Solar Test Clues

Use context clues to unpack scientific terms and symbols.

CCSS.ELA-Literacy.RST.6-8.4 "Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Circle each scientific symbol or measurement, and underline each domain-specific word or phrase. Number the nearby clue that helps you infer what each marked item means.

A Solar Oven Investigation

1. At the school garden, students tested two small solar ovens made from cardboard boxes. Each oven held a cup of water and a thermometer. They placed one oven in direct sunlight and one beneath a shaded canopy. The team recorded the starting temperature, 22°C, at 10:00 a.m. In this investigation, temperature is measured in degrees Celsius, shown by the symbol °C. The shaded oven served as the control, a condition used for comparison with the sunlit oven.

2. To keep the test fair, students held several variables constant. Both cups contained 200 mL of water, and both ovens faced south. These conditions stayed the same. The independent variable was the amount of sunlight each oven received. The dependent variable was the water's temperature after 30 minutes. By changing only the sunlight condition, the team could connect differences in temperature to that one factor rather than to cup size, water volume, oven direction, or another condition.

3. At 10:30, the sunlit oven's water measured 38°C, while the shaded oven's water measured 25°C. The team calculated ΔT, or change in temperature, by subtracting the starting temperature from each final temperature. For the sunlit oven, ΔT was 16°C. The greater ΔT suggests that the sunlit oven absorbed more energy from sunlight. This evidence supports the claim that sunlight can warm water in a solar oven, although one trial does not prove the result will occur every time.

2 ANSWER WITH EVIDENCE

Use the passage

1. What does the symbol °C mean in this investigation?

2. What is the control, and why is it called the control?

3. What was the independent variable? How was it different from the dependent variable?

4. What does ΔT mean, and what was ΔT for the shaded oven?

3 YOUR TURN

Your own words

Imagine testing whether black or white paper warms faster in sunlight. Write two sentences that use the terms independent variable and dependent variable and the symbol °C correctly to describe a fair test.

ANSWER KEY

Solar Test Clues

GRADE 7 · RST.6-8.4

PART 1 · READ AND MARK

Circle each scientific symbol or measurement, and underline each domain-specific word or phrase. Number the nearby clue that helps you infer what each marked item means. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What does the symbol °C mean in this investigation?	**Degrees Celsius, the unit used to measure temperature.**
2	What is the control, and why is it called the control?	**The shaded oven. It is the comparison condition for the sunlit oven.**
3	What was the independent variable? How was it different from the dependent variable?	**The independent variable was the amount of sunlight received. It was changed, while the dependent variable, water temperature after 30 minutes, was measured.**
4	What does ΔT mean, and what was ΔT for the shaded oven?	**ΔT means change in temperature. The shaded oven's ΔT was 3°C.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

In a fair test, the independent variable is the paper color, while the dependent variable is the temperature of each paper. I would measure both papers in °C after the same time in sunlight and keep their size and starting temperature the same.

Accept equivalent context-based definitions for the scientific terms and symbols. For the open task, accept any accurate two-sentence test description that correctly identifies the changed and measured variables and uses °C as a temperature unit.