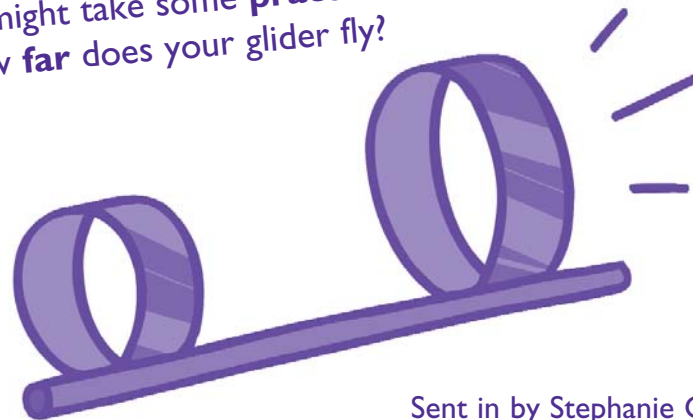# Hoop Glider

What You Need

- paper
- ruler
- scissors
- pencil
- nonbendable, plastic drinking straw
- tape

Engineering Scoop

If you throw a **plain straw**, it doesn't go very far. But when you add **paper hoops**, the straw glides through the air. That's because the hoops act like **wings**. Things that **fly**—like insects, birds, and airplanes—all have wings. But wings are not all the same **shape** and **size**. Different wings can be better for different kinds of flight. For example, an eagle has **long, wide wings** that help it glide. An airplane has **wings with small flaps** that move up and down to turn the plane. Try **changing** the wings on your glider. How does it **fly** with different wings?

1 **Cut** two strips of paper. Make one strip **1 inch wide and 5 inches long.** Make the second strip **1 inch wide and 10 inches long.**

2 **Curl** each paper strip into a hoop. **Tape** the ends together. Now you have a big hoop and a small hoop.

3 **Tape** the small hoop to one end of the straw.

4 **Tape** the big hoop on the other end of the straw. Make sure the big hoop **lines up** with the small hoop.

5 **Hold** your Hoop Glider in the middle of the straw, with the small hoop in front. **Throw** it gently like a spear. It might take some **practice** to get the hang of it. How **far** does your glider fly?

Change your glider so that it flies the longest possible distance. What happens if you make the **straw smaller**? What happens if you change the **size of the hoops**? Or, what happens if you add a **third hoop**? Choose one thing to change (that's the **variable**), and make a prediction. Then **test it** and **send** your results to ZOOM.

Sent in by Stephanie C. of Milton, NH

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