

Lesson Plan Title: How Cold Is It? Temperature 3-Line Graph

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Discipline / Subject: Math

Topic: Creating a line graph

Grade Level: Fifth-Eighth

**Resources / References / Materials Teacher Needs:** recorded temperature lows for 3 locations, [www.weather.com](http://www.weather.com), graph paper and/or graph on bulletin board or wall, colored paper or colored pencils, masking tape, labels indicating dates (x-axis) and temperatures (y-axis), colored yarn which coordinates with colored paper squares or dots used to plot points

**Lesson Summary:** Students will accurately plot temperature lows on a graph using dates and temperatures. Students will connect each location's temperature to create a line graph, creating a 3-line graph, and write a summary of the data.

**Standards Addressed: (Local, State, or National)**

**North Carolina Standards Sixth Grade**

**1.01** Develop number sense for negative rational numbers.

**Alaska State Standards**

**M5.2.6** Locate and describe objects in terms of their position with and without compass directions; identify coordinates for a given point or locate points of given coordinates on a grid.

**M6.2.1** Collect, organize, and display data creating a variety of visual displays including tables, charts, and line graphs.

**M6.2.2** Present the data using a variety of appropriate representations and explain the meaning of the data.

**The student demonstrates understanding of rational numbers (fractions, decimals, or percents including integers) by**

[8] N-4 identifying, describing, or illustrating equivalent representations (M1.3.4 & M3.3.5)

**National Standards**

[NM-DATA.3-5.1](#) Formulate Questions That Can Be Addressed With Data and Collect, Organize, and Display Relevant Data to Answer

[NM-COMM.PK-12.2](#) Communicate Their Mathematical Thinking Coherently and Clearly to Peers, Teachers, and Others

<p><b>Learning objectives:</b></p> <ol style="list-style-type: none"> <li>1. To accurately plot points on a graph using coordinate pairs</li> <li>2. To explain and write a summary of the graph's data &amp; meaning</li> </ol>	<p><b>Assessment:</b></p> <p>Method of assessment for learning 80% accuracy on plotting the points and explaining the meaning of the data. Student participation in the activity.</p>
<p><b>Procedural Activities</b></p> <ol style="list-style-type: none"> <li>1. Discuss your area's high and low temperatures in the past month. Were they the expected temperature, or higher or lower than expected? Provide data for your area and one or two other areas. This activity is more interesting to students if one of the areas is markedly different in temperature from the area in which students live. (EX. Barrow, AK; Juneau, AK; Washington, DC)</li> <li>2. Assign each student a date and a temperature high or low, depending on which is to be compared.</li> <li>3. Students write "their" temperature on a small square of colored paper which they will tape or pin to the wall or bulletin board graph. Or, students can use colored pencil to plot all of a location's temperatures on an individual paper graph.</li> <li>4. Use colored yarn (wall or bulletin board graph) which matches the plotted points to connect the points. If making individual graphs, use colored pencil to connect the plotted points.</li> <li>5. Write a brief summary explaining the meaning of the data they plotted.</li> </ol>	
<p><b>Materials Students Need:</b> colored paper squares to represent plotted points (labeled with temperature), tape, OR individual graph paper and colored pencils to plot the points.</p>	
<p><b>Technology Utilized to Enhance Learning:</b> research locations &amp; temperatures on <a href="http://www.weather.com">www.weather.com</a>.</p>	
<p><b>Other Information</b> When I used a brick wall to put the graph on, each brick's width represented 5 degrees of temperature (y-axis) and each half-length of a brick was the date (x-axis). Displaying the graph in a hall lets other students benefit from this work.</p>	
<p><b>Modifications for special learners/ Enrichment Opportunities</b> Work in pairs to support less proficient students. Connect the locations to social studies and science by determining factors which affect the temperatures such as latitude and longitude, and tilt/rotation/revolution of the earth. For a language connection, research and present information about the locations used.</p>	

