



Make Your Own Anemometer to Measure Wind Speed

Background:

Have your students ever wondered what tools meteorologists use to determine what the weather is going to be like? An anemometer is a tool used to calculate wind speed. However, meteorologists use many other tools to determine what the weather will be like. This lesson is a great way to introduce your students to weather tools!

Materials:

- Single hole punch
- Stopwatch
- Markers
- Fan with variable speeds
- 3 oz. paper cups (5 per student/group)
- Plastic straws (2 per student/group)
- Pushpin
- Pencil (sharpened, with eraser)



Procedure:

1. Ask students why it is important to know if it will be windy, hot/cold, raining, etc. Do they know any tools used to determine the weather? Who predicts the weather?
2. Introduce students to an anemometer. Explain that it is used to determine wind speed.
Note: with real anemometers, a certain number of rotations determines the speed of the wind and is measured in either miles per hour or kilometers per hour. In terms of this lesson, the number of rotations in 15 seconds is our wind speed as it is difficult to convert the speed in MPH or KPH with this simplified anemometer.
3. Now it is time to build! Use the hole punch to punch 4 holes right below the rim, so the holes will create a “+” shape.
4. Put one straw through the holes opposite each other and do the same for the other straw.
5. Use the pencil to poke a hole in the center of the bottom of the cup.
6. Turn the other 4 cups on their sides. About halfway down the cup, punch two holes, 2-3 centimeters apart. Push the end of the straw through these two holes. Make sure all of the cups are facing the same direction.
7. Push the pencil through the hole in the bottom of the center cup, eraser first. Push the pushpin through the two straws and into the eraser, but do not push it into the eraser all the way.



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8. Use the marker to make a mark or symbol on one of the cups. This will make it easier to count the number of rotations.

Time to Test:

1. If students are in groups, assign each to a role. For example, one can hold the anemometer, one can count the number of rotations, and one can work the stopwatch. If students are not in groups, they may need help doing the jobs listed above.
2. Set the fan's speed to low and hold the anemometer about 1 foot away from the fan.
3. Use a stopwatch to count how many rotations the anemometer makes in 15 seconds. Record this number.
4. Repeat steps 2 and 3 with the fan's speed on medium and high. Record these numbers.
5. If time allows, have students create a bar graph with their results.
6. Ask students what they observed. How did the speed of the anemometer change with the speed of the fan? What would happen if you took the anemometer outside on a calm day vs. a windy day? What else, besides weather, can an anemometer be used for?

Next Generation Science Standards Used:

3-ESS2-1: Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.