Wind Anemometer

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Summary

An anemometer is a device that measures the speed of the wind, or any gas. By using simple household materials, you can make a basic cup anemometer at home. The device uses paper cups in order to “catch” the wind, causing the structure to spin. The number of spins in one minute can tell you how fast the wind is moving in your area. At the end of the experiment, you will be able to go outside and calculate the wind speed yourself!

Materials

1. Cardboard - must be relatively sturdy
2. Pen (or any writing instrument)
3. Ruler
4. 4 paper cups
5. Thumbtack
6. Stapler
7. Scissors or a knife
8. Pencil
9. Modeling clay, playdough, or a plastic water bottle with dirt and water inside

Procedure

Link to Video:
https://drive.google.com/file/d/1cAlkLC_AR_zoIFjQQOxHJLjrEX__l3w_/view?usp=sharing

Written Out Instructions:

1. Cut the cardboard into two strips that are 1.5 inches wide and 12 inches long.
2. Use the stapler to attach the two strips so that they form a cross.

3. Attach the cups to the four ends of the cross using the stapler. (You can decorate the cups + the cross first too to make it artsy.) Make sure the cups are facing the same direction.
4. Put the cross on top of the pencil (eraser side should be touching the cross) and use the thumbtack to attach it.
5. If you are using modeling clay: Add modeling clay to the bottom of the pencil for stability. Make sure the eraser of the pencil is sticking up.
6. If you are using the water bottle: Empty the water bottle of all water. Add dirt to the bottle until it is about 60% filled. Stick the pencil inside with the eraser sticking out of the neck of the bottle. You may need to add a little bit of water so that the dirt holds the pencil in place better.
7. Go outside and test it out. If needed, tape the modeling clay to the surface. Put a timer for one minute. The number of times the anemometer spins divided by 10 is approximately the wind speed in miles per hour.

Materials & Resources

https://www.scientificamerican.com/article/bring-science-home-wind-speed/