Changing Force 1 (K-5)

Materials

- Weights (marbles or similar)
- Slider with weight bag attached (furniture slider with string, tape, and snack sized bag for marbles)
- Stopwatch or watch with second hand

Procedure

1. Add enough weight to the bag so that it slowly pulls the slider across the table.

2. Record the number of weights in the correct column on the data table.

3. Conduct three trials and record the time it takes for the slider to be pulled across the desk for each trial.

4. Add more weight to the bag and repeat the process.

		Time		
Test	Number of weights	Trial 1	Trial 2	Trial 3
1				
2				

What do you notice about the time it takes for the slider to be pulled across the desk when the weight is increased?

_____

_____

Based on what you noticed, predict how long it will take for the slider to be pulled across the table when more weight is added.

Test 3 _____number of weights _____predicted time

Test 4_____ number of weights _____predicted time

The weights are a force pulling on the slider. How does increasing the weight (force) change the motion of the slider?

1. Once you have completed the lab activity, use pages 7 and 8 of the disciplinary core idea progressions to identify the disciplinary core ideas used in this activity. List these below:

2. Use the NGSS Crosscutting Concepts matrix to identify the crosscutting concepts that are related to this activity. List these below.

3. What could you do to help students make connections between the activity content and at least one crosscutting concept?

4. Select one of your crosscutting concepts you listed above and indicate how you could make the connection between the disciplinary core idea(s) and the crosscutting concept you selected.

5. Use the Science and Engineering Practices matrix to identify the practices you engaged in during the activity. List these practices below. For each practice, describe what you were doing as you were engaged in that practice.

6. Select one SEP and describe how you could make the use of that practice more explicit for students.

7. Summarize your work on a piece of chart paper and place it on the wall for a gallery walk.