



Who Has Seen the Wind?

Students will be able to track the wind's movements and speed with this simple tool

Every spring my enthusiastic sixth graders design, build and launch model rockets. As a prerequisite, students are required to understand basic concepts of meteorology.

Wind is created due to differences in weight. Since cold air weighs more than warm air, its pressure is greater. As the sun warms the air, it expands, gets lighter and rises. Cooler, heavier air moves to where the warmer, lighter air was located (high-pressure air moves to low-pressure areas).

Wind can blow very fast if a high-pressure area is close to low pressure, or if the pressure of temperature differences is large. Wind doesn't blow in a straight line, due to Earth's rotation. Wind tends to curve counterclockwise around a high pressure area and clockwise around a low pressure area.

Basic weather instruments are easy to construct. Here are plans for a nephoscope, which will allow you to measure the speed and direction of cloud motion without looking up.

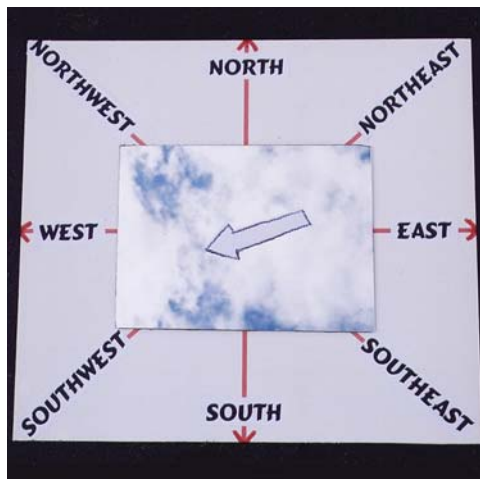
Building a nephoscope

Materials:

cardboard approximately 30" x 30"
(75 cm x 75 cm)
mirror approximately 12" x 12"
(30 cm x 30 cm)
black felt-tip pen

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yardstick or meter stick
sheet of white paper
magnetic compass



A nephoscope is easy to make and can help you study the wind's speed and direction without straining your neck to look up.

Procedures:

1. Draw a vertical line down the center of the cardboard. Label the top "North" and the bottom "South."
2. Draw a horizontal line through the center of the cardboard. Label the left side "West" and the right side "East."
3. Draw two diagonal lines across the center of the cardboard. Label the upper left-hand corner "Northwest," the upper right-hand corner "Northeast," the lower left-hand corner "Southwest" and the lower right-hand corner "Southeast."
4. Place the mirror in the center of the cardboard square.

5. Take the nephoscope outdoors and place it on the ground. Place the magnetic compass on the mirror and note the location of magnetic north. Turn the nephoscope until its directions match those of the magnetic compass.
6. Cut a four-inch arrow out of the sheet of white paper and place it on the center of the mirror.
7. Look into the mirror and wait for a cloud reflection to appear. Track the clouds across the mirror. Note the direction in which they are traveling.
8. Start a class cloud-tracking book in which students record the date, the type of weather and draw a picture of the clouds they are viewing.

Books for further study

- *Weather Forecasting* by Gail Gibbons (Aladdin, 1993, ISBN: 0-689-71683-4).
- *The Kids' Book of Weather Forecasting: Build a Weather Station, "Read" the Sky & Make Predictions!* by Mark Breen, Kathleen Friestad, Michael Kline (Williamson Publishing, 2003, ISBN: 1-885-59339-2).
- *National Audubon Society Field Guide to North American Weather* by David M. Ludlum (Knopf, 1991, ISBN: 0-679-40851-7).
- *Instant Weather Forecasting* by Alan Watts (Sheridan House, 2001, ISBN: 1-574-09136-0).
- *Wonderful Weather* by Shar Levine and Leslie Johnstone (Sterling Publishing Co., 2003, ISBN: 0-806-97249-1).