Fun Fast Friction

Friction is a force between two objects that are touching, like your shoes and the ground or you and the slide at a playground. Friction usually slows or stops movement between the two objects.

Materials:

- Three Flat Surfaces:
  1. Smooth
  2. Lightly Textured (unpainted wood)
  3. Rough (fuzzy, sandpaper, or bumpy)
- Small Toy Car or Ball

Procedure:

1. Observe each flat surface. *What do you notice?*

1

2. Prop up the flat surfaces so they are in a ramp position. This can be done one at a time if needed.

2

3. Make a hypothesis! Think about what will happen when you let the toy car or ball roll down the ramps. *What do you think will happen?*

3

4. Place the toy car or ball at the top of a ramp and let it roll down the ramp. Observe how fast it goes.

4

5. Repeat step 2 with each surface type. *What did you observe? Did the car or ball roll down each ramp at the same speed? Was your hypothesis correct?*

5

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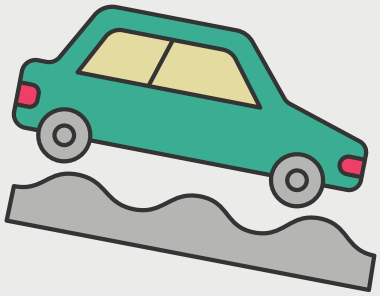
WHAT'S HAPPENING?

The grooves in the rough ramp and even the small dips in the lightly textured ramp slow down the motion of the toy car or ball because of friction. This is different from the smooth ramp which allows the toy car or ball to move with less friction.



Hiking boots have thick rubber soles with deep treads. This helps protect your feet and prevents slipping on slippery surfaces because it increases the friction with the ground. *Where else do you think you can find this happening?*

DID YOU KNOW?

A **physicist** is someone who studies and how objects in the world interact with other objects! If you liked exploring this activity, maybe physics is for you!