Weather Maps and Prediction
2nd Grade
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Benchmarks:
(2nd)   SLC 13: A. Students will be able to read simple weather maps using weather symbols.

Purpose:
       To help students recognize and use weather map symbols in predicting the weather.

Materials:
- Weather worksheets
- "Jeopardy" and associated Java files (Baseframe, Baseframe2).
- LCD projector
- Projector screen
- Computer with Java capability

Day 1:

Demonstration 1: Pressure
       As a class, point out the symbols for high and low pressure that would be found on weather maps. Explain that high and low pressure refer to air pressure, akin to feeling your ears pop when you drive up a mountain or dive to the bottom of a pool. Break the class up into groups of 4-5 students. Give each group a copy of the "weather maps" file, which has 4 maps of Ohio with different pressure systems. Ask the students to make observations about the maps and come up with an explanation of what kind of weather is associated with high or low pressure.

Target Observations:
- The maps with low pressure systems have rainy or cloudy weather.
- The maps with high pressure systems have sunny or clear weather.

Target Model:
-High pressure means clear skies and sunny, low pressure means cloudy skies, possibly rain.

Demonstration 2: Fronts
       As a class, point out and identify the symbols for cold and warm fronts. Discuss some ways of easily remembering which one is which (for instance, the cold front looks like it has "icicles," while in the warm front they are melting). Break the class into groups again. Give each group a copy of the "front maps," and ask the students to make observations about the maps and come up with an explanation of what kind of weather is associated with a cold or warm front.

Target Observations:
- The maps with a cold front had colder temperatures to the left of the front.
- The maps with a warm front had warmer temperatures to the left of the front.

Target Revised Model:
-High pressure means clear skies and sunny, low pressure means cloudy skies, possibly rain.
-Cold fronts have cold weather nearby, warm fronts have warm weather nearby.

Demonstration 3: West to East
  Students should now have an idea of what various symbols mean, but without an understanding of which way the weather generally moves, they cannot make predictions. As a class, discuss a "prediction" where the demonstrator predicts that the weather to the right of a city (Columbus) will be the weather there the next day (i.e. weather flows from east to west). Ask the students if they agree. If they do not (or if they do), ask them to prove you wrong by being good detectives in the next activity by figuring out what you did wrong in your prediction. Break the class back up into their groups and give each group a copy of the "USweather map" paper (with fronts drawn in that make sense). Assign days to each of the maps and cut them up. Ask the students to try and figure out how to use the maps to prove you wrong. Hints: which way did the demonstrator make the weather go? Which way is the weather going in the maps?

Target Observations:
- When the maps are arranged in time (chronologically), it appears that the weather is moving across the U.S. from left to right (west to east).

Target Revised Model:
-High pressure means clear skies and sunny, low pressure means cloudy skies, possibly rain.
-Cold fronts have cold weather nearby, warm fronts have warm weather nearby.
-Weather tends to move from west to east.

Day 2:

Procedure:
Set Up: Set up computer, LCD projector, and projection screen. Make sure Jeopardy java program works on computer.
  Review the weather terms and symbols discussed last time. Review the target model that was developed to explain these symbols. Divide the class up into 4 groups to play "Weather Jeopardy."
To Play Weather Jeopardy:
-Break the class up into 4 groups.
-Choices of category and point amount will be rotated among the groups.
-For each question, ask one member of the group to come forward and take the 3 cards: A, B, or C.

-Each question will be a multiple choice question.
-The four students from each group will make a selection for their answer by choosing the card that has the letter of their answer.
-After all students have made a selection, the answer will be revealed, and all students who answer correctly will get points. If the student who chose the category gets the question wrong, that student's team loses points.