DIY Hovercraft

FUN FACT

Lee-on-the-Solent in England is where you can find the Hovercraft Museum which holds the world's largest collection of hovercraft designs, including some of the earliest and largest hovercrafts ever created!

FRICTION

Friction is the resistance that one surface or object encounters when moving over another surface or object. Different types of materials create varying amounts of friction. Friction can be found in our everyday lives and allows us to stand without falling, drive our cars safely down the road, and allows us to even grip a racket when playing tennis.

MATERIALS

- Blank CD
- Balloons
- Glue gun
- Bottle lid (push-up type)
- Adult helper

DIFFICULTY

VISIT

DIYSCIENCETIME.ORG

FOR MORE SCIENCE FUN!

Why are friction jokes hard to tell at school?

*Answer on the next page

ALABAMA PUBLIC TELEVISION

DIY SCIENCE TIME

"Science is wherever YOU are!"

*Joke Answer -
Most teachers won't let them slide!

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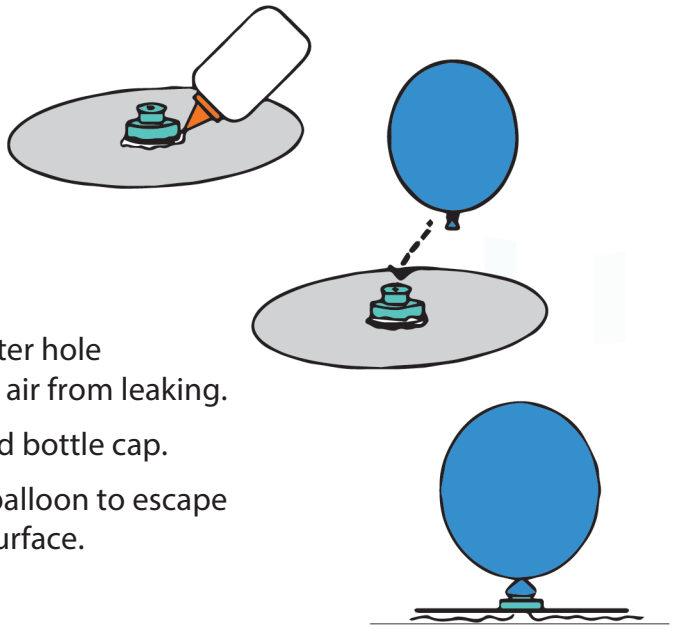

EXPERIMENT

Step 1: Gather materials.

Step 2: Use glue to fasten the bottle cap directly over the center hole of the CD. Be sure it is sealed completely to prevent air from leaking.

Step 3: Blow up and connect a balloon to the top of the closed bottle cap.

Step 4: Open the bottle cap, allowing the air from inside the balloon to escape and observe how the hovercraft behaves on a flat surface.

WHY IT WORKS

Hovercrafts work by using air to lift the craft off of the surface. As the balloon deflates, the air is pushed out through the bottom of the CD. Because of the weight, shape and texture of the CD, a thin layer of air is formed between the CD and the smooth table top surface. This layer of air reduces the friction between the CD and the surface allowing the CD to move easily and hover over the table.

EXTEND YOUR LEARNING

- What would happen if you used a different shaped balloon?
- Will it work with a heavy plastic plate, or cardboard instead of the CD?
- How far can you get your hovercraft to go? What adjustments can be made to make it move faster?
- Can your hovercraft glide across any other surfaces? Carpet? Tile? Cement?
- How much weight can your hovercraft carry?

WORKFORCE CONNECTION

Fire-rescue workers use amphibious hovercraft to rescue people in flooded, muddy or icy areas. The hovercraft can easily go up to people's homes to rescue them right at their front door and works much better than a helicopter for this purpose. Fire and rescue workers also need to understand how to operate and maneuver the craft which means part of their job is to practice these rescue scenarios in the event a real situation arises.