

Hot or Cold?

Reporting Category Probability and Statistics

Topic Interpreting data from line graphs

Primary SOL 4.14 The student will collect, organize, display, and interpret data from a variety of graphs.

Materials

- Outdoor thermometer
- Temperature Record Sheet (attached)
- Poster-size Temperature Record Chart (similar to the Temperature Record Sheet)

Vocabulary

data, tally table, chart, survey, bar graph, picture graph, line graph, circle or pie graph, line plot

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

1. Review reading a thermometer and recording temperatures in °F and °C. Then, distribute copies of the Temperature Record Sheet, and model recording a temperature on it.
2. Explain to students that they will be recording the outside temperature daily for 10 school days. Everyday, you will send two students out to read, verify, and then report the outside temperature to the class. Try to do this at the same time each day when the thermometer is in the shade. Distribute copies of the Temperature Record Sheet. As students report the temperature each day, have them record it on a poster-size Temperature Record Chart similar to the handout, and direct all students to record the reported temperature on their own Temperature Record Sheets.
3. At the end of the 10 days of data collection, instruct students in the way to plot this data on the line graph found on their Temperature Record Sheets. Direct students to label the vertical axis with appropriate increments between the marked 10-degree increments, making sure they know how to find various points between the increments.
4. Ask the following questions: “Which day was the temperature the warmest? Which day was the coolest? What is the difference between the temperature on the first Monday and the temperature on the second Monday?” Ask other questions based directly on the data, such as, “Which two days have a difference of seven degrees?”

Assessment

- **Questions**
 - Could this data be displayed on a different type of graph, such as a bar graph, picture graph, circle or pie graph, or line plot? Why, or why not?
 - What is the trend the temperatures took over these two weeks getting warmer, cooler, or no change? Was there a distinct trend? Was this typical for this time of year?
 - How might the results be different if we were to collect data during a different season of the year?

- **Journal/Writing Prompts**

- Write about the data that you collected. Explain what you noticed about the trend over the ten day period.
- Write a weather report for the first five days of recording the temperatures.

Extensions and Connections (for all students)

- Have students also collect other weather-related information at the same time as collecting the temperature. Have them decide whether there are any correlations between the temperature and other factors, such as being sunny, rainy, mostly cloudy, mostly sunny, etc.
- Have students watch the weather forecasts for the same days and then discuss whether the forecasters' predictions were accurate.

Strategies for Differentiation

- Predetermine who should partner with whom to ensure accurate daily reading of the thermometer.
- Use a large thermometer for ease of reading.
- Use large sized graph paper.
- Enlarge the Temperature Record Sheet.



Temperature Record Sheet

Temperature Data

Day and Date	°F	°C
Monday,		
Tuesday,		
Wednesday,		
Thursday,		
Friday,		
Monday,		
Tuesday,		
Wednesday,		
Thursday,		
Friday,		

Line Graph

