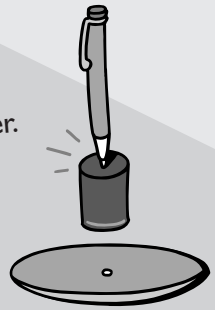
Hovercraft

What You Need

- ballpoint pen
- large plastic plate
- film canister
- 12" round balloon
- poster putty (sold in office supply stores)



1 Use the **point** of the pen to **poke** a small **hole** in the center of the plate.

2 **Poke** another hole in the **bottom** of the film canister.

3 **Put** some poster putty around the **bottom** of the film canister. Make sure you **don't cover** the hole.

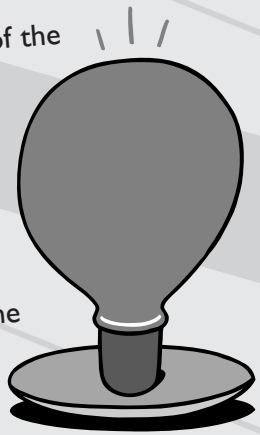
4 **Stick** the film canister to the **middle** of the plate. Try to **line up** the **holes** in the plate and the film canister.

5 **Blow** up the balloon. **Twist** the end and **pinch** it shut.

6 Work with a friend to **put** the balloon on the film canister. One person can **hold** the neck of the balloon so no air escapes. The other person can **stretch** the end of the balloon over the film canister.

7 **Place** your hovercraft on a smooth surface, like a table or the floor.

8 **Let go** of the balloon. Then **gently tap** the side of the plate. **What happens**?



Engineering Scoop

Put a **plain plate** on a table and **gently tap** the side of the plate. It doesn't move very far, does it? That's because of **friction** between the bottom of the plate and the table. Friction is a **dragging force** that happens when objects slide against each other. Why does your hovercraft **glide** more easily? Because it's **resting** on a cushion of air! When you let go of the balloon, the air **flows** under the plate. The **layer of air** under the plate **takes up space** and keeps the plate and table from rubbing together. When a plate slides on top of air, there is **less friction** than when it slides on the table.

Redesign It!

Change the design of your hovercraft. How can you make the hovercraft travel a **long distance** in one tap? How can you make one that **lasts a long time** before the air runs out? Can you think of a way to **steer** your hovercraft? Choose **one thing** to change, like the size of the plate or the hole in the film canister. Then **test it** and **send** your results to ZOOM.

Sent in by Dene D. of Woodbridge, VA