

# Friction is forceful



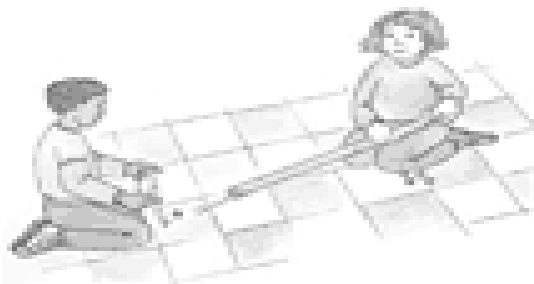
## Background knowledge

When you kick a ball, it does not move forever. It gradually slows down and stops. The force that makes the ball slow down is *friction*. Friction is a force that opposes motion. Friction occurs between two surfaces that are touching, such as the surface of the ball and the ground. Some surfaces produce more friction than others.

## Science activity

Jamal and Megan rolled marbles down a tube and measured how fast each marble rolled. They tried rolling the marbles over different surfaces. They kept the angle of the tube the same each time. Here are the results.

Surface	Distance marble rolls
Gravel path	21 cm
Grass	3 cm
Kitchen floor	165 cm
Carpet	32 cm
Pavement	85 cm



Which surface produced the most friction?

How was this surface different from the other surfaces?

## Science investigation

On which surface does a car travel the fastest? Create three ramps out of cardboard or wood. Cover one ramp with fabric or sandpaper. Cover the second with aluminum foil and the third with a material of your choice. Use a book to make an incline. Obtain a small toy car. Design and conduct an experiment to answer the question.