Weather Instruments
3rd Grade
Cheri Higgins

Benchmark:
Columbus Public Schools 3rd Grade SLC #13

Objectives:
Students should practice making predictions about weather from observed conditions on weather instruments and weather reports.

Materials:
- Poster board
- Thermometer
- Marker
- Weather section of a recent newspaper

Initial Demonstration:
The class brainstorms a list of the components of weather. A copy of a recent newspaper’s weather section would be helpful.

Target Observation:
- Weather is a product of several components (wind, rain, temperature, pressure)

Target Model:
- Information about the wind, rain, temperature and pressure can be used to forecast what the weather will be like in the near future.

Procedure:
Day 1:
The class is shown a list of weather instruments drawn and written on poster board. The students match each instrument with the listed weather components. The class is shown a thermometer. A giant picture of a thermometer is drawn on the poster board. Some volunteers read the thermometer in class, and some volunteers read the thermometer on the board. This activity can be used to introduce negative (below zero) readings, and the class can practice matching various thermometer readings with physical temperature.
Day 2:

The class refers to the list of weather instruments for review. The children construct a wind vane to understand how meteorologists measure wind direction (attachment A). The demonstrator turns on a fan to rotate the arrows on the wind vanes. The class practices pointing in the direction of the wind (the demonstrator can identify the directions proper (N, S, E, and W).

Day 3:

The class refers to the list of weather instruments for review. The demonstrator introduces an anemometer for a class demonstration. The demonstrator blows on the anemometer and the class counts the revolutions. The demonstrator writes the number on the board, explaining how it is a function of time. For example, “A revolution on the anemometer is like lap in the gymnasium, do you measure speed as number of laps...No, speed is measured as laps over time”. The class races toy cars to measure wind speed (Attachments B).

Day 4:

The class brainstorms ways to find daily weather information: Newspaper, computer, television, and looking outside. The demonstrator displays overhead transparencies of weather reports, and the class practices reading them. Volunteers read the date, city, source, temperature, precipitation, and the like. The students are given a worksheet from Columbus Public schools (10/17/02) grade 3 SLC 13 Attachment A.

**Target Observations:**

- Thermometers measure temperature.
- Anemometers measure wind speed.
- Wind vanes measure wind direction.
- Barometers measure pressure.
- Rain gauges measure precipitation.

**Target Revised Model:**

- The components of weather are measured using several instruments (anemometer and wind vane, rain gauge, thermometer, and barometer).
- This information is then analyzed, and concludes in a weather report, which we watch on TV, or read in the newspaper or on the Internet.

**Summary:**

Weather can be characterized by several variables. Most meteorologists (weather scientist) use information about rain/precipitation, pressure, wind speed and directions, and temperature to make forecasts. They gather this information using special scientific instruments such as thermometers, barometers, etc. Once they have collected their data, they analyze it and come up with a weather forecast.
Building a Wind Vane

Materials:

- 2 super jumbo straws
- 1 jumbo straw
- 1 hole punch
- tape
- 1 cube of modeling clay
- scissors
- poster board or file folder cut into a 2.5 inch wide, 4 inch long triangle

Procedure:

1. Insert one super jumbo straw into the clay cube to make a base, set it aside
2. Punch one hole in the second super jumbo straw slightly off center
3. Cut a 1cm slit in one end of the jumbo straw
4. Insert slit end of jumbo straw through hole in super jumbo straw
5. Separate the cut pieces of the jumbo straw, lay flat and tape down.
6. Insert the jumbo straw into the super jumbo straw so the two super jumbo straws are perpendicular.
7. Cut a 1cm slit into both ends of the horizontal straw, and insert the head of the poster board triangle into the shorter end, and the tail end into the long end. Tape the triangles to the straw.
Attachment B

Measuring wind speed

Materials:

- 5 meter sticks
- 1 fan
- 4 match box cars
- 1 stop watch

Procedure:

1. Align meter sticks 2 inches apart on a table, like racing lanes
2. Set a car at the start of each lane
3. Position a fan at the rear of the cars so that the breeze blows the cars forward
4. Use a stop watch to time the cars as they race
5. Have the students record the distance (cm) over time (min), this is a measurement of wind speed.