



Self-Directed Curriculum

Scatology

...the study of
scat!



Self-Directed Curriculum Kits

- **Connect With Wildlife**

Students compare and identify twelve different Pennsylvania mammals using their pelts and wildlife background information.

- **Decoy Detective**

Students use the decoys to learn about waterfowl identification and divide birds into a diver or puddle duck classification.

- **Feet Are Neat**

Students explain the role of bird feet in bird survival and compare and contrast bird feet adaptations.

- **Let's Wing It**

Students compare and identify the different types of flight feathers that make up a bird's wing.

- **Scatology**

Students create fake animal scat and learn to identify an animal by its droppings.

- **Skull King**

Students infer from a skull what classification and niche the animal inhabits.

- **The Nose Knows**

Students identify different food smells and will compare the ability to distinguish different smells to animals using their sense of smell to find mates, offspring and food.

- **Wildlife Tracks**

Students use a variety of methods to observe, identify, collect and document tracks of different common wildlife species in Pennsylvania.

Scatology - Teacher's Page

Objective:

Students will create a fake animal scat and learn to identify an animal by its droppings.

Materials Needed:

- Play dough
- Measuring cup
- Oatmeal (non-instant)
- Cocoa powder
- Teaspoon
- Water
- Paper plates
- Paper
- Pencils
- Recipe instructions
- Animal scat identification chart
- Mammal tracks and scat identification chart (by Lynn Levine and Martha Mitchell)

Background:

See article by Naomi Alhadeff, *Scatology - The Science of Scat* (attached).

Activities:

See *Fake Animal Scat* lesson (attached).

Fake Animal Scat

ANIMAL GROSSOLOGY™ in the Classroom

What you do:

Hand out the Animal Scat Identification Charts. Explain to the students that scat is the name for poo that is found in the wild. This chart shows the scat from different wild animals. The first column of animals are herbivores, which means that they only eat plants. The middle column shows carnivores, or meat-eating animals. The last column lists omnivores, or animals that eat a mixture of plants and animals. Ask the students if they notice any similarities among the herbivores. (The scat is more round and it is small.) How about among the carnivores? (The scat is pointed at one or both ends. It is long and thin.) And the omnivores? (This scat is variable. However, it is usually oblong rather than round.)

Tell the students they will choose one animal scat from each of the three categories to model. Distribute the clay or oatmeal poo mixture, sheets of paper, and pencils. Once completed, a scat model is placed on a sheet of paper and labeled with the animal's name and whether it is an herbivore, carnivore or omnivore.

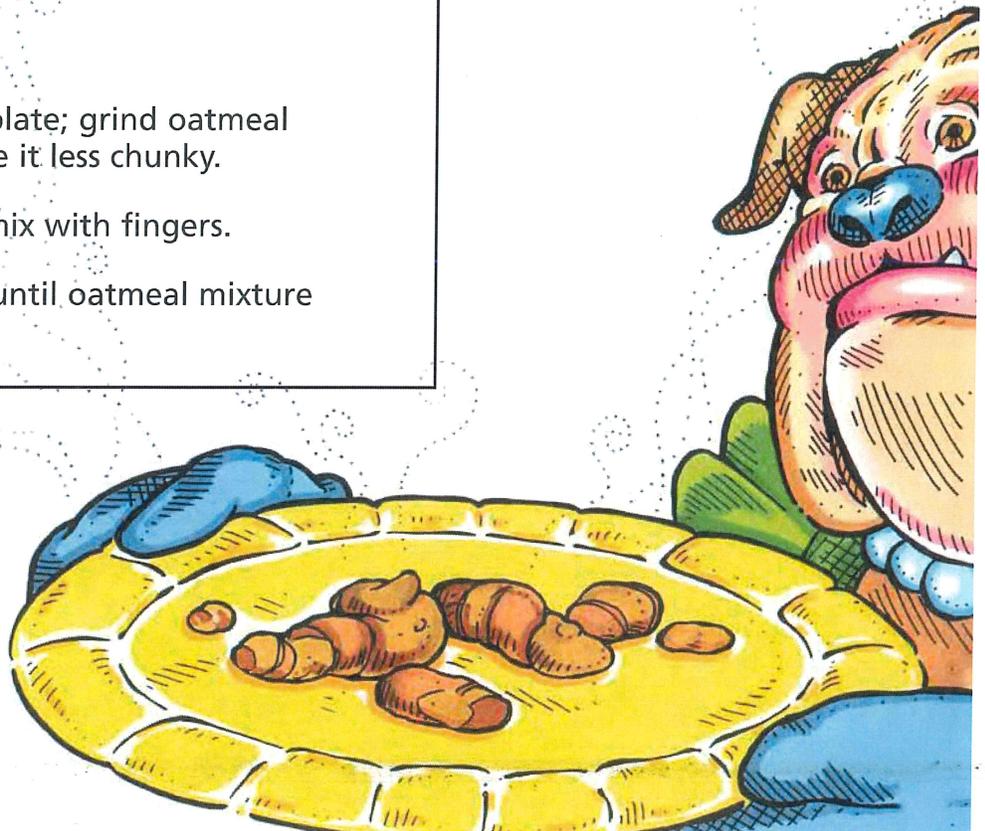
What you need (per student)

- Animal Scat Identification Chart
- 3 sheets of paper
- Pen or pencil
- ½ cup of clay or oatmeal poo mixture

Recipe for oatmeal poo mixture

Measuring cup	Teaspoon
Oatmeal (not instant)	Water
Cocoa powder	

1. Place ½ cup oatmeal on plate; grind oatmeal with your fingers to make it less chunky.
2. Add 2 teaspoons cocoa; mix with fingers.
3. Add water little by little until oatmeal mixture can be molded.



Animal Scat Identification Chart

Herbivore



Rabbit

Round, slightly squashed pellets of finely chewed plant material. Dark brown, tan or black depending on food.

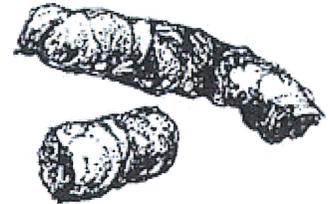
Carnivore



Fox

Note tapered ends and hair in scat. Fox scat will almost always have these two features, and it may be thicker or thinner depending on food, animal, and level of decomposition.

Omnivore



Raccoon

Note blunt ends and uniform thickness, like a Tootsie Roll. Scat will contain berries, seeds, corn and perhaps crayfish parts.



Deer

Vary in size but are generally squashed spheres with a slight taper. There will generally be a small pile. Entirely vegetative and quite uniform in consistency.



Coyote

Very similar to fox, but larger. A large fox and a small coyote may have identical scat.



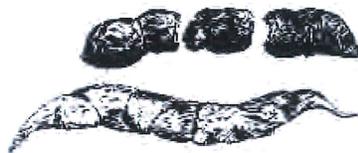
Opossum

Uneven and variable due to changing food sources. May contain hair or berries. Often in small segments. Not commonly found.



Porcupine

Somewhat variable in shape, but usually oblong. Contain a great deal of wood pulp. Individual scat may be connected by thin strands.



Mountain Lion (Puma, Cougar)

Chords with uniform diameter. May contain fur or feathers. Scats rarely seen since cats cover it up.



Rat

Dark brown or black, even consistency. Small, oval pellets.

SCATOLOGY

THE SCIENCE OF SCAT

by Naomi Alhadeff, Nebraska Project WILD

It starts with an "S" and it ends with "T." It comes out of you and it comes out of me! I'm talking about "scat," of course. While the thought of animal poop may seem disgusting at first, hang in there, this will be fun.

Scat is the scientific term for animal poop.

Since every animal eats, every animal also poops. Scientists can learn a lot about an animal by looking at its scat. They can tell what the animal has been eating and they can tell if the animal is healthy or not. And, because different animals make different looking scat, they can tell

what animals are in the area.

If you have ever walked down a well-used trail, you may have easily come across fox scat. Fox scat is long, skinny and a bit twisted. It is often gray or light tan in color. Fox often leave their scat in the middle of the trail as a visible way to mark their territory. Fox scat often contains fur and bits of bone. This is because fox eat a lot of small animals such as mice and rabbits. They may also eat some plants, so occasionally you will find small amounts of plants in their scat.

White-tailed deer scat looks very different. It is small and oval shaped; it looks a lot like a chocolate-covered raisin. Deer are herbivores. This means they eat only plants. So, what do you think you will find in their scat? Bits of plants!

Raccoons are omnivores (omni means "all" and vore means "eater"), so they eat almost anything. Because of this, you will often find bits of berries, speckles of



Sarah Johnson

A raccoon's diet can vary with the seasons. They will eat various ripe berries, corn, dog food and even small animals.



Sam Wilson

A mountain lion's diet can be determined by the scat it leaves behind. This scat was found in the Pine Ridge region of Nebraska and contained an abundance of deer hair.

seeds, and fragments of fur. Sometimes in the early summer, raccoons will eat too many mulberries and their scat will be purple! Raccoon scat is short and rounded; it looks like a small log.

A good example of a true carnivore is a bobcat. Bobcats eat only meat – mainly rabbits. So, just like with fox scat, you will find a lot of fur and small pieces of bone. Bobcat scat is long and skinny, but it is not twisted like the fox's.

Scientists can tell a lot about an animal by looking at its scat. We can also tell how many individual animals there are in an area by using their scat. A great example of this is the mountain lion. The Nebraska Game and Parks Commission wanted to know how many mountain lions were living in the Pine Ridge area of Nebraska, but how do you find a small pile of scat in a huge area? Scat-sniffing dogs, of course! By using these dogs, we found lots of samples of scat. These samples were collected and tested for DNA, which let biologists know how many mountain lions are living in the area.

Now that you know a little about scat, go outside and explore. Look for scat! Can you tell what animal left it behind and what they ate? 🐾

Coyote Scat Recipe

Ingredients:

- 3-4 small Tootsie Rolls
- raisins or cranberries (this represents berries and plants)
- crushed shredded wheat cereal (this represents animal fur)
- broken Wint-O-Green mints (this represents bone fragments)

Step 1: Wash your hands.

Step 2: Put the shredded wheat cereal into a plastic bag and crush it. Break two Wint-O-Green mints into several small pieces.

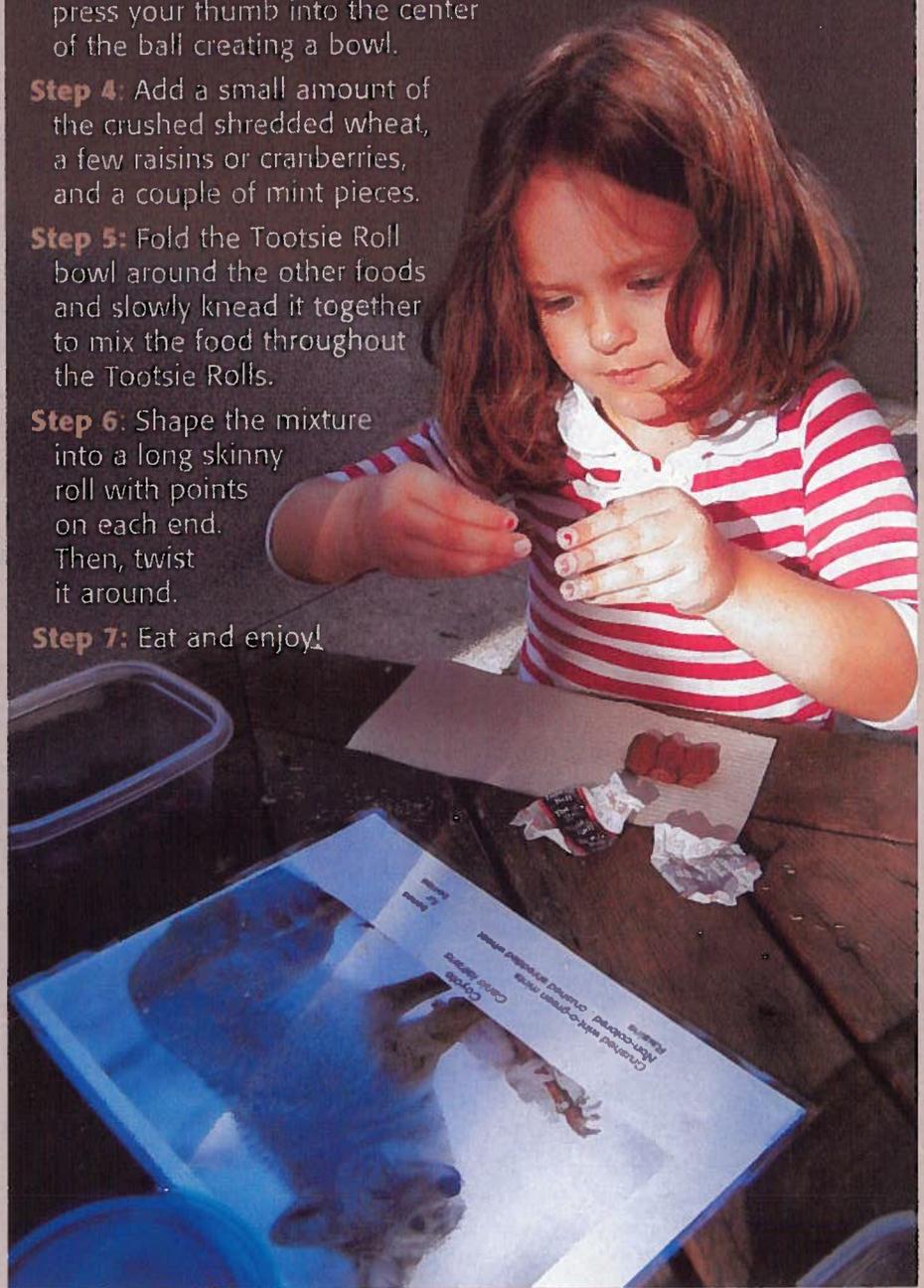
Step 3: Hold the Tootsie Roll in your hands to warm them up. Once soft, roll the three Tootsie Rolls into one large ball. Then press your thumb into the center of the ball creating a bowl.

Step 4: Add a small amount of the crushed shredded wheat, a few raisins or cranberries, and a couple of mint pieces.

Step 5: Fold the Tootsie Roll bowl around the other foods and slowly knead it together to mix the food throughout the Tootsie Rolls.

Step 6: Shape the mixture into a long skinny roll with points on each end. Then, twist it around.

Step 7: Eat and enjoy!



Lindsay Rogers

Edible Playdough Recipes For Making Scat Models

Chocolate Play Dough (dark brown)

(10 scat/batch, three batches for a class of 20 or as needed)

- 4 tablespoons Hershey's Special Dark cocoa powder
- 2 cups powdered sugar
- 1/2 cup flour
- 1/4 cup of honey or light corn syrup
- 1/4 cup unsalted room temp butter

OR

- 3 cups powdered/icing sugar
- 3/4 cup powdered milk
- 6 tablespoons Hershey's Special Dark cocoa powder
- 1/2 cup soft butter
- 1/2 cup of light corn syrup

Add ingredients to food processor and pulse, adjusting as necessary for proper consistency (can be mixed by hand, but this gets MESSY). "Serve" on waxed paper or paper plates for kids to knead and shape. Refrigerate when not in use.

Peanut Butter Play Dough (light brown)

- 1/2 cup Sun Butter (sunflower peanut-free butter)
- 1/2 cup dry non-fat milk
- 1/2 cup honey

Combine everything, adjust ingredients to proper consistency. Turn out onto wax paper to use. Refrigerate when not in use.

Peppermint Play Dough (white)

- 1/3 cup softened butter
- 1/3 cup light corn syrup
- 1-2 teaspoons peppermint (or other) extract
- 1/2 teaspoon salt
- 1 lb. powdered sugar/icing sugar

Mix together the butter, corn syrup, peppermint, salt and any coloring. They need to be well combined.

Add the powdered sugar and mix it in. Tip mixture out onto a surface dusted with more powdered sugar, and knead into a smooth dough. Store in plastic wrap in the refrigerator if not using immediately.

Cream Cheese Play Dough (white)

- 8 oz. package of cream cheese
- 1/2 cup of non-fat dry milk
- 1 tablespoon of honey

Combine everything, adjust ingredients to proper consistency. Turn out onto wax paper to use. Refrigerate when not in use.

Mammal Scat of North America



Specimens shown twice actual size



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