

Daily Weather Records

Lesson Overview: Students create a data table in Cells to keep a record of local weather conditions. Students will use this information to create graphs on paper to illustrate the changes in daily temperature.

Lesson Tie to Textbook: Exploring Earth Science, Prentice Hall, ©1997, Chapter 16: What is Weather?

Learning Objectives/Outcomes: Students will record weather observations three times a day for an entire week. Students will use this data to create several graphs tracking morning, noon, and afternoon temperatures.

Ties to National Standards:

National Science 5-8.4: Earth and Space Science

As a result of activities in grades 5-8, all students should develop an understanding of:

- Structure of the earth system.

Ties to Michigan State Standards:

Middle School Science V.3.2: Describe patterns of changing weather and how they are measured.

Grade Level: 6

Subject Area: Science

Software Used: Cells, FreeWrite

Materials Needed: School weather station (e.g. barometer, outdoor thermometer, wind gauge, etc.), handheld computers with correct software, graph paper, rulers, and additional reference material (if necessary).

Ties to Overall Unit: Students learn how to measure and describe patterns in changing weather conditions.

Teaching the Lesson

1. **Introducing the Lesson:** To access prior knowledge, ask students to share a story about a time where weather changed their plans (e.g. cancelled soccer games or tornado threats during school hours).
2. **Conducting the Lesson:**
 - a. Introduce students to the basic tools of weather measurement. Show them how to read a thermometer, barometer, wind gauge, rain gauge, and how to use the flag outside the school as an indicator of wind direction.
 - b. Using Cells, employ a row across the top to record the date and time (e.g. 9/3am, 9/3noon, 9/3pm) for each weather observation. Use the first column to list categories: temperature, wind direction, wind speed, barometric pressure, precipitation and cloud cover (abbreviating as you wish).



- c. Take the first set of data together, modeling appropriate unit labels for each measurement taken. Have students record this weather data three times a day for an entire week.

3. Concluding the Lesson:

- a. When students have compiled their data for the week, show them how to create a bar graph for morning temperatures, a separate bar graph for noon temperatures, and a third bar graph for afternoon temperatures. Make certain they label the axes.
- b. Ask students to make generalizations about the morning temperatures. Were they similar each day? Did cloud cover seem to be related to temperatures in the morning? Encourage critical thinking.
- c. In FreeWrite, have students write a paragraph comparing each set of temperature data. Students should include supporting details from the other weather observations recorded in their tables (e.g. Tuesday was cooler because it was windy and rainy.)

Reflecting on the Lesson

1. **Teaching Through Student Misconceptions:** Give each student a chance to practice with the measurement tools. Many may be unfamiliar with them. If you have a thermometer that has both Fahrenheit and Celsius, make sure the kids know which one to use.
2. **Issues to Consider:** It may be difficult to take your whole class outside to make these measurements and observations each day. Try assigning small groups to each observation time, so they can support each other in making the measurements and report their data to the whole class.

Assessment: Check graphs for consistency with recorded data. Look through student paragraphs to see if conclusions make sense given the data.

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