

Different things affect how fast you move down a slide. The surface of the slide, the clothes you are wearing, how heavy you are, and the amount of your body touching the slide all make a difference. Whether the slide is flat, wavy, or spiral makes a difference too. In this activity, you can see if different slides cause different rides.

Materials:

- Sliding boards (straight, spiral, wavy)
- 2 plastic containers with lids (same size and shape)
- Sand, gravel, or pebbles

Procedures:

1. Place two empty plastic containers with the lids on near the top of the slide. Let them go at the same time and see if they go about the same speed.



2. To test to see if weight makes a difference, fill one container with sand or gravel. Place the lid on tightly. Now race them down the slide the way you did before. Which one was the winner? Was there a big difference in how fast they went or was it pretty close? Repeat the race but switch the position of the containers. (The one on the right before should be on the left). Try it two more times. Does the same one win each time?
3. Now try racing the heavy and light containers down a wavy slide. Do they seem to go at about the same

speed or did one go faster than the other? Repeat the race but switch the position of the containers. (The one on the right before should be on the left). Try it two more times to be sure.



4. Now try the same set of experiments on a spiral slide. Repeat the race but switch the position of the containers. (The one on the right before should be on the left). Does the position of the containers seem to matter? Does weight seem to matter?



Think about this ...

It's hard to set up a fair race on a spiral slide because the container on the outside of the curve actually has a farther distance to travel. How could you set up a fair test to see whether the heavy or light container is faster on the curvy slide? Hint: Could a stop watch help?

Where's the Chemistry?

The two empty containers should slide down a regular slide at about the same speed. The heavier container should be a little slower because its weight produces more friction on the slide. On the wavy slide, the heavier container should win because its weight helps it to keep moving over the flat areas of the slide while the lighter container slows down more over these flat areas. The spiral slide is tricky because the container on the inside of the curve has a shorter distance to travel so it should win. You should send them down separately and time each one. When we do it, the heavy one always gets to the bottom in a little less time than the lighter one.



The American Chemical Society develops materials for elementary school age children to spark their interest in science and teach developmentally appropriate chemistry concepts. The *Activities for Children* collection includes hands-on activities, articles, puzzles, and games on topics related to children's everyday experiences.

The collection can be used to supplement the science curriculum, celebrate National Chemistry Week, develop Chemists Celebrate Earth Day events, invite children to give science a try at a large event, or to explore just for fun at home.

Find more activities, articles, puzzles and games at www.acs.org/kids.

Safety Tips

This activity is intended for elementary school children under the direct supervision of an adult. The American Chemical Society cannot be responsible for any accidents or injuries that may result from conducting the activities without proper supervision, from not specifically following directions, or from ignoring the cautions contained in the text.

Always:

- Work with an adult.
- Read and follow all directions for the activity.
- Read all warning labels on all materials being used.
- Wear eye protection.
- Follow safety warnings or precautions, such as wearing gloves or tying back long hair.
- Use all materials carefully, following the directions given.
- Be sure to clean up and dispose of materials properly when you are finished with an activity.
- Wash your hands well after every activity.

Never eat or drink while conducting an experiment, and be careful to keep all of the materials used away from your mouth, nose, and eyes!

Never experiment on your own!

For more detailed information on safety go to www.acs.org/education and click on "Safety Guidelines".

