

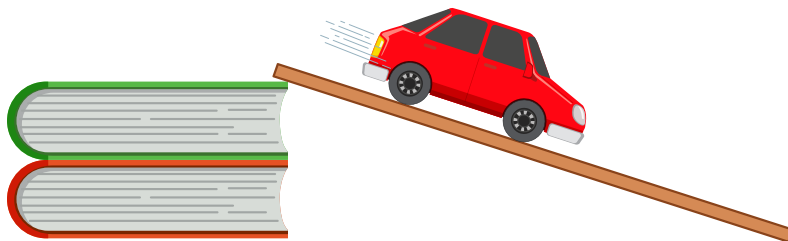
Push and Pull Ramp Experiment

Activity Overview

Explore how pushes and pulls affect motion with this simple ramp investigation.

Supplies

- toy cars
- small piece of string or yarn
- board or cardboard for a ramp
- books or blocks to raise the ramp
- tape



Setup

Create a ramp by placing one end of the board on a stack of books. Tape a small piece of string to the toy car so it can be pulled back up the ramp. Leave space at the bottom so the car can roll across the floor.

Investigation

Place the toy car at the top of the ramp and release it without pushing. Watch how it rolls down the ramp.

Next, gently push the car and observe how it moves.

Try pushing the car softly and then harder. What changes?

Now place the car at the bottom of the ramp and pull it upward using the string. You can also change the ramp height by adding more books to make it steeper.

NGSS Guiding Questions

What happens when we push the car gently?

What happens when we push the car harder?

How does the ramp change how the car moves?

What happens when we pull the car back up the ramp?

How do pushes and pulls change motion?

The Science Behind It

Pushes and pulls are types of forces. A force is something that can change how an object moves. A push moves an object away from something, while a pull moves an object toward something. Forces can make objects start moving, stop moving, speed up, slow down, or change direction. When the ramp is steeper, gravity pulls the car downward more strongly, causing the car to move faster.