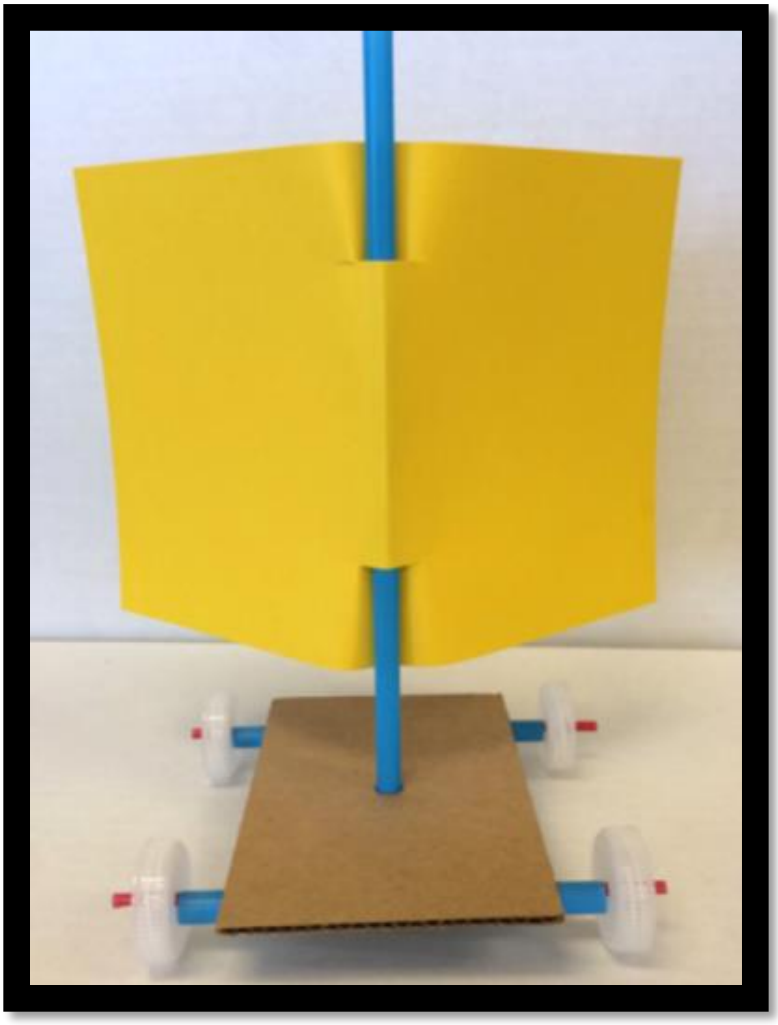
SHIFTING RHYTHMS

# Windy Wheels

Time Estimate: 1 Hour



Tags: Science, Design

## Materials:

To build your car, you'll need:

- Two Straws
- 2 Coffee Stirrers or 4 Toothpicks
- 4 Bottle Caps
- Clear Tape
- 3 ½ by 4 ½ inch piece of cardboard
- 3 ½ by 6 inch piece of construction paper
- Scissors
- Hammer
- Nail

## What is Windy Wheels?

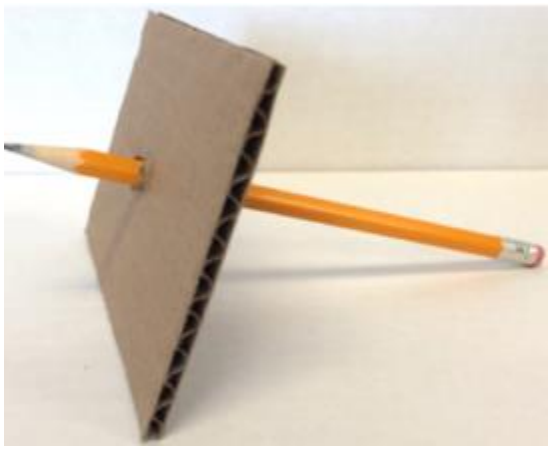
This activity will have students create wind-powered cars, using a cart and a paper sail, which will glide across the floor.

Here are a few things to think about once you've built your wind-powered cars...

- What is causing the car to move, and how can you make it go farther?
- Does the surface of the ground affect the movement of the car?
- What can you change to make the car move farther?

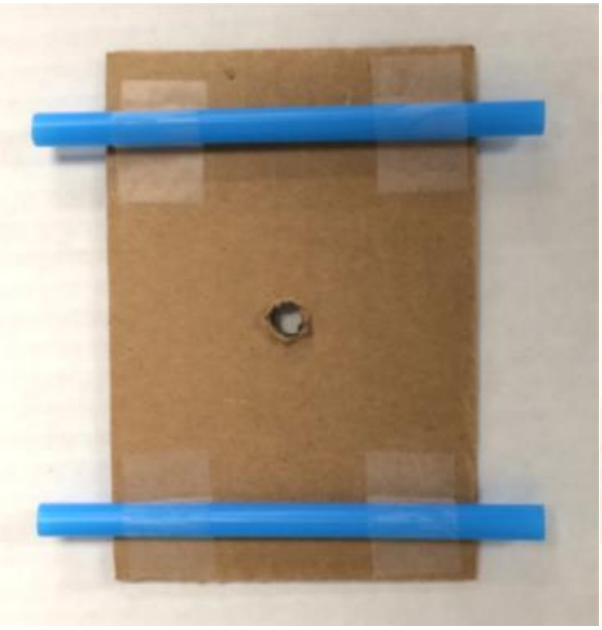
## The Base:

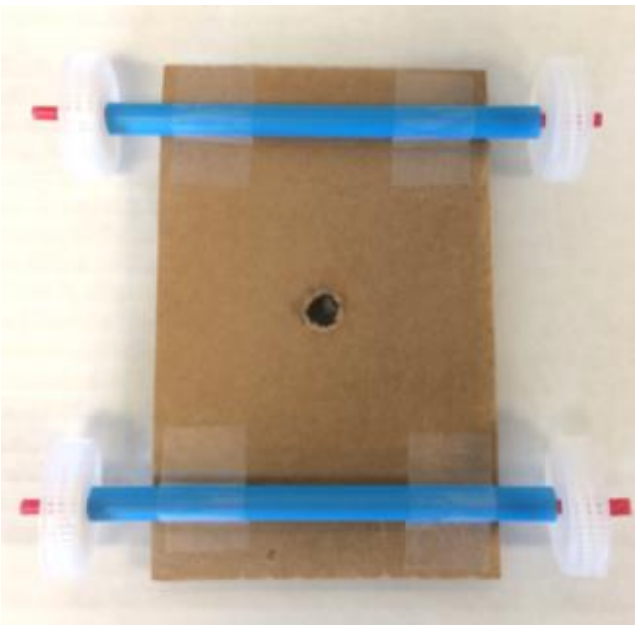
Use the hammer and nail to make a hole in the center of each bottle cap.



Use a pencil to make a hole in the center of the cardboard big enough to fit the straw.

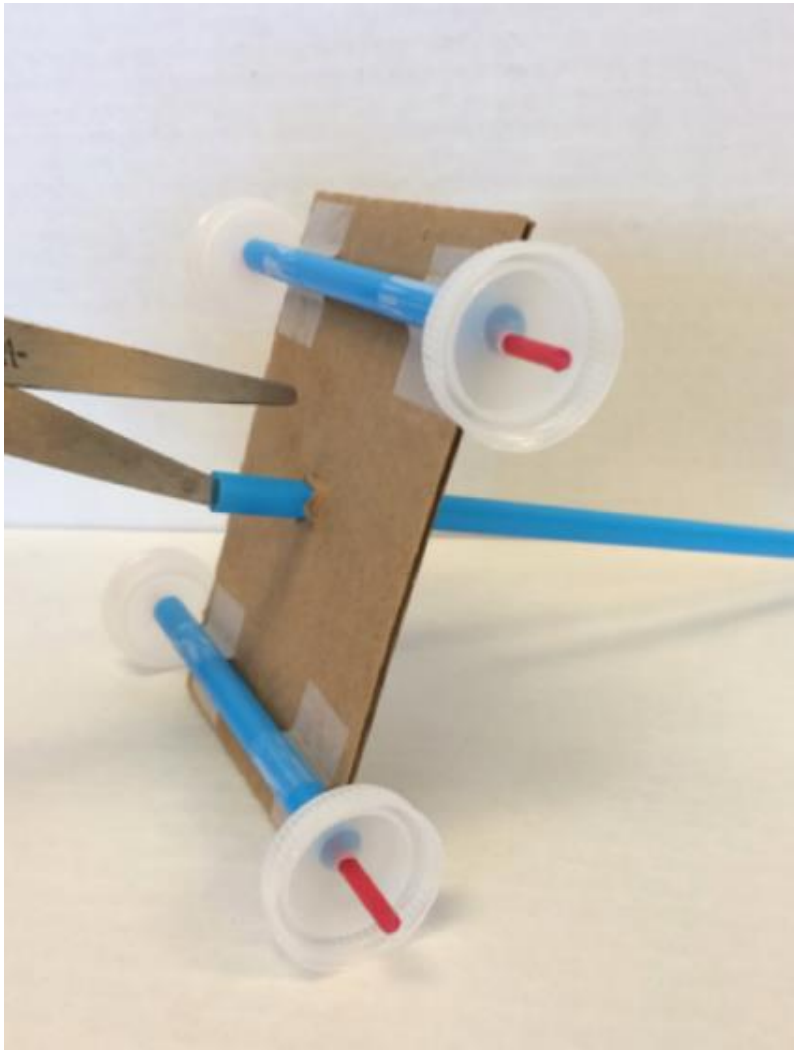
## The Wheels:





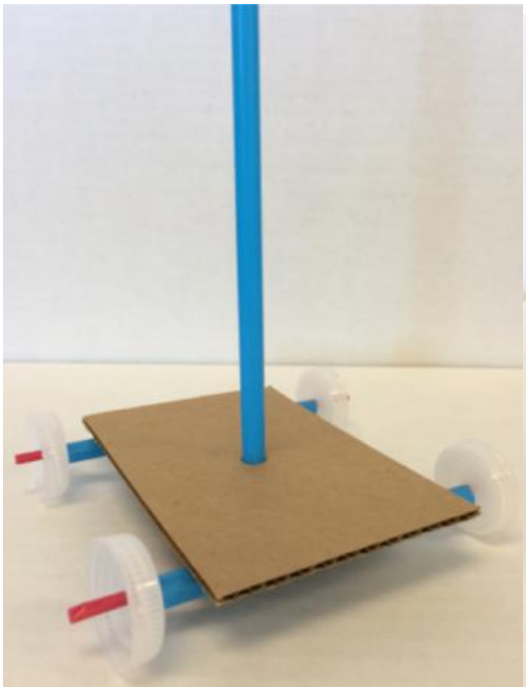
1) Cut a straw in half
2) Tape the two halves to the bottom of the cardboard with the ends sticking out.
3) Push the coffee stirrer through a plastic cap, the straw, and another plastic cap to make your wheels.

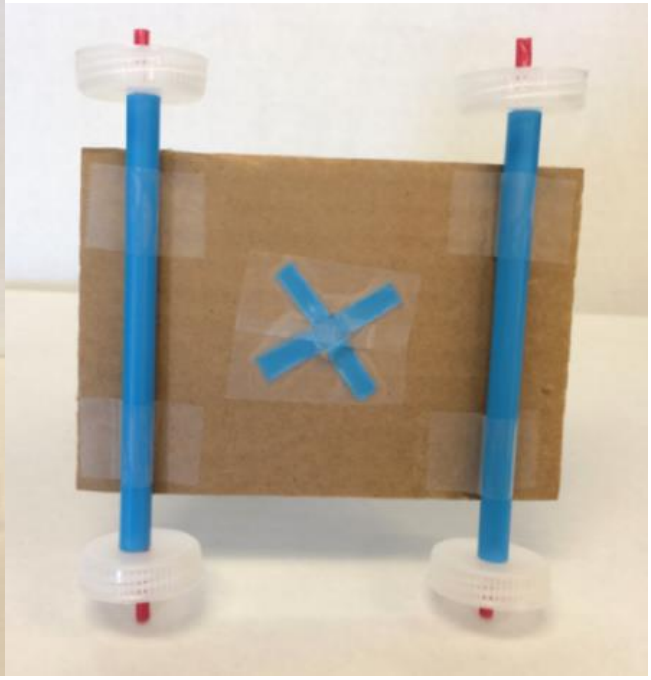
## The Mast:



Take your second straw and cut 4 even slits into the tip of the straw. The cut should only be a half an inch from the end of the straw.

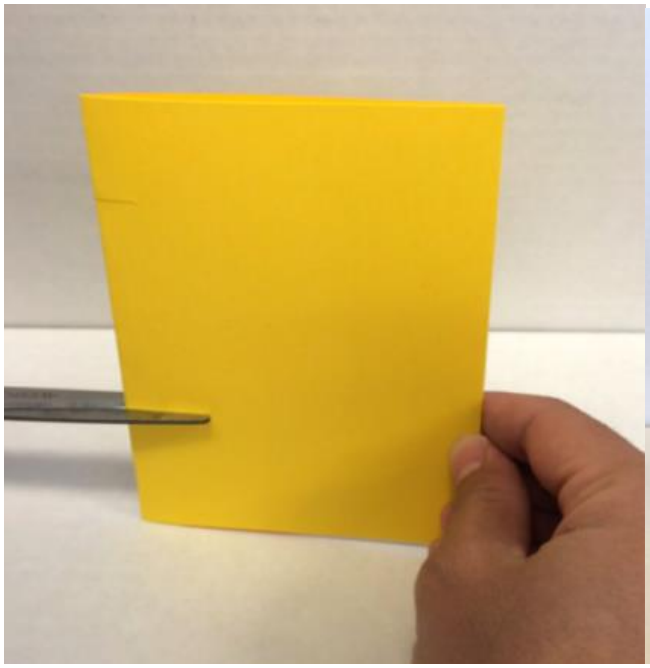
## The Mast:

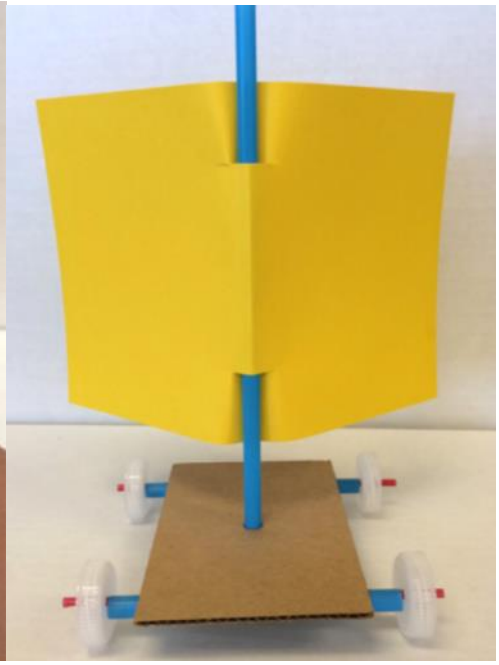




Fold each slit outward and tape them flat against the bottom of the base. The folds should form an “X”. The mast should stand straight now and it is almost ready to set sail.

## Set Sail:





Fold the cardstock or paper in half and two small slits on the fold, a couple of inches apart. Push the straw through the slits in the sail and bend the sail a bit so it's shaped like a "V".

Behind the Science:

The car needs a push or a pull to make it move. That push or pull is called a force. Some forces are easy to see – like when you push on the car with your hand. Other forces, like wind, are invisible, but they still push on the car and make it move. The stronger the force of wind pushing on the car, the faster and farther it moves (as long as it doesn't tip over).