



## The Wright Stuff: The Science and History of Flight

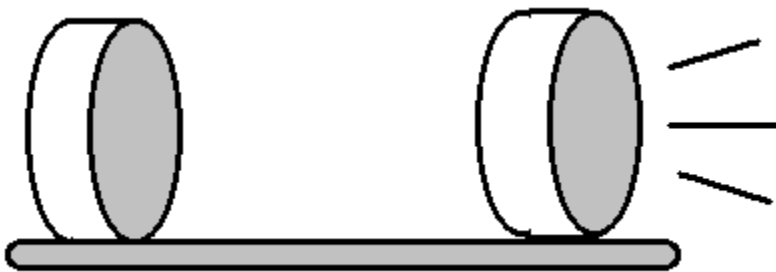
### Grade 4 - 8

#### Suggested Classroom Activities

##### Hoop Glider

What you need: paper, ruler, scissors, pencil, non-bendable straw, tape

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?
6. Change your glider so that it flies the longest possible distance. What happens if you make the straw smaller? or change the size of the hoops? or add a third hoop? Change one variable, make a prediction, then test it to get your results.



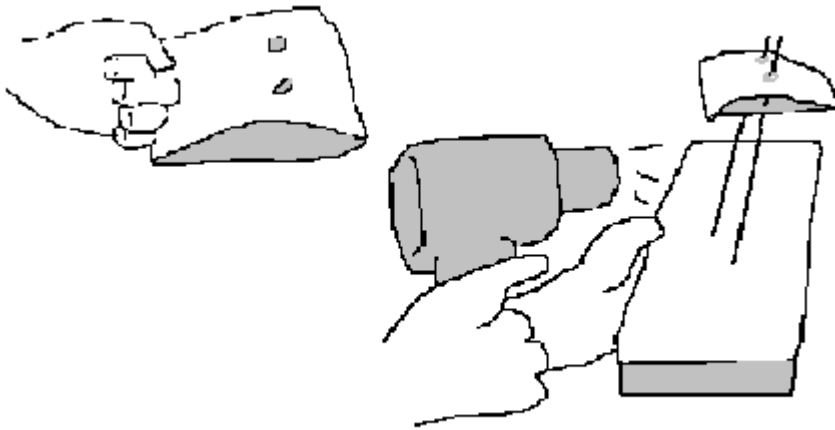
##### Wing it!

A wing has a special airfoil shape. An airfoil “foils” the pulling-down force of gravity by creating the upward force of flight - lift. Build your own airfoil and then find the best way to fly it.

What you need: index card, tape, hole punch, scissors, drinking straw, 2

bamboo skewers, base to hold the skewers like styrofoam or cardboard.

1. Fold the card in half. Tape the top half of the card down to the bottom half of the card so that about    inch of the bottom shows. This is an airfoil shape.
2. Use the hole punch to put two sets of holes in the thickest part of the airfoil.
3. Cut the straw so you get two pieces 2 inches long. Fit these mini-straws through the holes in the airfoil.
4. Set the airfoil in the base and slip a skewer through each of the mini-straws and into the base.
5. Use the hairdryer to move air over the airfoil and create lift. Try it both ways, with the flat side of the airfoil on the bottom and on the top. In which position does the airfoil best climb the skewers?



## Resources

**Zoom into engineering:** [pbskids.org/zoom](https://pbskids.org/zoom)

**The Wright Brothers for Kids, by Mary Kay Carson**

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