STEM Lessons for Pedestrian Safety: Raise Them Up!





Raise Them Up!

People crossing the street need to be seen by drivers to cross safely. Students will discover how drivers of different sized vehicles may see people outside the vehicle. Students will learn about raised crosswalks and how they can make drivers slow down and make people more prominent in the driver's field of vision.

Format: 45-60-minute activity in a classroom setting

Audience: Suitable for all ages

To Do in Advance

✓ A week ahead, ask students to be on the look-out for examples of raised crosswalks.

✓ Identify nearby raised crosswalks in the

community.

 Review "The Why and How Behind the Concepts" in the Primer

Supplies

- Computer projection
- Masking tape OR yardsticks (or ruler marked out on the wall)
- Calculators (1 per student group)
- Masking tape, duct tape, and/or chalk
- Air dry clay or play-doh
- Crayons or colored pencils
- Clip board, paper, pencils/markers
- Optional: Large pieces of cardboard (e.g., collected from a big box/wholesale store)
- Optional: Toy cars
- Optional: String

Supplemental Materials Provided

- ► Visual aid: PowerPoint file with images of raised crosswalks in different settings
- Handout: Street segment (Activity Part 2, inside)
- ► Handout: Cut-outs of people (Activity Part 2, inside)

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Introduction to Concept and Activity

These concepts should be reinforced by the lesson leader the during activities.

- It is critical for drivers to see people who are about to or are actively crossing the streets.
 Some people take longer to cross the street or are harder to see because they are shorter.
- Lots of local trips to community destinations are short and it would be best to just walk or bike there but the ability to cross the street safely is important.
- Not all drivers are looking for people when they should be and sometimes drivers are going faster than they should.
- Lots of people do not drive or have a car so they need to have safe places to cross the street so they can get places or to a bus stop.
- Raised crosswalks are traffic calming measures that allow people walking to cross at the same level as the sidewalk, without needing to step (or roll) down into the street. Raised crosswalks offer a more comfortable crossing experience for people walking while reducing the speed of drivers at locations where people are likely to cross. Each long edge of the raised crossing has a ramp so drivers have to drive up on to the flat part of the crossing and then back down again.



Activity Part 1 (5 minutes):

Pose some silly questions and then facilitate brief discussion:

- Why did the chicken cross the road?
 A: To get to the other side.
- 2. Why did the fish cross the road? A: To get to its school.
- 3. Why did the horse cross the road? A: To get to its nay-borhood.
- Why did the chicken stop crossing the road?
 A: It got tired of everyone making so many jokes.

Sample discussion:

Crossing the road is no joke..... People need to get to key neighborhood destinations, and just like the chicken, fish and horses, many people can't or don't want to drive and need to cross the road so that they can get places.

If you were crossing the street and a big car was driving straight towards you, would you prefer to be a chicken or a horse?" (Listen to the silly ideas).

One good reason that you prefer to be a horse is that you are much taller and bigger; drivers may not see that itty-bitty chicken in the crosswalk but should definitely see that much taller horse. How about if we raised the crosswalk so the chicken and all the rest of us can be seen better?



Activity Part 2 (10 minutes): Ask students to construct a raised crosswalk:

Inside location: using the handout of a street, build the sidewalk and crosswalk out of air-dry clay or play-doh. Students may also use toy cars and cut-outs of people.

Outside location: depending on the surface use masking tape, duct tape, or chalk to mark off a street and crosswalk. Student can build the crosswalk out of lunch trays or other available sturdy materials such as gym/yoga mats.

A real-world crosswalk on a two-lane street is 10 feet wide and 22-22 feet long. Scale down as needed given your chosen supplies and space constraints.





Activity Part 3 (5 minutes): Ask students to think of somewhere they have seen raised crosswalks in their community or a place they have

visited. (It is likely that no student will have an example). Ask students if there is a location where they would like to have a raised crosswalk (e.g., school parking lot, neighborhood street, entrance to local park). Use the visual aid to show images of real-life crosswalks. Optional: use Google Earth to navigate to raised crosswalks you know of or local ones mentioned by students.

> Activity Part 4 (10 minutes): Switch focus to vehicle height in relation to the height of people crossing the street. Aggregate the height of every student in the group (e.g., student provides their height, students measure each other, or you assist with measuring). Ask students to calculate the median height and average height for the group.



Activity Part 5 (15 minutes):

Provide the height for at least four different vehicle types:

- ► 54 inches: 2-door coupe (e.g., Ford Mustang)
- 58 inches: 4-door sedan
 (e.g., Toyota Camry or Honda Accord)
- 65 inches: small SUV (e.g., Subaru Crosstrek or Toyota Rav4)
- 70 inches: minivan (e.g., Honda Odyssey or Dodge Caravan)
- 75 inches: truck (e.g., Chevrolet Silverado or Dodge Ram 1500)

Option to mark these off on the wall or door using masking tape. Ask students to calculate the difference between the vehicle heights and the average/median student height. Option to use string to demonstrate the sightline from the approximate location of the driver to the student height. Facilitate discussion about how the ability to see and be seen changes with the type of vehicle and whether they factor in a raised crosswalk.

Optional: This lesson could be adapted for an "all-comer" setting (e.g., family STEM night) and focus on the vehicle height portion of the lesson. Car height could be communicated with cardboard cut-outs.

Optional: Building on Activity Part 3, students develop a "top ten list" of locations where they would like to see a raised crosswalk and then vote on the first choice. Guide a discussion about who the students could write a letter to about getting that raised crosswalk installed.

Optional: Older students may be guided through a discussion about when/why raised crosswalks may not work in all situations (e.g., driveways; drainage; implications for other users – bicyclists, large trucks, EMS, and differences in application along a segment or at intersections). (This could be communicated through cards that get flipped over and then students are given 10 seconds to say why that element will not work with raised crosswalk—if they cannot answer the card gets "stolen" by someone else who comes up with a reason. Whomever names a good reason, keeps that card for points).

Optional: Older students (4th grade and up) with access to computers may be asked to use Google Earth to identify places where they would like to install a raised crosswalk in their community or they may be asked to navigate to existing raised crosswalks using coordinates you provide.

Optional: Older students could be asked to use the internet to research the height of different vehicles. Students could then compare that information to their own height, average height of their class, etc. They could be asked to draw or model the differences and relate it back to sight lines (this would involve estimating the driver's eye-level and the length/height of vehicle hoods).



Student Handout: Activity Part 2 - Street





Student Handout: Activity Part 2 - Cut-outs



Directions: Color & Cut





Student Handout: Activity Part 2 - Cut-outs



Directions: Color & Cut



