

Educator Guide to

Weather



or Not

A workshop presented
by the Reuben H. Fleet
Science Center for
grades k-3


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ANEMOMETERS

OBJECTIVE:

Students will make a wind gauge to learn about wind speed and directions.

MATERIALS:

- 4 paper cups of 7 oz. (207 ml)
- 10 inch (25 cm square) cardboard square
- Dowel 1/4 inch diameter (.64 cm) and 10 inches long (25 cm)
- Straight pin
- Pencil
- Small bead
- Ruler
- Clock or timer

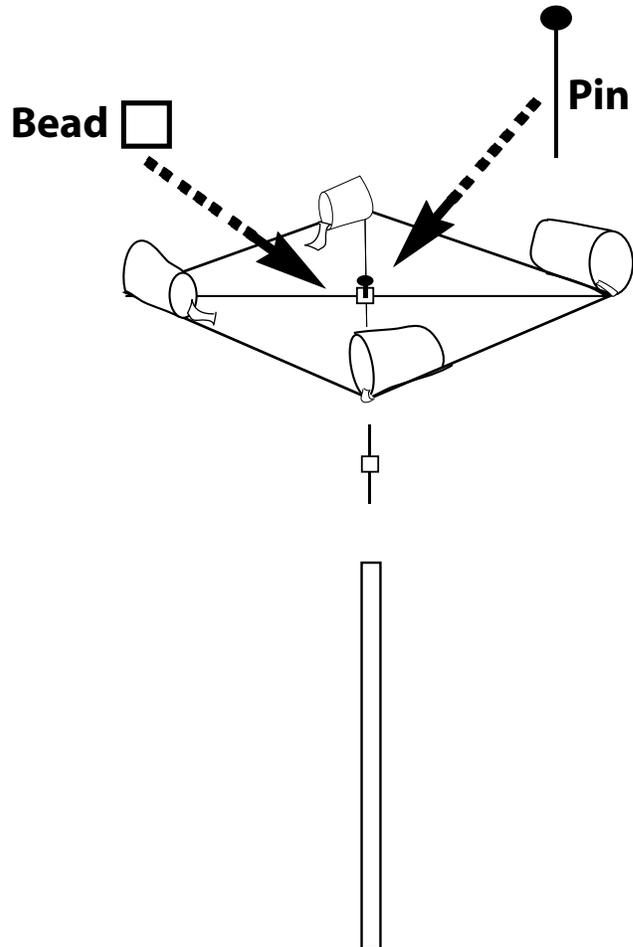
TO DO:

Using a ruler, draw a diagonal line across the cardboard, corner to corner. Draw another diagonal line across joining the other two corners. Turning each cup on its side, tape one to each corner of the cardboard (the open part of the cups should be facing different directions). Poke the pin down through the center of the cardboard, where the lines meet. Pull the pin out, put it through the bead and back through the hole in the cardboard. Carefully push the pin into the tip of the dowel. Mark an "x" next to a cup on one corner of the square for a reference point. Walk outside and find an area with wind. Using a clock or timer and watching the "x," count how many times your anemometer spins in one minute.

This activity requires wind, so try to do it when there is a lot of wind blowing. Repeat this at different times of the day for three days to see how the wind changes.

WHAT'S GOING ON?

Wind is the movement of air from an area of higher pressure to an area of lower pressure. Anemometers tell the speed of the wind by measuring how many times the unit spins around in one minute. The amount of wind making your anemometer spin can change depending on your surroundings and the weather outside.



CLOUD ART

NOTE: MAKE SURE THERE ARE CLOUDS IN THE SKY WHEN YOU DO THIS ACTIVITY.

OBJECTIVE:

Students will observe, draw, and label clouds to learn about different types of clouds in the sky.

MATERIALS:

- Colored pencils
- White drawing paper
- No. 2 pencils
- Clouds books with photos (your school or local library should have some)

TO DO:

Using the descriptions listed at the bottom of this activity, briefly tell the students about each type and show them photos of the different cloud types. Go outside and look at all of the clouds in the sky. Using the No. 2 pencils to draw cloud outlines first, pick a group of clouds you want the students to draw and begin. After drawing the outlines, use the darker (black, gray, blue) colored pencils for details.



WHAT'S GOING ON?

Clouds form when warm, moist air rises. As it rises, the warm air expands and cools. As air cools, it loses its ability to hold water vapor. Now this water vapor changes to liquid water and condenses on a solid surface such as dust or salt in the atmosphere. We see this as a cloud.



CIRRUS CLOUDS:

Cirrus (meaning "curl") clouds are very high, wispy clouds made of ice. Even in the summer, cirrus clouds are made of ice because it is cold high above Earth.



CUMULUS CLOUDS:

Cumulus (meaning "heap") clouds are the large clouds that sometimes look like huge puffs of cotton. Sometimes these clouds look like animals or familiar things. It is fun to use your imagination to make up stories about the clouds. Sometimes cumulus clouds get dark gray and rain or hail fall from them. These are called cumulonimbus clouds. These clouds often produce lightning and thunder. Nimbus always tells us that a cloud brings rain.



STRATUS CLOUDS:

Stratus (meaning "stretched out") clouds are made up of low layers of clouds that usually cover the whole sky and blot the sun. These clouds bring gray days. When rain falls from them, they are called nimbostratus clouds.

GLOSSARY

Teachers, the following glossary terms are used in the lessons above as well as the lessons that will be covered during your workshop. It will be beneficial for your students to know these words in order to get the most out of their field trip.

ATMOSPHERE: The mass of air surrounding the earth.

EVAPORATION: The change of a liquid or into vapor.

FORECAST: To predict or calculate.

PRECIPITATION: To condense and cause to fall as rain, snow sleet, etc.

PRESSURE: The force exerted over an area.

TORNADO: A strong, rotating column of air extending from the base of a cumulonimbus cloud to the ground.

WEATHER: The state of the atmosphere with respect to heat or cold, wetness or dryness, calm or storm, clearness or cloudiness.

