



Paper Cup Anemometer
2nd

Primary Audience: K –

Description: Measure the wind's speed with a paper cup.

Key Words: Wind, Speed

Materials:

- 4 Paper cups
- 2 Corrugated cardboard strips (approx. 24 cm x 4 cm)
- 1 pencil with eraser
- 1 push pin
- Stapler, scissors, markers/crayons

Instructions:

1. Cut off the rolled edges of the conical water cups. (This makes the cups a little lighter.) Make one visibly different by coloring it with a colored marker or crayon.
2. Cross and staple the cardboard strips together to form a cross (+).
3. Staple a cup under each end of the cardboard strips, making sure that all the cups are facing the same direction.
4. Attach the center of the cross to the eraser end of the pencil with a pushpin. Blow on the anemometer to make sure it spins freely.
5. Take the anemometer outside. Choose a spot and calculate wind speed by holding the anemometer up to your eyes and counting the number of times the colored cup passed by in a minute.

What's Going On?

Meteorologists use very precise anemometers to measure the speed of wind. Wind occurs when air masses move. The earth's rotation contributes to

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movement of air masses and wind. The air at the equator is hot while the air at the poles is cold. Such global temperature differences contribute to the paths of circulation of the air. All these factors work together to make wind! You can make your own anemometers and explore the weather around them!

Further Exploration:

Your wind speeds are calculated in rotations per minute. Anemometers used by professional meteorologists convert this into miles per hour. How can you convert your rotations per minute reading into miles per hour? Readings may change from location to location, and even from time to time in the same location. What do you think might cause these changes in your readings?

Relevant Ohio Science Content Standards:

Earth and Space Sciences 3-5 D: Analyze weather and changes that occur over a period of time

- 4.1: Explain that air surrounds us, takes up space, moves around us as wind and may be measured using barometric pressure.
- 4.4: Describe weather by measurable quantities such as temperature, wind direction, wind speed, precipitation and barometric pressure.

Earth and Space Sciences K -2 C: Observe, describe and measure changes in the weather, both long term and short term.

- 2.4: Observe and describe that some weather changes occur throughout the day and some occur in a repeating seasonal pattern.