MAKING AN ANEMOMETER

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WIND LESSON

Time Frame:	Standards:
45 minute session to build 30 minute session to test anemometer 3rd Grade	**3.S.1.2.1** Make observations, collect data and evaluate it. **3.S.1.2.2** Replicate and/or use models **3.S.1.3.1** Measure changes that occur **3.S.1.6.3** Use appropriate tools and techniques and display data. **3.S.1.6.5** Make simple predictions. **3.S.1.6.7** Communicate the results of tests to others **3.S1.8.1** Read and give multi-step instructions

Objectives:

SWBAT build a working model of an anemometer and test for Revolutions Per Minute. (RPM's)

Background Information:

Anemometers are tools for people to use to measure wind speed on all places around the world. Wind speed is important for wind energy. Wind turbines which are machines that change the movement of the wind into electricity, need to have constant wind speed of about 14 mile per hour. All of this data needs to be recorded before a developer will look into building wind farms. All of this was done which lead to the development of the wind farms East of Idaho Falls.

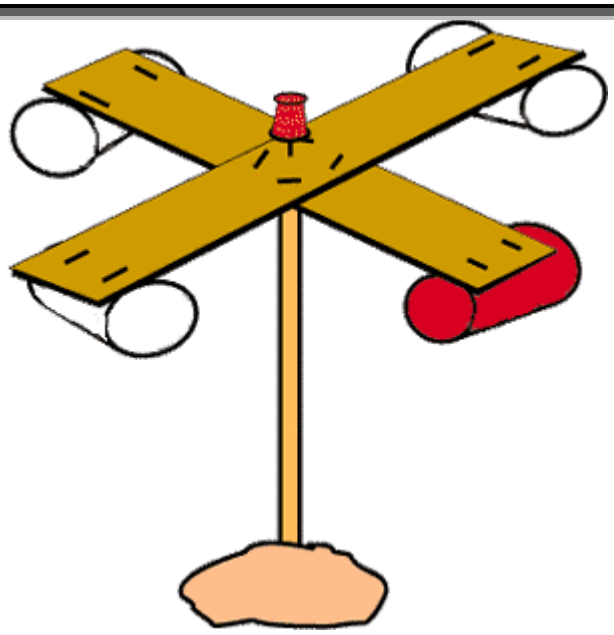
Materials:

- Scissors
- 4 small paper cups
- Marker
- 2 strips of corrugated cardboard. Make sure they are the same length.
- Ruler

- Stapler
- Push Pin
- Sharpened Pencil with an eraser on the end
- Modeling clay
- Stopwatch or watch with second hand.

Procedure:

1. Cut off the rolled edges of the paper cups to make them lighter
2. Color the outside of one of the cups with the marker.
3. Create a cross with the two cardboard strips. Be sure that there is equal lengths on both sides of the center. When this is found staple in the center.
4. Take the ruler and pencil and draw lines from the outside corners. Where the two lines intersect is the center or exact middle of the cross.
5. Staple the cups to the ends of the cardboard strips. Make sure that all the cups face the same direction.
6. Push the pin through the center of the cardboard. Attach the cardboard and cups to the eraser of the pencil.
7. Use the modeling clay and use it as a base for the anemometer.
8. Measure the wind speed.
    a. This anemometer cannot give you wind speed in miles per hour but it can give you an idea of how fast the wind is going.
    b. Using your watch count the number of times the colored cup goes around the circle in one minute. You are now measuring the number of revolutions in a minute or RPM's. Record this data and repeat this action over the next couple of days and compare this data.



Assessment:

This is an Observation Assessment. Are the students able to create an anemometer that works in the wind? In addition can the students record how many times the anemometer spins in a minute? (RPM's)

Additional Content:

None

References:

Information for this lesson came from Energy Quest. The website is http://www.energyquest.ca.gov/projects/anemometer.html