Graphing The Ingredients of Soil (Lesson 2b)

OBJECTIVE: Students will use the data collected from their previous science lab to create and analyze a class bar graph demonstrating the components of soil.

PA ACADEMIC STANDARDS:
1.6.3 E – Participate in small and large group discussions and presentations.
3.2.4 C – Recognize the elements of scientific inquiry to solve problems.
3.4.4 D - Describe the composition and structure of the universe and earth’s place in it.
3.1.4 A – Know that natural and man-made objects are made out of parts.
3.4.4 D - Describe the composition and structure of the universe and earth’s place in it.
3.5.4 A – Know basic landforms and earth history.
3.5.4 B – Know types and uses of earth materials.

MATERIALS:
- Chart paper (laminated bar graph template is preferred, if available)
- Markers
- Graph paper
- Graphing journal page
- Pencils
- Crayons/Markers
- Access to white board and dry-erase markers
- Graphic organizer from previous day

PROCEDURE:

a) Anticipatory Set: Display the previous day’s graphic organizer, which contains the components of soil students found during their lab. Review what students found. Ensure that the terms ORGANIC MATTER and INORGANIC MATTER as reviewed. (Say the definitions together as a class).

Discuss how science and the students’ current math unit on graphing and data analysis might be related. Ask for a few examples of instances when a scientist might want or need to use math on the job. Explain that WE will use math today to further analyze the ingredients we found in our soil.

b) Practice: Choose 5-7 materials found in soil (a mixture of organic and inorganic; common or particularly relevant findings such as dead plant material, small rocks, etc). Review which of the materials are organic matter and which are inorganic matter.

Distribute graph paper and journal page so that students may create their own individual graphs.

Survey the class and create a tally chart to find out how many students found each material in their soil samples. (Students may copy this tally chart onto the BACK of their journal pages.)
Allow students to individually create their own bar graph representing what they found in soil. Make sure to review and define all the required elements of a bar graph (scales, labels, title, bars, etc.)

c) Closure: Afterwards, create a class version of the graph for comparison and display. Check understanding of organic and inorganic matter and what they are.

**ASSESSMENT:** Check and mark student graphs, comparing them to the class graph. If time permits, ask students to define organic matter and inorganic matter in their own words in writing on one of their journal pages.