

Grade level: 3rd grade

The Sun's Energy – interpreting the graph

GOALS

Content Area: Science

Common Curriculum Goal: Analyzing Data and Interpreting Results: Analyze scientific information to develop and present conclusions. (01)

Standard/Benchmark: SC.03.SI.04 Use the data collected from an investigation to explain the results.

Language Arts Standards: EL.03.RE.21 Interpret information from diagrams, charts, and graphs.

ESOL Goal (Function): Cause and Effect

OBJECTIVES

Science Objective 5: After constructing a graph and learning how to read it, students will be able to correctly answer 4 questions about the data on the graph.

Language Arts Objective 8: After constructing a graph and learning how to read it, students will be able to correctly answer 4 questions about the data on the graph.

Objectives (Forms):

B & EI: Answering cause and effect questions with a yes/no answer or simple response.

I: Descriptive sentences with past tense verbs. "When ____, then ____." or "If ____, then ____."

PRIOR KNOWLEDGE

- Students should have some experience with or exposure to graphs and diagrams.

MATERIALS

- The graphs students produced during lesson 3

PROCEDURE

Anticipatory set

- "Yesterday we collected some temperature readings from our simulation and transitioned the information to a graph. Today we are going to learn how to read the graph."

Teaching

- **Review** how to line up the x and y values and match them to the plot.
- **Demonstrate** how to choose one graphed line or the other. “Put your finger on the green line. Which planet does this represent?” is one example of a **guided question** that will help students understand/remember.
- Confirm that the students understand the lines represent the temperatures of the cans. (Remember how hot the cans got?)

Guided practice

- Ask students the following questions one at a time, allowing students **T-P-S** as they work through the questions. **Post the questions for students to read** as I read them aloud.
 - Which model got hotter, the “Earth” model or the “Distant Planet” model?
 - How hot was the “Earth” model when the time was 4 minutes?
 - What time was it when the “Distant Planet” was 28 degrees?
- Model the language objective where appropriate in the lesson: “If the model is close to the light bulb then it will be hotter (than the model that is far away).”
- Be sure students are writing their final response on the back of their graph.
- Debrief and share student Ideas and **ask guided questions** to fix misconceptions.

Independent practice

- Individually, students will answer the following questions on the back of their graph: “do you think the planets closest or farthest from the sun will be the hottest planets?” and “Why do you think so?”
- Write the frame sentence on the board with blanks for those students who need it.

Closure

- “Today we learned about the sun and its energy. We also learned how to read the line graph that represents the energy absorbed by objects. Tomorrow we will learn about Earth’s moon, which also absorbs energy from the Sun.”

DIFFERENTIATION

- Differentiation is **highlighted**.

ASSESSMENT

Informal: Question/response sessions and observation of student interactions.

Formal: After constructing a graph and learning how to read it, students will be able to correctly answer 4 questions about the data on the graph.

Targeted Language Skills:

Reading: Students must read the questions they are to answer.

Writing: Students must write the answers to the questions asked.

Listening: Students must listen to each other during T-P-S and to the teacher reading the questions.

Speaking: Students must speak to each other during T-P-S and to answer teacher questions.