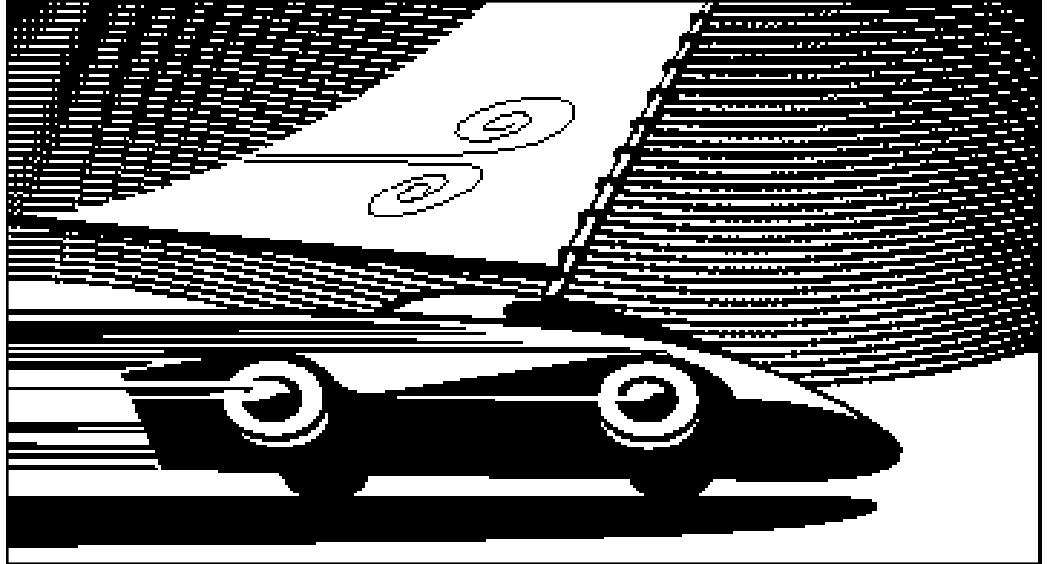


Build an Air-powered Car!



Grade level: 2-6

In this activity, young students build a car and learn that moving air pushing against an object can make the object move.

Materials:

Icebreaker

- 8 1/2" x 11" sheet of paper

Activity / per pair

- 3 nonbendable, plastic drinking straws
- 4 Lifesavers™
- 8 1/2" x 11" sheet of paper
- 2 paper clips
- tape
- scissors
- envelope (to hold the straws, Lifesavers, and paper clips)

ZOOMon

- extra materials from the list above

ZOOM links at pbskids.org/zoom/sci

Keep experimenting with air power:

- Balloon Car
- Windmills
- ZOOM vehicle
- Junk boats
- Hot air balloon

Kid Feedback:

Hear what kids have to say about the Puff Mobile at www.pbskids.org/zoom/sci/puffmobile.html.

Activities:

1. Icebreaker

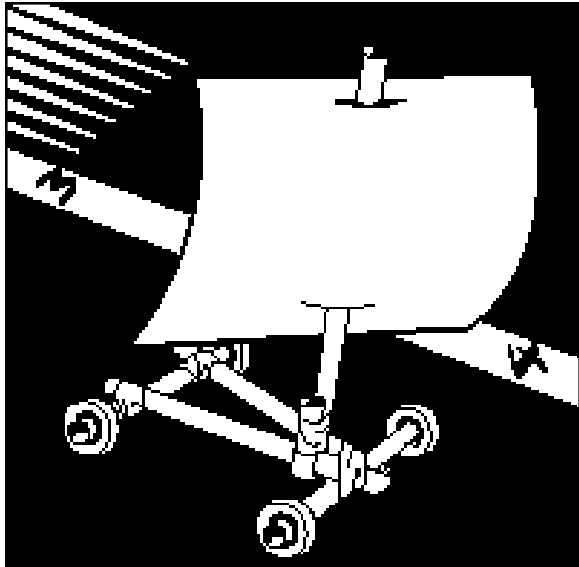
Place a sheet of paper flat on the table. Blow on it. Ask kids to brainstorm how they can change the sheet of paper so it will move farther.

2. Try it Out

Organize kids into pairs and distribute activity materials. Challenge them to build a car that goes 6 feet with the least number of puffs. If kids are having trouble getting started, ask: Which pieces look like wheels? How could you make a sail? What can you use to make a car body? The candy wheels will need to be held in place so they don't roll off the straw. One way to do this is to add tape to the straw on either side of a wheel.

Set up a test track by putting a 6-foot strip of masking tape on a smooth surface, such as an uncarpeted floor or a tabletop. Mark a starting line, at 1-foot intervals, and a finish line. Have the kids test how many puffs it takes to reach the





finish line. Ask: Which parts help the car move? Which parts seem to slow it down? What would you change to make the car move farther with fewer puffs?

3. ZOOMon

If there's time, challenge kids to redesign their cars so it takes fewer puffs to reach the finish line. Or encourage kids to keep experimenting at home by changing one variable at a time and making a prediction. Ask: What happens if you use fewer materials? Add a new material like thread spools? Change the size or shape of any part of the car?

4. Connect to Engineering

In real life, engineers design different types of vehicles using different types of power, or fuel. For example, a car is powered by gas, a bike is powered by a person, a carriage is powered by a horse, a sailboat is powered by wind. Engineers are also designing vehicles that run on fuels other than gasoline: wind-powered recreational vehicles, solar-powered cars and hybrid cars (cars that use both electricity and gasoline).

The Puff Mobile is one of eight activities found in the toolkit for *ZOOM Into Engineering*. National Engineers Week is joining forces with the popular PBS children's show *ZOOM*.

The show helps young children learn critical concepts for success in science. Through *ZOOM Into Engineering*, EWeek volunteers help students connect what they learn to engineering. Read more about this program at our *ZOOMzone*, www.eweek.org.

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