



Wild Weather-Post Visit Activities

CATCH THE WIND

OBJECTIVE: To help the students measure wind speeds by building their own anemometer.

MATERIALS:

1. 2 pieces of heavy cardboard approximately 2"x18"
2. Scissors
3. Staples or tacks
4. 4 individual metal-foil muffin cups
5. Bright paint
6. Sharp, thin nail
7. Large needle
8. Pencil with eraser
9. Spool of thread
10. Glue or cord
11. Block of wood or a flat stone
12. Cut a slit in the middle of the two pieces of cardboard strips so that they can fit together easily.
13. Staple or tack the muffin cups to the ends of the cardboard strips.
14. Paint one of the muffin cups.
15. Make a hole through the center of the cardboard pieces with the sharp nail.
16. For the base, stick the needle into the pencil eraser.
17. Fit the sharpened end of the pencil through the spool.
18. Glue or tie the spool to a block of wood or a flat stone.
19. Place the assembled cardboard pieces on the needle and blow on one of the cups. If the anemometer doesn't spin easily, make the hole through the cardboard pieces larger.
20. Place the anemometer outside, about three feet off the ground.
21. Keep a record of how many times the colored pan goes around in a minute.

WHAT HAPPENED:

An anemometer can tell you how fast the wind is blowing. The inward curve of the cups receives most of the force of the wind. If the anemometer rapidly increases its speed a rain, storm or thunderstorm may be on its way.

ACADEMIC STANDARDS: Scientific Inquiry: K.4, 1.6, 2.7, 3.2, 5.2
Earth and Space Sciences: 2.5, 4.1, 4.4



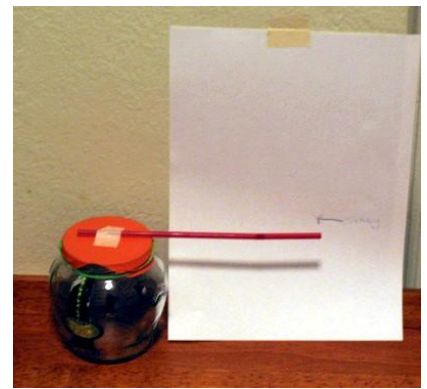
MAKE YOUR OWN BAROMETER

OBJECTIVE:

Students will be able to demonstrate the changes in atmospheric pressure by constructing their own barometer.

MATERIALS:

- Balloon
- Narrow-mouthed jar
- Rubber band or piece of string
- Glue
- Drinking Straw
- Piece of Paper



PROCEDURE:

1. Blow up the balloon carefully and then let all of the air back out. This is to stretch the balloon.
2. Cut the balloon, halfway, into two pieces. Discard the piece with the neck of the balloon.
3. Carefully stretch the other half of the balloon over the opening of the jar and then put rubber band around the rim of the jar, so the jar becomes airtight. Make sure the balloon is taut around the rim of the jar.
4. Glue or tape the straw to the top of the balloon. The straw should sit so that there is about 1 cm of space between the rim of the jar and one end of the straw.
5. Tape a piece of paper to the wall behind the straw of your new barometer.
6. As the outside air pressure becomes less than the air pressure in the jar, the balloon will expand and cause the straw to dip down. As the outside air pressure increases and becomes higher than the air pressure in the jar, the straw will rise as the balloon retracts.
7. Students should check their barometer daily and mark its reading and date on the paper. Students should be able to track if the air pressure is increasing or decreasing by using their barometers.

Extension:

Have the students plot the changes of air pressure on a line graph.

COSI Columbus | 333 W. Broad St. | Columbus, OH 43215 | 614.228.COSI | www.cosi.org

WHAT HAPPENED:

What caused the straw to move up and down? Was the air pressure falling or rising when the straw moved downward? What kind of weather do you notice when the air pressure was falling? What weather patterns were typically observed when the air pressure was rising?

EXTRA INFORMATION:

Atmospheric pressure is the weight of the air pressing down on the Earth. This air includes all the layers of the Earth's atmosphere, a thin layer of gases that surrounds the Earth. The atmosphere is composed of 78.084% Nitrogen, 20.947% Oxygen, 0.934% Argon, 0.033% Carbon Dioxide, and .002% traces of other gases. The atmosphere is divided up into many layers. The layer that is closest to the Earth's surface is called the troposphere. This layer can be anywhere from 4-12 miles high and can have temperatures ranging from 62°F to -60°F at the very top of the layer. The highest part of the atmosphere, the exosphere, can reach to 6,200 miles above the Earth!

ACADEMIC STANDARDS: Earth and Space Sciences 4.1, 4.5
Physical Sciences 1.5
Science and Technology 1.2, 1.7, 3.1

