

ACTIVITY!

Inquire & Investigate



VOCAB LAB



Write down what you think each word means. What root words can you find to help you? What does the context of the word tell you?

energy, friction, fundamental science, gravity, matter, and physics.

Compare your definitions with those of your friends or classmates. Did you all come up with the same meanings? Turn to the text and glossary if you need help.

To investigate more, experiment with different objects sliding down the ramp. What happens? What conclusions can you make?

EXPLORE FRICTION ON A RAMP

One part of physics that affects everything you do is friction! Friction is a force that occurs when two surfaces rub against each other. Smoother surfaces generate less friction, while rough or bumpy surfaces generate more friction. Check it out!

- **Create a ramp with stacked books and plywood or cardboard.** Make sure there is empty space at the end of the ramp.
- **Starting with the smooth plywood or cardboard, release a toy car from the top of the ramp.** Measure how far the car travels from the top of the ramp to where it stops. Record the results in your science notebook. Repeat two more times, and, using the three distances, calculate the average distance traveled by adding up all of the distances and dividing that number by the number of runs you did.
- **Place something bumpy, such as sandpaper or a towel, on the ramp's surface.** Tape it down so it doesn't move. Repeat running the car down the ramp over the test surface three times and find the average distance.
- **Repeat this process for more test materials, such as carpet pieces or clothing.** Calculate the average distance traveled for each material.
- **Compare your results.** How did the car travel on each surface? On which surfaces did it travel farther? On which surfaces did it travel less? Based on your experiment, what did you learn about the friction of the different test surfaces?