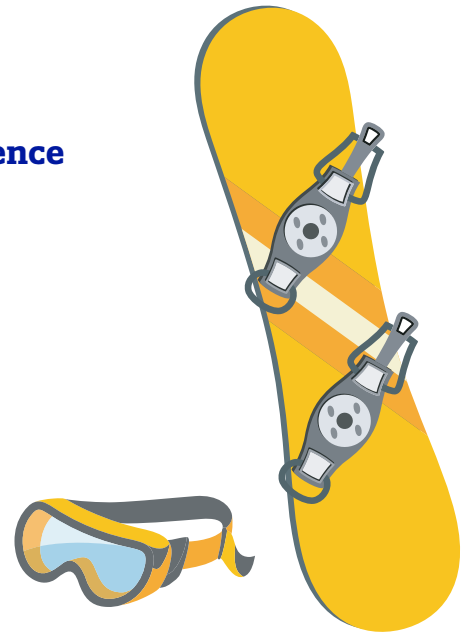


Slippery Science

Get ready for the Winter Olympics with some slip-sliding science

Collect

- 5 large plastic lids from yogurt containers
- A bunch of washers or pennies
- Tape
- Scissors
- A variety of materials such as sandpaper, wax paper, newspaper, fabric
- Baking sheet
- Water
- A stack of books



Prepare a track

1. Fill a large baking sheet with water.
2. Place it in the freezer (or outside if it's cold enough) overnight until the water is frozen. This will be your test track!

Construct your sleds

3. Use tape to attach a few washers or pennies to the inside of each of the plastic lids to add weight.
4. Attach a different material to the bottom of each lid. Secure with tape.

Hit the slopes!

5. Prop one end of the baking sheet up with a few books to make a slope.
6. Set the sleds at the top of the slope one at a time and let them slide down to the bottom. Which ones slide faster? Which ones slide slower? How does the bottom of the sled affect how it slides down the slope?

How does it work?

The sled slides down the track because the weight of the sled is being pulled down the slope by gravity, but the type of material you used for the bottom of the sled will affect how fast it slides down the track due to friction. Friction is a force that occurs when one object rubs against another. In this activity, the bottom of the sled is rubbing against the ice as it slides down the slope. Materials that are rough will have a greater amount of friction, and materials that are smooth will generate less friction and slide more quickly.

What's the sports connection?

Friction plays a large role in many winter sports. If you look at the tracks on the bottom of speed skates, bobsleds, and luges you will notice that tracks are typically smooth and thin. This minimizes the amount of contact between the tracks and the ice which decreases the amount of friction. Snowboarders or skiers may use wax to decrease the amount of friction between their boards or skis and the snow to help them go faster. Even the pebbled ice that covers a curling rink is designed to reduce friction by reducing the amount of contact between the curling stone and the ice!

