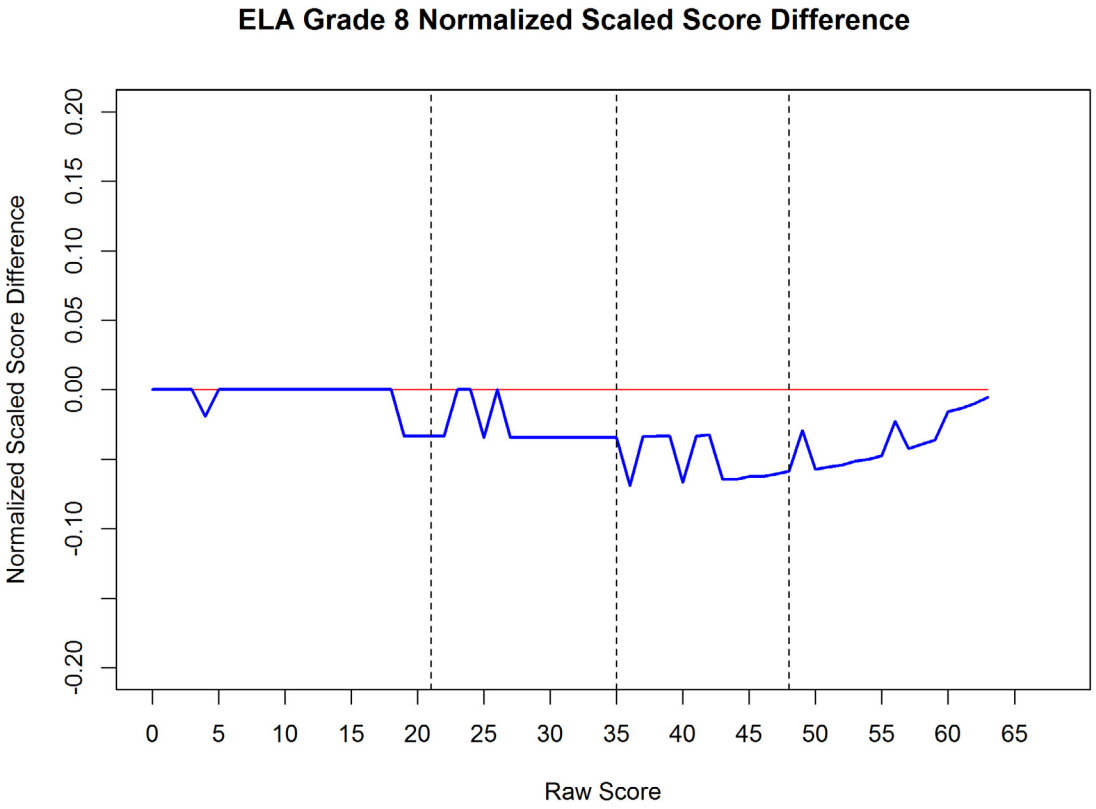

ELA Grade 3 Normalized Scaled Score Difference
Normalized Scaled Score Difference
0.20
0.15
0.10
0.05
0.00
-0.10
-0.20
0
5
10
15
20
25
30
35
40
45
50
Raw Score

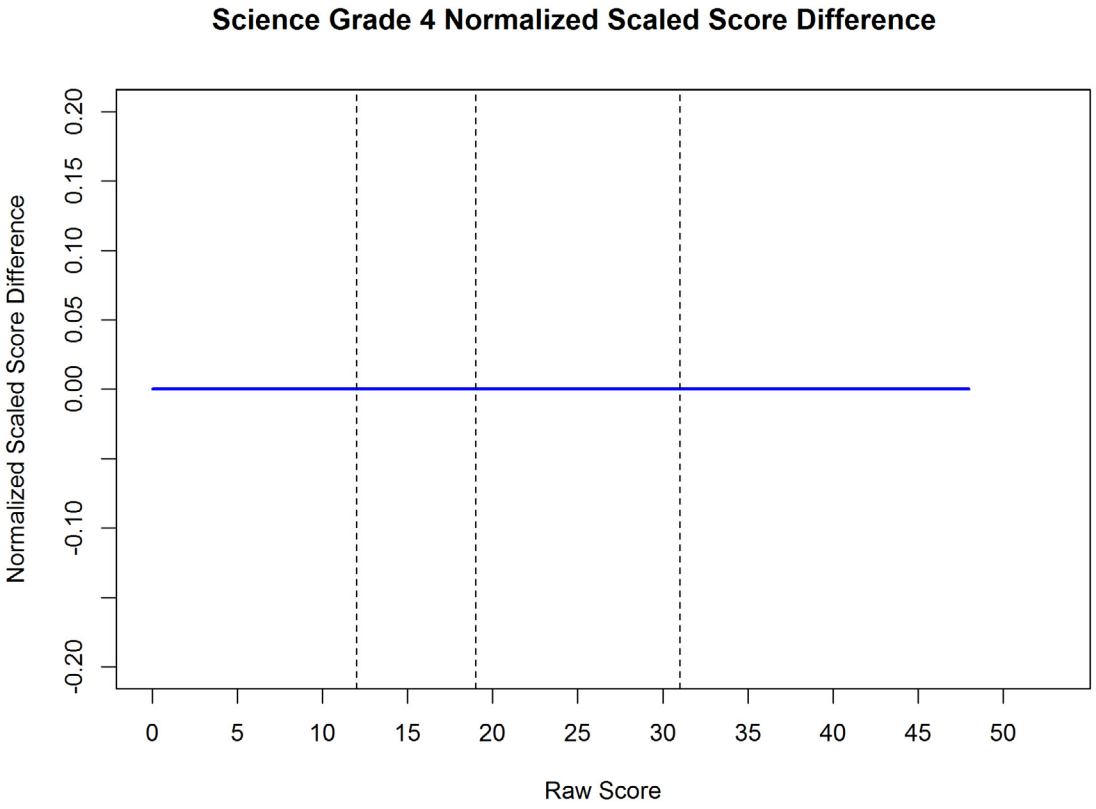

ELA Grade 4 Normalized Scaled Score Difference
Normalized Scaled Score Difference
-0.20
-0.10
0.00
0.05
0.10
0.15
0.20
0
5
10
15
20
25
30
35
40
45
50
55
60
65
Raw Score


ELA Grade 5 Normalized Scaled Score Difference
Normalized Scaled Score Difference
-0.20
-0.10
0.00
0.05
0.10
0.15
0.20
0
5
10
15
20
25
30
35
40
45
50
55
60
65
Raw Score


ELA Grade 6 Normalized Scaled Score Difference
Normalized Scaled Score Difference
-0.20
-0.10
0.00
0.05
0.10
0.15
0.20
0
5
10
15
20
25
30
35
40
45
50
55
60
65
Raw Score


ELA Grade 7 Normalized Scaled Score Difference
Normalized Scaled Score Difference
-0.20
-0.10
0.00
0.05
0.10
0.15
0.20
0
5
10
15
20
25
30
35
40
45
50
55
60
65
Raw Score


ELA Grade 8 Normalized Scaled Score Difference
Normalized Scaled Score Difference
0.20
0.15
0.10
0.05
0.00
-0.10
-0.20
0
5
10
15
20
25
30
35
40
45
50
55
60
65
Raw Score


Science Grade 4 Normalized Scaled Score Difference
Normalized Scaled Score Difference
0.20
0.15
0.10
0.05
0.00
-0.10
-0.20
0
5
10
15
20
25
30
35
40
45
50
Raw Score

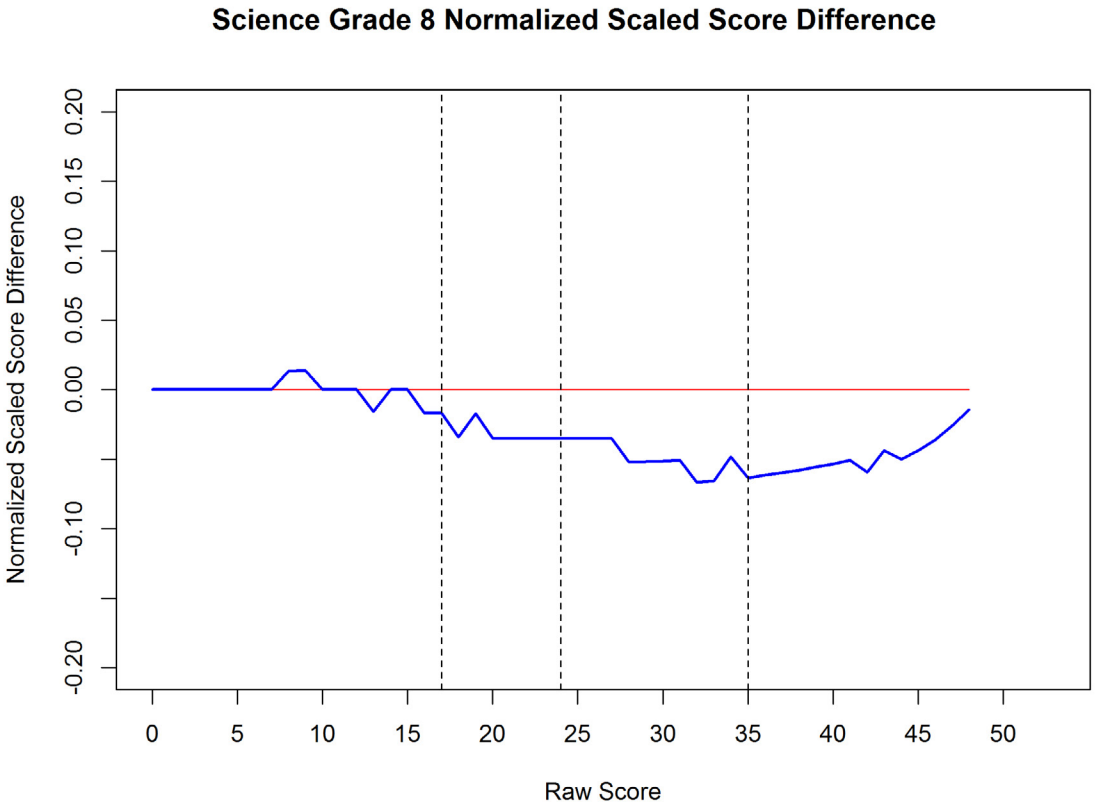

Science Grade 8 Normalized Scaled Score Difference
Normalized Scaled Score Difference
0.20
0.15
0.10
0.05
0.00
-0.10
-0.20
0
5
10
15
20
25
30
35
40
45
50
Raw Score

Table T–1. Pre- and Post-Equated Conversion Tables by Subject and Grade

Mathematics Grade 3 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	183	184	BB	BB	0.0	True
1	600	600	101	102	BB	BB	0.0	True
2	659	654	73	73	BB	BB	0.0	True
3	702	697	60	60	BB	BB	0.1	True
4	734	729	53	53	BB	BB	0.2	True
5	759	755	48	48	BB	BB	0.3	True
6	779	776	44	44	BB	BB	0.6	True
7	798	795	41	42	BB	BB	1.0	True
8	814	811	39	39	BB	BB	1.4	True
9	828	826	37	38	BB	BB	1.8	True
10	842	840	36	36	BB	BB	2.1	True
11	854	852	35	35	BB	BB	2.3	True
12	866	864	34	34	BB	BB	2.6	True
13	877	876	33	33	BB	BB	2.6	True
14	888	886	32	32	BB	BB	2.6	True
15	898	897	32	32	BB	BB	2.6	True
16	908	907	31	31	BB	BB	2.6	True
17	918	916	31	31	BB	BB	2.4	True
18	927	926	30	30	B	B	2.5	True
19	936	935	30	30	B	B	2.4	True
20	945	944	30	30	B	B	2.5	True
21	954	953	30	30	B	B	2.4	True
22	962	962	29	30	B	B	2.5	True
23	971	970	29	29	B	B	2.4	True
24	980	979	29	29	B	B	2.6	True
25	988	987	29	29	B	B	2.6	True
26	997	996	29	29	B	B	2.5	True
27	1005	1005	29	29	P	P	2.7	True
28	1014	1013	29	29	P	P	2.6	True
29	1022	1022	29	29	P	P	2.6	True
30	1031	1031	30	30	P	P	2.7	True
31	1040	1039	30	30	P	P	2.6	True
32	1049	1048	30	30	P	P	2.7	True
33	1058	1058	30	30	P	P	2.6	True
34	1067	1067	31	31	P	P	2.7	True
35	1077	1077	31	31	P	P	2.6	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
36	1087	1086	32	32	P	P	2.5	True
37	1097	1097	32	32	P	P	2.6	True
38	1108	1107	33	33	P	P	2.5	True
39	1119	1118	34	34	A	A	2.5	True
40	1130	1130	35	35	A	A	2.5	True
41	1143	1142	36	36	A	A	2.4	True
42	1156	1155	37	37	A	A	2.3	True
43	1170	1170	38	38	A	A	2.2	True
44	1185	1185	40	40	A	A	2.1	True
45	1202	1202	42	42	A	A	1.7	True
46	1221	1221	45	45	A	A	1.7	True
47	1243	1243	49	49	A	A	1.4	True
48	1270	1269	54	54	A	A	1.2	True
49	1302	1302	61	61	A	A	0.8	True
50	1347	1347	74	74	A	A	0.4	True
51	1421	1421	102	102	A	A	0.2	True
52	1544	1544	184	184	A	A	0.0	True

Mathematics Grade 4 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	184	184	BB	BB	0.0	True
1	600	600	102	102	BB	BB	0.0	True
2	636	633	73	73	BB	BB	0.0	True
3	680	677	61	61	BB	BB	0.0	True
4	712	710	53	54	BB	BB	0.0	True
5	738	736	49	49	BB	BB	0.1	True
6	760	758	45	45	BB	BB	0.3	True
7	778	777	42	42	BB	BB	0.5	True
8	795	794	40	40	BB	BB	0.8	True
9	811	809	38	39	BB	BB	1.2	True
10	825	824	37	37	BB	BB	1.8	True
11	838	837	36	36	BB	BB	2.1	True
12	850	849	35	35	BB	BB	2.5	True
13	862	861	34	34	BB	BB	2.7	True
14	873	873	33	33	BB	BB	2.8	True
15	884	883	32	33	BB	BB	2.9	True
16	894	894	32	32	BB	BB	2.8	True
17	890	890	32	32	1010	29	2.7	True
17	904	904	31	31	BB	BB	2.8	True
18	914	913	31	31	B	B	2.8	True
19	923	923	30	31	B	B	2.7	True
20	932	932	30	30	B	B	2.8	True
21	941	941	30	30	B	B	2.6	True
22	950	950	30	30	B	B	2.6	True
23	959	959	30	30	B	B	2.6	True
24	968	968	29	30	B	B	2.6	True
25	976	976	29	29	B	B	2.6	True
26	985	985	29	29	B	B	2.6	True
27	993	994	29	29	B	B	2.6	True
28	1002	1002	29	29	P	P	2.6	True
29	1011	1011	29	30	P	P	2.6	True
30	1019	1020	30	30	P	P	2.7	True
31	1028	1029	30	30	P	P	2.5	True
32	1037	1038	30	30	P	P	2.6	True
33	1046	1047	30	30	P	P	2.6	True
34	1055	1056	31	31	P	P	2.6	True
35	1065	1066	31	31	P	P	2.5	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
36	1075	1076	32	32	P	P	2.5	True
37	1085	1086	32	32	P	P	2.5	True
38	1096	1096	33	33	P	P	2.5	True
39	1107	1108	34	34	A	A	2.4	True
40	1118	1119	35	35	A	A	2.3	True
41	1130	1131	36	36	A	A	2.4	True
42	1144	1145	37	37	A	A	2.2	True
43	1158	1159	38	38	A	A	2.2	True
44	1173	1174	40	40	A	A	2.1	True
45	1190	1191	42	42	A	A	2.0	True
46	1209	1210	45	45	A	A	1.7	True
47	1231	1232	49	49	A	A	1.6	True
48	1257	1258	54	54	A	A	1.2	True
49	1290	1291	61	61	A	A	0.9	True
50	1335	1336	74	74	A	A	0.6	True
51	1409	1410	102	102	A	A	0.3	True
52	1533	1534	184	184	A	A	0.1	True

Mathematics Grade 5 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	184	184	BB	BB	0.0	True
1	600	600	102	102	BB	BB	0.0	True
2	644	638	73	74	BB	BB	0.0	True
3	688	683	61	61	BB	BB	0.0	True
4	720	716	53	54	BB	BB	0.1	True
5	746	742	48	49	BB	BB	0.2	True
6	767	764	45	45	BB	BB	0.5	True
7	786	783	42	42	BB	BB	0.8	True
8	802	799	40	40	BB	BB	1.3	True
9	817	815	38	38	BB	BB	1.8	True
10	831	829	36	37	BB	BB	2.2	True
11	843	841	35	35	BB	BB	2.5	True
12	855	853	34	34	BB	BB	2.6	True
13	866	865	33	33	BB	BB	2.8	True
14	877	876	32	32	BB	BB	3.1	True
15	887	886	32	32	BB	BB	3.0	True
16	897	896	31	31	BB	BB	3.1	True
17	906	905	31	31	B	B	2.9	True
18	916	915	30	30	B	B	3.0	True
19	925	924	30	30	B	B	3.0	True
20	933	933	30	30	B	B	2.9	True
21	942	941	29	29	B	B	2.9	True
22	951	950	29	29	B	B	2.9	True
23	959	958	29	29	B	B	2.9	True
24	968	967	29	29	B	B	2.8	True
25	976	975	29	29	B	B	2.9	True
26	984	984	29	29	B	B	2.9	True
27	993	992	29	29	B	B	2.8	True
28	1001	1001	29	29	P	P	2.6	True
29	1010	1010	29	29	P	P	2.7	True
30	1019	1018	30	30	P	P	2.7	True
31	1027	1027	30	30	P	P	2.6	True
32	1036	1036	30	30	P	P	2.6	True
33	1046	1045	30	30	P	P	2.4	True
34	1055	1054	31	31	P	P	2.4	True
35	1064	1064	31	31	P	P	2.3	True
36	1074	1074	32	32	P	P	2.2	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1084	1084	32	32	P	P	2.1	True
38	1095	1095	33	33	P	P	2.0	True
39	1106	1105	33	33	P	P	2.0	True
40	1117	1117	34	34	A	A	1.9	True
41	1129	1129	35	35	A	A	1.8	True
42	1142	1142	36	36	A	A	1.7	True
43	1156	1155	38	38	A	A	1.6	True
44	1171	1170	39	39	A	A	1.5	True
45	1187	1187	41	41	A	A	1.4	True
46	1205	1205	44	44	A	A	1.2	True
47	1226	1226	48	48	A	A	1.1	True
48	1251	1251	52	52	A	A	1.1	True
49	1282	1282	60	60	A	A	0.9	True
50	1325	1325	72	72	A	A	0.7	True
51	1397	1397	101	101	A	A	0.4	True
52	1519	1519	183	183	A	A	0.2	True

Mathematics Grade 6 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	184	185	BB	BB	0.0	True
1	600	600	102	104	BB	BB	0.0	True
2	614	603	74	75	BB	BB	0.0	True
3	659	650	61	63	BB	BB	0.0	True
4	692	684	54	55	BB	BB	0.1	True
5	718	711	49	50	BB	BB	0.2	True
6	741	734	45	46	BB	BB	0.4	True
7	760	754	43	43	BB	BB	0.7	True
8	777	772	40	41	BB	BB	1.2	True
9	793	788	39	39	BB	BB	1.7	True
10	807	802	37	38	BB	BB	2.3	True
11	820	816	36	36	BB	BB	2.9	True
12	833	829	35	35	BB	BB	3.3	True
13	845	841	34	34	BB	BB	3.5	True
14	856	852	33	33	BB	BB	3.6	True
15	867	863	33	33	BB	BB	3.5	True
16	877	874	32	32	BB	BB	3.5	True
17	887	884	31	32	BB	BB	3.3	True
18	897	894	31	31	B	BB	3.2	False
19	906	903	31	31	B	B	2.9	True
20	916	913	30	31	B	B	2.8	True
21	925	922	30	30	B	B	2.8	True
22	934	931	30	30	B	B	2.6	True
23	943	940	30	30	B	B	2.6	True
24	951	949	30	30	B	B	2.6	True
25	960	958	30	30	B	B	2.4	True
26	969	967	30	30	B	B	2.3	True
27	978	975	30	30	B	B	2.3	True
28	986	984	30	30	B	B	2.3	True
29	995	993	30	30	B	B	2.2	True
30	1004	1002	30	30	P	P	2.3	True
31	1013	1011	30	30	P	P	2.2	True
32	1022	1020	30	30	P	P	2.2	True
33	1031	1029	31	31	P	P	2.2	True
34	1041	1039	31	31	P	P	2.1	True
35	1050	1049	31	31	P	P	2.2	True
36	1060	1059	32	32	P	P	2.1	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1071	1069	32	32	P	P	2.1	True
38	1081	1080	33	33	P	P	2.1	True
39	1092	1091	34	34	P	P	2.0	True
40	1104	1103	35	35	P	P	2.0	True
41	1117	1115	36	36	A	A	2.0	True
42	1130	1129	37	37	A	A	1.9	True
43	1144	1143	39	39	A	A	1.9	True
44	1160	1159	40	41	A	A	1.8	True
45	1177	1176	43	43	A	A	1.6	True
46	1197	1196	46	46	A	A	1.6	True
47	1219	1218	49	49	A	A	1.4	True
48	1246	1245	54	54	A	A	1.2	True
49	1279	1278	62	62	A	A	1.0	True
50	1325	1324	74	74	A	A	0.7	True
51	1399	1398	103	103	A	A	0.4	True
52	1524	1523	184	184	A	A	0.1	True

Mathematics Grade 7 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	183	184	BB	BB	0.0	True
1	600	600	102	102	BB	BB	0.0	True
2	633	629	73	73	BB	BB	0.0	True
3	677	673	61	61	BB	BB	0.1	True
4	709	706	53	54	BB	BB	0.2	True
5	735	732	48	49	BB	BB	0.5	True
6	756	753	45	45	BB	BB	0.9	True
7	775	773	42	42	BB	BB	1.4	True
8	792	789	40	40	BB	BB	2.1	True
9	807	805	38	38	BB	BB	2.9	True
10	821	819	37	37	BB	BB	3.3	True
11	834	832	35	36	BB	BB	3.8	True
12	846	844	34	34	BB	BB	3.7	True
13	857	856	33	34	BB	BB	3.8	True
14	868	867	33	33	BB	BB	3.6	True
15	878	877	32	32	BB	BB	3.5	True
16	888	887	31	31	BB	BB	3.3	True
17	898	897	31	31	BB	BB	3.0	True
18	908	907	30	31	B	B	2.9	True
19	917	916	30	30	B	B	2.9	True
20	926	925	30	30	B	B	2.8	True
21	934	934	29	30	B	B	2.7	True
22	943	942	29	29	B	B	2.6	True
23	952	951	29	29	B	B	2.6	True
24	960	959	29	29	B	B	2.5	True
25	968	968	29	29	B	B	2.4	True
26	977	976	29	29	B	B	2.5	True
27	985	985	29	29	B	B	2.4	True
28	994	993	29	29	B	B	2.3	True
29	1002	1002	29	29	P	P	2.3	True
30	1011	1011	29	30	P	P	2.2	True
31	1020	1019	30	30	P	P	2.2	True
32	1029	1028	30	30	P	P	2.1	True
33	1038	1037	30	30	P	P	2.0	True
34	1047	1047	31	31	P	P	2.1	True
35	1057	1056	31	31	P	P	2.0	True
36	1066	1066	32	32	P	P	2.0	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1077	1076	32	32	P	P	1.9	True
38	1087	1087	33	33	P	P	1.8	True
39	1098	1098	34	34	P	P	1.8	True
40	1110	1110	35	35	A	A	1.7	True
41	1122	1122	36	36	A	A	1.6	True
42	1135	1135	37	37	A	A	1.6	True
43	1150	1149	38	38	A	A	1.4	True
44	1165	1165	40	40	A	A	1.4	True
45	1182	1182	43	43	A	A	1.2	True
46	1202	1202	46	46	A	A	1.1	True
47	1224	1224	49	49	A	A	0.9	True
48	1251	1251	55	55	A	A	0.8	True
49	1285	1285	62	62	A	A	0.6	True
50	1332	1331	75	75	A	A	0.4	True
51	1408	1408	104	104	A	A	0.2	True
52	1535	1535	185	185	A	A	0.1	True

Mathematics Grade 8 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	183	184	BB	BB	0.0	True
1	600	600	102	102	BB	BB	0.0	True
2	609	607	73	73	BB	BB	0.0	True
3	653	651	60	61	BB	BB	0.0	True
4	685	683	53	53	BB	BB	0.1	True
5	711	709	48	48	BB	BB	0.2	True
6	732	731	45	45	BB	BB	0.4	True
7	751	749	42	42	BB	BB	1.0	True
8	768	766	40	40	BB	BB	1.5	True
9	783	782	38	38	BB	BB	2.0	True
10	797	796	37	37	BB	BB	2.7	True
11	810	809	35	36	BB	BB	3.2	True
12	822	821	34	35	BB	BB	3.7	True
13	834	833	34	34	BB	BB	4.0	True
14	845	844	33	33	BB	BB	3.9	True
15	855	855	32	32	BB	BB	3.8	True
16	865	865	32	32	BB	BB	3.7	True
17	875	875	31	31	BB	BB	3.6	True
18	884	885	31	31	BB	BB	3.2	True
19	894	894	30	30	BB	BB	3.3	True
20	903	903	30	30	BB	BB	3.1	True
21	912	912	30	30	B	B	2.9	True
22	920	921	29	29	B	B	2.7	True
23	929	929	29	29	B	B	2.6	True
24	937	938	29	29	B	B	2.6	True
25	945	946	29	29	B	B	2.4	True
26	954	954	29	29	B	B	2.3	True
27	962	962	29	29	B	B	2.4	True
28	970	970	28	29	B	B	2.2	True
29	978	979	28	29	B	B	2.2	True
30	986	987	29	29	B	B	2.1	True
31	994	995	29	29	B	B	2.1	True
32	1002	1003	29	29	P	P	2.1	True
33	1011	1012	29	29	P	P	2.0	True
34	1019	1020	29	29	P	P	1.9	True
35	1028	1029	29	30	P	P	1.8	True
36	1036	1038	30	30	P	P	1.8	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1046	1047	30	30	P	P	1.8	True
38	1055	1056	31	31	P	P	1.8	True
39	1065	1066	32	32	P	P	1.7	True
40	1075	1076	32	33	P	P	1.6	True
41	1086	1087	33	34	P	P	1.7	True
42	1097	1099	35	35	P	P	1.6	True
43	1110	1111	36	36	A	A	1.6	True
44	1123	1125	38	38	A	A	1.5	True
45	1139	1140	40	40	A	A	1.4	True
46	1156	1157	43	43	A	A	1.3	True
47	1176	1177	47	47	A	A	1.2	True
48	1200	1201	52	52	A	A	1.2	True
49	1230	1232	59	59	A	A	0.9	True
50	1273	1275	72	72	A	A	0.7	True
51	1344	1346	101	101	A	A	0.5	True
52	1466	1468	183	183	A	A	0.2	True

ELA Grade 3 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	184	184	BB	BB	0.0	True
1	602	602	102	102	BB	BB	0.0	True
2	676	676	74	74	BB	BB	0.0	True
3	720	720	61	61	BB	BB	0.0	True
4	753	753	54	54	BB	BB	0.1	True
5	780	780	49	49	BB	BB	0.3	True
6	802	802	46	46	BB	BB	0.7	True
7	822	822	43	43	BB	BB	1.1	True
8	840	840	41	41	BB	BB	1.7	True
9	856	856	39	39	BB	BB	2.4	True
10	871	871	38	38	BB	BB	2.8	True
11	885	885	37	37	BB	BB	3.2	True
12	898	898	36	36	BB	BB	3.4	True
13	911	911	35	35	B	B	3.5	True
14	923	923	35	35	B	B	3.5	True
15	935	935	34	34	B	B	3.5	True
16	946	946	34	34	B	B	3.6	True
17	957	957	33	33	B	B	3.5	True
18	968	968	33	33	B	B	3.5	True
19	979	979	33	33	B	B	3.5	True
20	989	989	32	32	B	B	3.5	True
21	1000	1000	32	32	P	P	3.6	True
22	1010	1010	32	32	P	P	3.6	True
23	1020	1020	32	32	P	P	3.6	True
24	1030	1030	32	32	P	P	3.7	True
25	1041	1041	32	32	P	P	3.6	True
26	1051	1051	32	32	P	P	3.6	True
27	1061	1061	32	32	P	P	3.6	True
28	1072	1072	33	33	P	P	3.5	True
29	1083	1083	33	33	P	P	3.5	True
30	1094	1094	33	33	P	P	3.3	True
31	1105	1105	34	34	P	P	3.2	True
32	1117	1117	35	35	P	P	3.0	True
33	1129	1129	35	35	P	P	2.8	True
34	1142	1142	36	36	P	P	2.4	True
35	1155	1155	37	37	A	A	2.2	True
36	1170	1170	39	39	A	A	1.9	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1185	1185	40	40	A	A	1.6	True
38	1202	1202	42	42	A	A	1.2	True
39	1221	1221	45	45	A	A	0.9	True
40	1243	1243	49	49	A	A	0.6	True
41	1269	1269	53	53	A	A	0.4	True
42	1301	1301	61	61	A	A	0.2	True
43	1345	1345	73	73	A	A	0.1	True
44	1418	1418	102	102	A	A	0.0	True
45	1541	1541	184	184	A	A	0.0	True

ELA Grade 4 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	183	183	BB	BB	0.0	True
1	600	600	101	101	BB	BB	0.0	True
2	621	621	73	73	BB	BB	0.0	True
3	665	665	60	60	BB	BB	0.0	True
4	697	697	53	53	BB	BB	0.0	True
5	722	722	48	48	BB	BB	0.1	True
6	743	743	44	44	BB	BB	0.2	True
7	762	762	42	42	BB	BB	0.3	True
8	778	778	39	39	BB	BB	0.5	True
9	793	793	38	38	BB	BB	0.7	True
10	806	806	36	36	BB	BB	1.0	True
11	819	819	35	35	BB	BB	1.3	True
12	831	831	34	34	BB	BB	1.6	True
13	842	842	33	33	BB	BB	1.7	True
14	853	853	32	32	BB	BB	1.9	True
15	863	863	32	32	BB	BB	1.9	True
16	873	873	31	31	BB	BB	2.1	True
17	882	882	30	30	BB	BB	2.2	True
18	891	891	30	30	B	B	2.2	True
19	900	900	30	30	B	B	2.3	True
20	909	909	29	29	B	B	2.3	True
21	917	917	29	29	B	B	2.2	True
22	925	925	29	29	B	B	2.3	True
23	934	934	28	28	B	B	2.3	True
24	942	942	28	28	B	B	2.3	True
25	950	950	28	28	B	B	2.3	True
26	958	957	28	28	B	B	2.3	True
27	965	965	28	28	B	B	2.3	True
28	973	973	28	28	B	B	2.4	True
29	981	981	28	28	B	B	2.4	True
30	989	989	28	28	B	B	2.5	True
31	997	996	28	28	B	B	2.6	True
32	1004	1004	28	28	P	P	2.6	True
33	1012	1012	28	28	P	P	2.7	True
34	1020	1020	28	28	P	P	2.7	True
35	1028	1028	28	28	P	P	2.7	True
36	1036	1036	28	28	P	P	2.7	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1044	1044	29	29	P	P	2.8	True
38	1053	1052	29	29	P	P	2.8	True
39	1061	1061	29	29	P	P	2.7	True
40	1070	1069	29	29	P	P	2.8	True
41	1078	1078	30	30	P	P	2.8	True
42	1087	1087	30	30	P	P	2.7	True
43	1096	1096	30	30	P	P	2.5	True
44	1106	1105	31	31	P	P	2.5	True
45	1115	1115	31	31	A	A	2.4	True
46	1125	1125	32	32	A	A	2.3	True
47	1136	1135	32	32	A	A	2.1	True
48	1146	1146	33	33	A	A	1.9	True
49	1158	1157	34	34	A	A	1.7	True
50	1169	1168	35	35	A	A	1.5	True
51	1182	1181	36	36	A	A	1.2	True
52	1195	1194	37	37	A	A	1.1	True
53	1208	1208	38	38	A	A	0.8	True
54	1223	1222	39	39	A	A	0.6	True
55	1240	1239	41	41	A	A	0.5	True
56	1257	1256	43	43	A	A	0.3	True
57	1277	1276	46	46	A	A	0.2	True
58	1300	1299	49	49	A	A	0.2	True
59	1327	1326	54	54	A	A	0.1	True
60	1360	1359	62	62	A	A	0.1	True
61	1405	1404	74	74	A	A	0.0	True
62	1479	1478	102	102	A	A	0.0	True
63	1602	1602	184	184	A	A	0.0	True

ELA Grade 5 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	184	184	BB	BB	0.0	True
1	600	600	102	102	BB	BB	0.0	True
2	600	600	74	74	BB	BB	0.0	True
3	634	634	61	61	BB	BB	0.0	True
4	667	667	54	54	BB	BB	0.0	True
5	694	694	49	49	BB	BB	0.0	True
6	716	716	46	46	BB	BB	0.1	True
7	736	736	43	43	BB	BB	0.2	True
8	753	753	41	41	BB	BB	0.3	True
9	769	769	39	39	BB	BB	0.5	True
10	784	784	37	37	BB	BB	0.7	True
11	797	797	36	36	BB	BB	0.9	True
12	810	810	35	35	BB	BB	1.0	True
13	822	822	34	34	BB	BB	1.3	True
14	833	833	33	33	BB	BB	1.5	True
15	844	844	33	33	BB	BB	1.7	True
16	854	855	32	32	BB	BB	1.8	True
17	865	865	31	31	BB	BB	1.8	True
18	874	875	31	31	BB	BB	2.0	True
19	884	884	31	31	BB	BB	2.1	True
20	893	893	30	30	B	B	2.2	True
21	902	902	30	30	B	B	2.2	True
22	911	911	29	30	B	B	2.3	True
23	919	920	29	29	B	B	2.3	True
24	928	928	29	29	B	B	2.2	True
25	936	936	29	29	B	B	2.3	True
26	944	945	29	29	B	B	2.3	True
27	953	953	29	29	B	B	2.4	True
28	961	961	28	28	B	B	2.4	True
29	969	969	28	28	B	B	2.4	True
30	977	977	28	28	B	B	2.6	True
31	985	985	28	28	B	B	2.6	True
32	993	993	28	28	B	B	2.7	True
33	1001	1001	28	28	P	P	2.7	True
34	1009	1009	28	28	P	P	2.7	True
35	1017	1017	29	28	P	P	2.7	True
36	1025	1025	29	29	P	P	2.7	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1033	1034	29	29	P	P	2.9	True
38	1042	1042	29	29	P	P	2.8	True
39	1050	1050	29	29	P	P	2.8	True
40	1059	1059	29	29	P	P	2.7	True
41	1067	1068	30	30	P	P	2.9	True
42	1076	1077	30	30	P	P	2.8	True
43	1085	1086	30	30	P	P	2.7	True
44	1095	1095	31	31	P	P	2.6	True
45	1104	1105	31	31	P	P	2.6	True
46	1114	1114	32	32	P	P	2.4	True
47	1125	1125	32	32	P	P	2.3	True
48	1135	1135	33	33	P	P	2.1	True
49	1146	1147	34	34	A	A	2.0	True
50	1158	1158	35	35	A	A	1.8	True
51	1171	1171	36	36	A	A	1.5	True
52	1184	1184	37	37	A	A	1.3	True
53	1198	1198	38	38	A	A	1.0	True
54	1213	1213	40	40	A	A	0.9	True
55	1230	1230	42	42	A	A	0.7	True
56	1248	1249	44	44	A	A	0.5	True
57	1269	1269	47	47	A	A	0.3	True
58	1293	1293	51	51	A	A	0.2	True
59	1321	1321	56	56	A	A	0.1	True
60	1356	1356	63	63	A	A	0.1	True
61	1402	1402	75	75	A	A	0.1	True
62	1478	1478	103	103	A	A	0.0	True
63	1603	1603	184	184	A	A	0.0	True

ELA Grade 6 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	183	183	BB	BB	0.0	True
1	600	600	101	101	BB	BB	0.0	True
2	615	615	73	73	BB	BB	0.0	True
3	658	658	60	60	BB	BB	0.0	True
4	690	690	53	53	BB	BB	0.0	True
5	715	715	48	48	BB	BB	0.0	True
6	736	736	44	44	BB	BB	0.1	True
7	755	755	42	42	BB	BB	0.1	True
8	771	771	40	40	BB	BB	0.2	True
9	786	786	38	38	BB	BB	0.4	True
10	800	800	36	36	BB	BB	0.5	True
11	812	812	35	35	BB	BB	0.7	True
12	825	825	34	34	BB	BB	0.9	True
13	836	836	33	33	BB	BB	1.0	True
14	847	847	33	33	BB	BB	1.2	True
15	857	857	32	32	BB	BB	1.3	True
16	868	868	32	32	BB	BB	1.5	True
17	877	877	31	31	B	B	1.7	True
18	887	887	31	31	B	B	2.0	True
19	896	896	30	30	B	B	2.0	True
20	905	905	30	30	B	B	2.1	True
21	914	914	30	30	B	B	2.4	True
22	923	923	29	29	B	B	2.6	True
23	931	931	29	29	B	B	2.7	True
24	939	939	29	29	B	B	2.7	True
25	948	948	29	29	B	B	2.7	True
26	956	956	29	29	B	B	2.9	True
27	964	964	28	28	B	B	2.9	True
28	972	972	28	28	B	B	2.9	True
29	980	980	28	28	B	B	2.9	True
30	988	988	28	28	B	B	3.0	True
31	996	996	28	28	B	B	3.0	True
32	1004	1004	28	28	P	P	3.0	True
33	1012	1012	28	28	P	P	3.0	True
34	1020	1020	28	28	P	P	3.1	True
35	1028	1028	28	28	P	P	2.9	True
36	1036	1036	28	28	P	P	3.1	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1044	1044	29	29	P	P	2.9	True
38	1052	1052	29	29	P	P	3.0	True
39	1061	1061	29	29	P	P	2.9	True
40	1069	1069	29	29	P	P	2.9	True
41	1078	1078	30	30	P	P	2.8	True
42	1087	1087	30	30	P	P	2.7	True
43	1096	1096	30	30	P	P	2.6	True
44	1105	1105	31	31	P	P	2.4	True
45	1114	1114	31	31	P	P	2.3	True
46	1124	1124	31	31	A	A	2.2	True
47	1134	1134	32	32	A	A	2.0	True
48	1144	1144	33	33	A	A	1.7	True
49	1155	1155	33	33	A	A	1.6	True
50	1166	1166	34	34	A	A	1.4	True
51	1178	1178	35	35	A	A	1.2	True
52	1191	1191	36	36	A	A	1.0	True
53	1204	1204	37	37	A	A	0.8	True
54	1218	1218	38	38	A	A	0.7	True
55	1233	1233	40	40	A	A	0.5	True
56	1250	1250	42	42	A	A	0.4	True
57	1268	1268	45	45	A	A	0.3	True
58	1290	1290	48	48	A	A	0.2	True
59	1315	1315	53	53	A	A	0.1	True
60	1346	1346	60	60	A	A	0.1	True
61	1390	1390	73	73	A	A	0.0	True
62	1461	1461	101	101	A	A	0.0	True
63	1583	1583	183	183	A	A	0.0	True

ELA Grade 7 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	184	184	BB	BB	0.0	True
1	600	600	102	102	BB	BB	0.0	True
2	613	613	73	73	BB	BB	0.0	True
3	657	657	61	61	BB	BB	0.0	True
4	689	689	53	53	BB	BB	0.0	True
5	715	715	48	48	BB	BB	0.0	True
6	736	736	45	45	BB	BB	0.1	True
7	755	755	42	42	BB	BB	0.1	True
8	772	772	40	40	BB	BB	0.2	True
9	787	787	38	38	BB	BB	0.4	True
10	800	800	36	36	BB	BB	0.6	True
11	813	813	35	35	BB	BB	0.7	True
12	825	825	34	34	BB	BB	1.0	True
13	836	836	33	33	BB	BB	1.2	True
14	846	846	32	32	B	B	1.5	True
15	857	857	31	31	B	B	1.7	True
16	866	866	31	31	B	B	2.0	True
17	875	875	30	30	B	B	2.1	True
18	884	884	30	30	B	B	2.2	True
19	893	893	29	29	B	B	2.3	True
20	902	902	29	29	B	B	2.2	True
21	910	910	29	29	B	B	2.3	True
22	918	918	28	28	B	B	2.3	True
23	926	926	28	28	B	B	2.2	True
24	934	934	28	28	B	B	2.3	True
25	941	941	28	28	B	B	2.3	True
26	949	949	28	28	B	B	2.2	True
27	957	957	28	28	B	B	2.3	True
28	964	964	27	27	B	B	2.2	True
29	972	972	27	27	B	B	2.3	True
30	979	979	27	27	B	B	2.3	True
31	987	987	27	27	B	B	2.3	True
32	994	994	28	28	B	B	2.5	True
33	1002	1002	28	28	P	P	2.4	True
34	1010	1010	28	28	P	P	2.4	True
35	1017	1017	28	28	P	P	2.5	True
36	1025	1025	28	28	P	P	2.6	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1033	1033	28	28	P	P	2.4	True
38	1041	1041	28	28	P	P	2.6	True
39	1049	1049	29	29	P	P	2.6	True
40	1057	1057	29	29	P	P	2.6	True
41	1066	1066	29	29	P	P	2.7	True
42	1075	1075	30	30	P	P	2.7	True
43	1083	1083	30	30	P	P	2.7	True
44	1093	1093	30	30	P	P	2.6	True
45	1102	1102	31	31	P	P	2.6	True
46	1112	1112	31	31	P	P	2.5	True
47	1122	1122	32	32	P	P	2.5	True
48	1132	1132	33	33	A	A	2.4	True
49	1143	1143	34	34	A	A	2.2	True
50	1155	1155	34	34	A	A	2.0	True
51	1167	1167	35	35	A	A	1.8	True
52	1180	1180	36	36	A	A	1.6	True
53	1194	1194	38	38	A	A	1.3	True
54	1208	1208	39	39	A	A	1.2	True
55	1225	1225	41	41	A	A	0.9	True
56	1242	1242	43	43	A	A	0.7	True
57	1262	1262	46	46	A	A	0.5	True
58	1285	1285	50	50	A	A	0.4	True
59	1312	1312	55	55	A	A	0.3	True
60	1346	1346	62	62	A	A	0.2	True
61	1391	1391	74	74	A	A	0.1	True
62	1465	1465	102	102	A	A	0.1	True
63	1589	1589	184	184	A	A	0.0	True

ELA Grade 8 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	600	600	183	183	BB	BB	0.0	True
1	600	600	100	100	BB	BB	0.0	True
2	600	600	71	72	BB	BB	0.0	True
3	638	638	59	59	BB	BB	0.0	True
4	668	669	52	52	BB	BB	0.0	True
5	693	693	47	47	BB	BB	0.0	True
6	713	713	43	43	BB	BB	0.1	True
7	730	730	41	41	BB	BB	0.1	True
8	746	746	39	39	BB	BB	0.2	True
9	760	760	37	37	BB	BB	0.4	True
10	774	774	36	36	BB	BB	0.4	True
11	786	786	35	35	BB	BB	0.6	True
12	798	798	34	34	BB	BB	0.8	True
13	809	809	33	33	BB	BB	0.9	True
14	820	820	32	32	BB	BB	1.2	True
15	830	830	32	32	BB	BB	1.3	True
16	840	840	31	31	BB	BB	1.4	True
17	850	850	31	31	BB	BB	1.5	True
18	859	859	31	31	BB	BB	1.7	True
19	868	869	30	30	BB	BB	1.7	True
20	877	878	30	30	BB	BB	1.8	True
21	886	887	30	30	B	B	1.9	True
22	895	896	30	30	B	B	2.0	True
23	904	904	29	30	B	B	2.0	True
24	913	913	29	29	B	B	2.1	True
25	921	922	29	29	B	B	2.2	True
26	930	930	29	29	B	B	2.2	True
27	938	939	29	29	B	B	2.3	True
28	946	947	29	29	B	B	2.2	True
29	955	956	29	29	B	B	2.4	True
30	963	964	29	29	B	B	2.4	True
31	971	972	29	29	B	B	2.6	True
32	980	981	29	29	B	B	2.6	True
33	988	989	29	29	B	B	2.8	True
34	997	998	29	29	B	B	2.9	True
35	1005	1006	29	29	P	P	2.9	True
36	1013	1015	29	29	P	P	3.0	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1022	1023	29	30	P	P	3.1	True
38	1031	1032	30	30	P	P	3.2	True
39	1040	1041	30	30	P	P	3.2	True
40	1048	1050	30	30	P	P	3.1	True
41	1058	1059	30	30	P	P	3.0	True
42	1067	1068	31	31	P	P	3.2	True
43	1076	1078	31	31	P	P	3.0	True
44	1086	1088	31	31	P	P	3.0	True
45	1096	1098	32	32	P	P	2.8	True
46	1106	1108	32	32	P	P	2.7	True
47	1117	1119	33	33	P	P	2.5	True
48	1128	1130	34	34	P	A	2.4	False
49	1140	1141	34	34	A	A	2.2	True
50	1152	1154	35	35	A	A	1.9	True
51	1164	1166	36	36	A	A	1.7	True
52	1178	1180	37	37	A	A	1.4	True
53	1192	1194	39	39	A	A	1.2	True
54	1208	1210	40	40	A	A	1.0	True
55	1225	1227	42	42	A	A	0.8	True
56	1244	1245	44	44	A	A	0.6	True
57	1264	1266	47	47	A	A	0.4	True
58	1288	1290	51	51	A	A	0.3	True
59	1316	1318	56	55	A	A	0.2	True
60	1351	1352	63	63	A	A	0.1	True
61	1398	1399	75	75	A	A	0.1	True
62	1474	1475	103	103	A	A	0.0	True
63	1599	1600	184	184	A	A	0.0	True

Science Grade 4 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	1050	1050	324	324	BB	BB	0.0	True
1	1050	1050	179	179	BB	BB	0.0	True
2	1050	1050	129	129	BB	BB	0.0	True
3	1050	1050	107	107	BB	BB	0.0	True
4	1050	1050	94	94	BB	BB	0.0	True
5	1050	1050	85	85	BB	BB	0.2	True
6	1050	1050	79	79	BB	BB	0.2	True
7	1050	1050	74	74	BB	BB	0.4	True
8	1063	1063	70	70	BB	BB	0.7	True
9	1090	1090	67	67	BB	BB	1.0	True
10	1114	1114	65	65	BB	BB	1.3	True
11	1137	1137	63	63	BB	BB	1.6	True
12	1159	1159	61	61	B	B	1.8	True
13	1179	1179	60	60	B	B	1.9	True
14	1199	1199	58	58	B	B	2.3	True
15	1218	1218	57	57	B	B	2.4	True
16	1236	1236	56	56	B	B	2.4	True
17	1254	1254	56	56	B	B	2.6	True
18	1271	1271	55	55	B	B	2.7	True
19	1288	1288	54	54	P	P	2.7	True
20	1305	1305	54	54	P	P	2.9	True
21	1321	1321	54	54	P	P	3.0	True
22	1337	1337	54	54	P	P	3.2	True
23	1354	1354	53	53	P	P	3.3	True
24	1370	1370	53	53	P	P	3.3	True
25	1386	1386	53	53	P	P	3.4	True
26	1402	1402	54	54	P	P	3.6	True
27	1418	1418	54	54	P	P	3.6	True
28	1435	1435	54	54	P	P	3.9	True
29	1452	1452	55	55	P	P	3.9	True
30	1469	1469	55	55	P	P	3.8	True
31	1486	1486	56	56	A	A	3.9	True
32	1504	1504	56	56	A	A	3.8	True
33	1522	1522	57	57	A	A	3.8	True
34	1541	1541	58	58	A	A	3.5	True
35	1561	1561	60	60	A	A	3.5	True
36	1581	1581	61	61	A	A	3.4	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1603	1603	63	63	A	A	3.2	True
38	1626	1626	65	65	A	A	2.8	True
39	1651	1651	67	67	A	A	2.5	True
40	1678	1678	70	70	A	A	2.0	True
41	1707	1707	74	74	A	A	1.8	True
42	1740	1740	79	79	A	A	1.4	True
43	1778	1778	85	85	A	A	1.1	True
44	1823	1823	94	94	A	A	0.7	True
45	1880	1880	107	107	A	A	0.5	True
46	1957	1957	129	129	A	A	0.2	True
47	2085	2085	179	179	A	A	0.1	True
48	2302	2302	324	324	A	A	0.0	True

Science Grade 8 Raw-to-Scaled Score Comparison for Pre-Equated and Post-Equated Solutions

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
0	925	925	351	351	BB	BB	0.0	True
1	925	925	194	194	BB	BB	0.0	True
2	925	925	139	139	BB	BB	0.0	True
3	925	925	115	115	BB	BB	0.0	True
4	925	925	101	101	BB	BB	0.1	True
5	925	925	91	92	BB	BB	0.2	True
6	925	925	85	85	BB	BB	0.4	True
7	928	928	79	80	BB	BB	0.8	True
8	960	959	75	76	BB	BB	1.3	True
9	988	987	72	72	BB	BB	1.8	True
10	1014	1014	69	70	BB	BB	2.3	True
11	1038	1038	67	67	BB	BB	2.5	True
12	1061	1061	65	65	BB	BB	2.9	True
13	1082	1083	63	64	BB	BB	2.9	True
14	1103	1103	62	62	BB	BB	3.0	True
15	1123	1123	61	61	BB	BB	2.8	True
16	1142	1143	60	60	BB	BB	2.8	True
17	1160	1161	59	59	B	B	2.7	True
18	1178	1180	58	59	B	B	2.8	True
19	1196	1197	58	58	B	B	2.8	True
20	1213	1215	57	58	B	B	2.8	True
21	1230	1232	57	57	B	B	2.7	True
22	1247	1249	57	57	B	B	2.8	True
23	1264	1266	57	57	B	B	2.7	True
24	1281	1283	57	57	P	P	2.8	True
25	1298	1300	57	57	P	P	2.9	True
26	1315	1317	57	57	P	P	2.9	True
27	1332	1334	57	57	P	P	3.0	True
28	1349	1352	57	58	P	P	3.0	True
29	1366	1369	58	58	P	P	3.0	True
30	1384	1387	58	59	P	P	3.1	True
31	1402	1405	59	59	P	P	3.1	True
32	1420	1424	60	60	P	P	3.1	True
33	1439	1443	61	61	P	P	3.1	True
34	1459	1462	62	62	P	P	3.1	True
35	1479	1483	63	63	A	A	3.1	True
36	1501	1505	65	65	A	A	3.0	True

Raw Score	Pre-SS	Post-SS	Pre-SEM	Post-SEM	Pre-PL	Post-PL	Proportion (%)	Same PL
37	1523	1527	67	67	A	A	2.9	True
38	1547	1551	69	69	A	A	2.6	True
39	1573	1577	72	72	A	A	2.4	True
40	1601	1605	75	75	A	A	2.3	True
41	1632	1636	79	79	A	A	2.0	True
42	1666	1671	84	84	A	A	1.7	True
43	1706	1710	91	91	A	A	1.3	True
44	1753	1758	100	100	A	A	1.1	True
45	1813	1818	114	114	A	A	0.7	True
46	1895	1900	138	139	A	A	0.4	True
47	2032	2037	194	194	A	A	0.2	True
48	2265	2270	351	351	A	A	0.1	True

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