



Benefits of Play: Communication, Cognitive, Creative, Physical

Explore the concepts of potential and kinetic energy by measuring a toy car's travels from various ramp heights.

STEAM Skills: Science, Technology, Engineering, Arts, and Math

Grades: 3, 4, 5

Materials:

- small toy cars (1 per student)
- car tracks (3 per group)
- 3 textbooks
- ruler or measuring tape (1 per group)
- paper and pencils



Step 1: Divide your class into small equal groups of students. Have each group of students draw a car on a ramp.

Step 2: Students will plan to make three ramps - one shorter, one medium height, and one taller - and hypothesize which ramp height will make their car go the farthest.

Step 3: Students begin creating their group's ramp using one textbook for height. As students add a second and then a third book they will measure and record each of ramp's heights and the distances their car traveled on the ramp.

Step 4: Teachers continue the lesson by introducing and demonstrating the concepts of potential and kinetic energy. Students will take turns shouting "Potential!" as they place their cars in a position of potential energy at the top of the ramp. Students will then shout "Kinetic!" and demonstrate kinetic energy by releasing their car on the ramp.

Step 5: Let the students take control and become the engineer adding length and/or height to their ramps to try and create the greatest distance and the fastest speed.