

School Bus Steps

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Problem: School bus steps are too high off the ground

Background

- Due to the small space available, school bus steps must be tall and narrow, as well as have enough clearance off the ground
- Some may have trouble navigating these stairs
 - Young kids with small legs
 - Those with a disability that affects their dexterity, balance, or gait
 - Anyone who may have knee problems



Partnership

- Reached out to several possible partners to get an idea of the issues that people faced while getting on or off the bus.
- Received feedback the the bottom step to the ground was the most difficult

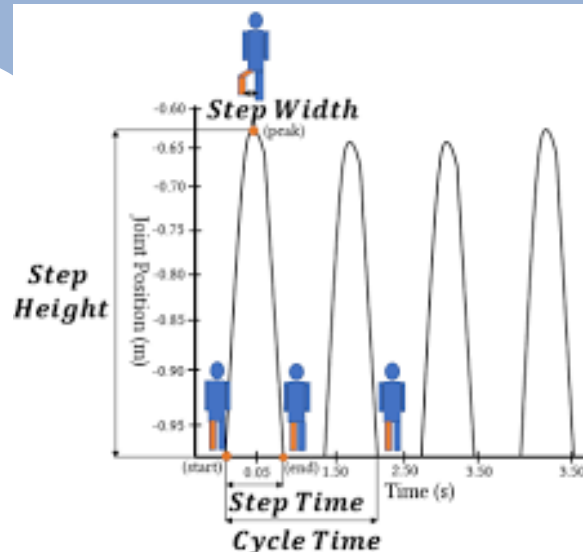


(Click to hear audio!)

Professional Testimonies

Description

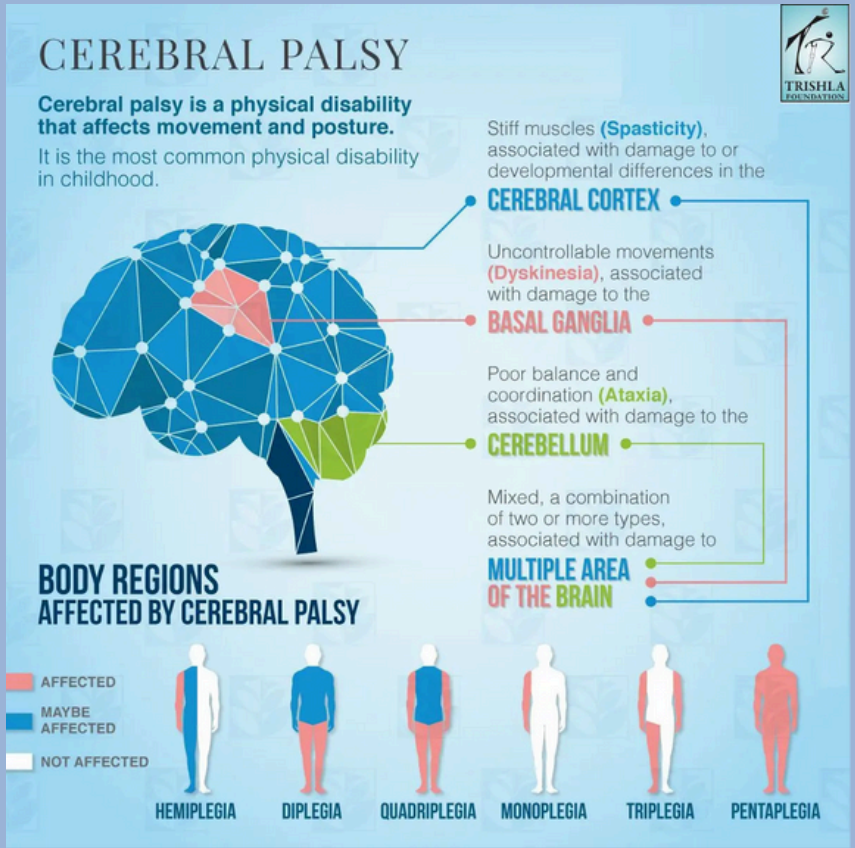
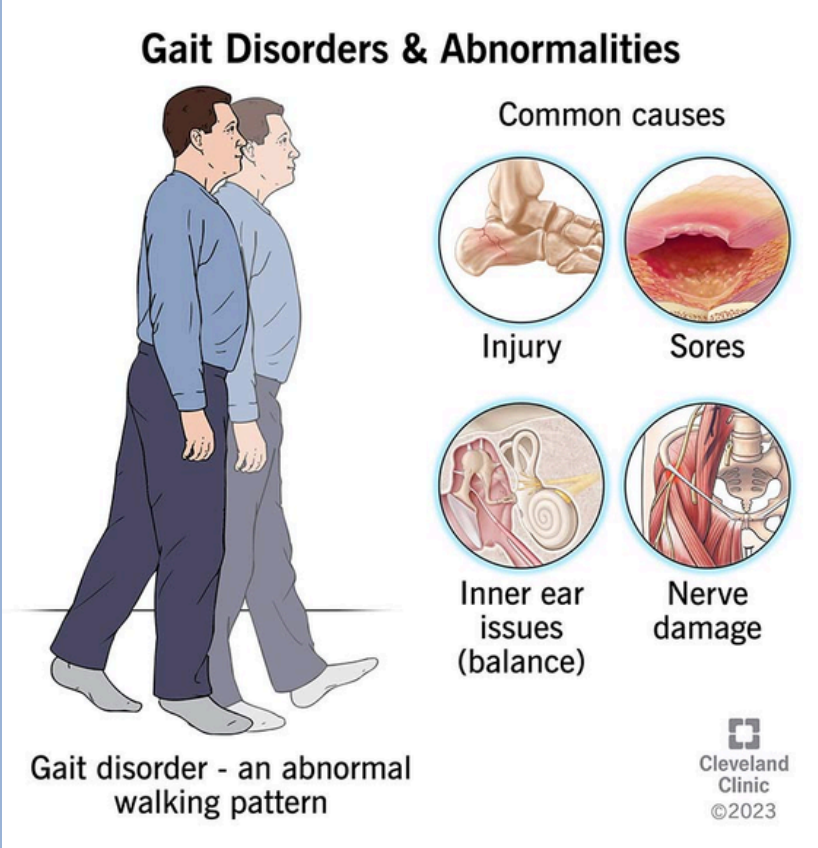
Our solution is a fold-able scissor stair that magnetically attaches onto the last bus step to provide an extra step when entering or exiting the bus.



Works Cited

Need for Solution

- School bus steps must be at least 16" off the ground, while some are even 18" off the ground, which is much too high for young kids to enter the bus. (McFadden, The New York Times)
- The height of these steps could easily cause students to fall, leading to potential serious injuries (Mrs. Reppert, Special Ed Teacher).
- About 12-16% of Pennsylvanians have some type of low dexterity or issue that could affect their ability to get on or off the bus
- Kids with disabilities may have trouble gaining confidence, or desired independence in these situations (Many, 2025)
- Other than vehicle collisions, entering and exiting the bus is the most dangerous part of being on a school bus. (Allen et al, 2025)



Existing Solutions

- These prior solutions have been created to help assist animals and people while going up the steps and to help ensure a safer outcome.
- They are all adjustable in height in hopes to prevent any injuries that may take place while going up or down steps.
- Collapsible dog steps (Amazon)
- Foldable ladders
- Foldable platform step
- The lift on the school busses



Universal Design



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Digital Research Poster

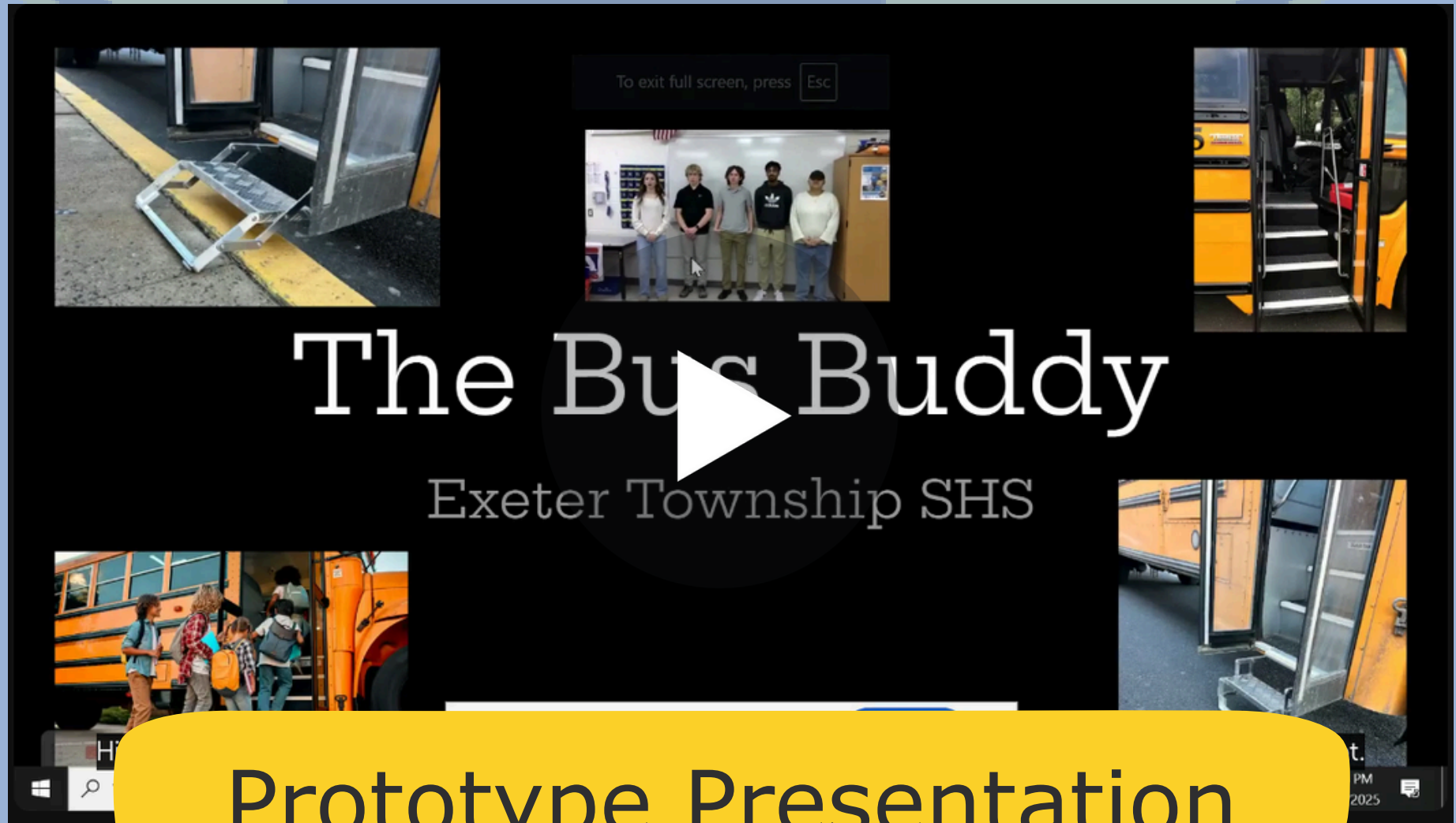
Our Prototype

The Bus Buddy

Construction Process

Demonstration Video

Budget



Prototype Presentation