



# Build an Anemometer Activity

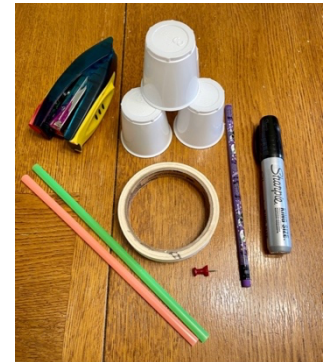


*Ready to get started with this activity? To keep track of your progress, check off the instructions for each step below as they are completed. Make sure to check the box of the last step when you're done to receive congratulations for your completed activity!*

**Consider this:** Wind speed is important to engineers who work on wind turbines. They adjust a turbine's blades to control the rotor speed and have to change the angle of the blades depending on strong or weak wind. By knowing wind speed, they can help the turbine produce electricity more efficiently.

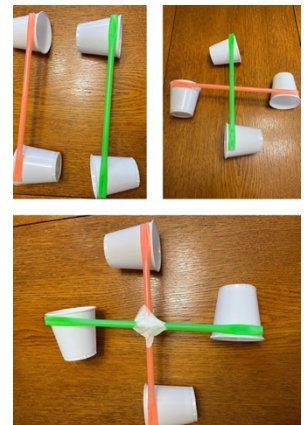
## 1. Gather Your Materials

- (4) small paper or plastic cups
- (2) plastic straws
- Stapler
- Marker
- Tape
- Pencil
- Thumbtack



## 2. Assemble the Cups and Straws

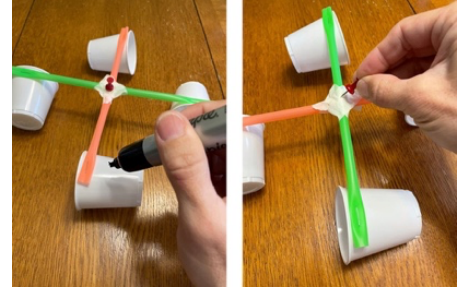
- Staple a straw to the tops of two cups. Make sure each cup is facing the opposite direction (one facing up one facing down) – repeat with the other straw and cups.
- Arrange the straws and cups into an X. The cups need to have their opening face the bottom of the next cup. Try to make sure the cups are level and at 90 degrees from each other.
- Tape the straws together when everything is aligned.





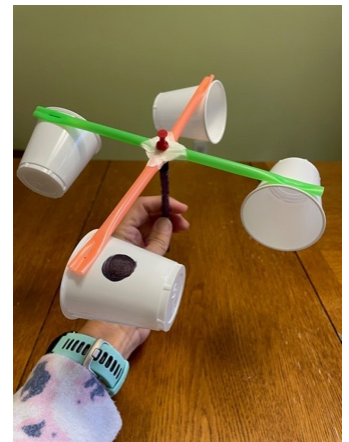
### 3. Prepare the Cups and Straws

- Color a large dot on one of the cups. This will help you count the rotations for the wind speed calculation.
- Attach the center of the straws to the top of a pencil eraser with a thumbtack. Make sure the tack is secure, but not super tight. We want the cups to be able to move.



### 4. Observe and Record Wind Measurements

- Take the anemometer outside on a breezy, or windy day. Let it spin!
- Set a timer for one minute and count how many times the anemometer cups spin. Be sure to watch the marked cup - count how many times this cup goes around.
- Keep counting until the minute is up.
- The number of times the cups move around in one minute is called revolutions per minute, or rpm. You've just measured the wind!



### 5. Things to Think About

- The word anemometer comes from the Greek word 'anemos' meaning wind.
- What other industries, besides wind energy, use an anemometer? Meteorology and aerodynamics!
- The first anemometer was made in 1450 by Leon Battista Alberti.

