Weathering the Data?

Unit 1: Groovy Graphing

Grade Level

Grade 5

Overview

In this activity, students will collect current weather data by monitoring the weather each day. Students will learn about graphing in math and weather patterns in science. Students will use their knowledge to make several types of graphs and write an expository essay about their findings regarding two cities of their choice and the difference in weather patterns.

Key Standards

Mathematics
M5D2. Students will collect, organize, and display data using the most appropriate graph.

Earth Science
S5E1. Students will identify surface features of the Earth caused by constructive and destructive processes.
   a. Identify surface features caused by constructive processes.
      - Deposition (Deltas, sand dunes, etc.)
      - Earthquakes
      - Volcanoes
      - Faults

   b. Identify and find examples of surface features caused by destructive processes.
      - Erosion (water—rivers and oceans, wind)
      - Weathering
      - Impact of organisms
      - Earthquake
      - Volcano
   b. Relate the role of technology and human intervention in the control of constructive and destructive processes. Examples include, but are not limited to
      - Seismological studies,
      - Flood control, (dams, levees, storm drain management, etc.)
      - Beach reclamation (Georgia coastal islands)

English/Language Arts
The student produces informational writing (e.g., report, procedures, correspondence) that:
      a. Engages the reader by establishing a context, creating a speaker's voice, and otherwise developing reader interest.

b. Develops a controlling idea that conveys a perspective on a subject.
c. Creates an organizing structure appropriate to a specific purpose, audience, and context.
d. Includes appropriate facts and details.
e. Excludes extraneous details and inappropriate information.
f. Uses a range of appropriate strategies, such as providing facts and details, describing or analyzing the subject, and narrating a relevant anecdote.
g. Draws from more than one source of information such as speakers, books, newspapers, and online materials

Possible Materials

- A computer
- Weather section of daily newspaper
- "Weathering the Data" Student Recording Sheet

Task

Students will be responsible for tracking the weather in two different cities. One city must be located in the United States. The other city must be located in another country. Each student will need to look up and record:

- Longitude and Latitude Coordinates
- Climate
- Highest temperature
- Lowest temperature
- Average temperature
- Range, media, mode temperature

<u>Sample Questions</u>

1. Which graph is appropriate to display your information and why?
2. How does the weather of your two cities compare?
3. Based on the weather of the cities you have chosen which one would you want to make a future home? Why?
4. What approach did you use in choosing the most appropriate graph? Why?
5. What other facts do you want to know about your two cities?
6. How is rainfall related to the physical features of your cities?
7. Suppose you could change the weather every day. What would be your favorite weather? Give supporting information with temperatures and climates.

<u>Sample Question Solutions</u>

The above questions are based on Bloom's Taxonomy and may have countless answers. The teacher needs to monitor student's depth of thought and support of details.

<u>Assessment Ideas</u>

The major assessments are:

Final graph – Graded against their understanding of the standards:
M5D1. Students will analyze graphs.
   a. Analyze data presented in a graph.
   b. Compare and contrast multiple graphic representations (circle graphs, line graphs, bar graphs, etc.) for a single set of data and discuss the advantages/disadvantages of each.

M5D2. Students will collect, organize, and display data using the most appropriate graph.

Final essay – written centered on the 6+1 Traits of Writing.

Students will get up in front of the class and be able to present the weather patterns of both their cities, and openly compare and contrast the two. The student will then explain his/her graph, why he/she chose that one. Student will then end with what city they would want to live in and why.