Clues to Change

Use observations to support a classification claim.

S8P1.d "Construct an argument based on observational evidence to support the claim that when a change in a substance occurs, it can be classified as either chemical or physical."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline every observation from Maya's and Luis's investigations. Write C or P in the margin beside each investigation to show the claim the evidence best supports.

Evidence at Two Lab Stations

1. Scientists classify changes by using observations as evidence. In a physical change, the material may change size, shape, or state, but it remains the same substance. Ice melting is one example. In a chemical change, new substances form. Evidence can include an unexpected gas, a lasting color change, a new odor, light, or a temperature change. One clue alone is not always enough. A strong argument names several observations and explains how they support a clear claim.

2. At another station, Maya dropped an effervescent tablet into water. She saw bubbles rise immediately and heard a faint fizz. The tablet became smaller, and the water felt cooler through the cup. After several minutes, no tablet remained, although the bubbling had stopped. Maya recorded what she saw, heard, and felt instead of deciding from only the tablet's disappearance. Her notes give evidence that can be used to argue how this change should be classified.

3. Near the window, Luis used his hands to flatten an empty aluminum can. The can changed from a tall cylinder to a wide, dented piece of metal. It was still shiny aluminum, and he could bend part of it into a new shape. No bubbles, odor, or temperature change appeared. Luis's observations differ from Maya's. To make a scientific argument, he must state a claim, select relevant observations, and clearly connect those observations to the claim with reasoning.

2 ANSWER WITH EVIDENCE

Use the passage

1. List two observations Maya made when she put the tablet in water.

2. Classify the tablet change as physical or chemical. Use two observations from the passage to support your claim.

3. Classify Luis's can change as physical or chemical. Cite two observations that support your claim.

4. Why was it important that Maya recorded more than the tablet's disappearance before making a claim?

3 YOUR TURN

Your own words

Choose a change that does not appear in the passage. Write four sentences: describe what you observe, state whether the change is physical or chemical, give two observations as evidence, and explain how the evidence supports your claim.

ANSWER KEY

Clues to Change

GRADE 8 · S8P1.d

PART 1 · READ AND MARK

Underline every observation from Maya's and Luis's investigations. Write C or P in the margin beside each investigation to show the claim the evidence best supports. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	List two observations Maya made when she put the tablet in water.	**Possible answers: bubbles rose, she heard fizzing, the tablet became smaller, the water felt cooler, or the tablet disappeared.**
2	Classify the tablet change as physical or chemical. Use two observations from the passage to support your claim.	**Chemical change. Bubbles and fizzing suggest gas formed, and the water became cooler. These observations support the claim that new substances formed.**
3	Classify Luis's can change as physical or chemical. Cite two observations that support your claim.	**Physical change. The can changed shape, but it was still shiny aluminum and could be bent into another shape. No bubbles, odor, or temperature change appeared.**
4	Why was it important that Maya recorded more than the tablet's disappearance before making a claim?	**Disappearance alone is only one clue. The bubbles, fizzing, and cooler water provide additional evidence for a stronger classification argument.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

A steel wool pad was heated in air, and it glowed before becoming dark and brittle. I claim this was a chemical change. Its color changed, and the material became brittle. These observations support the claim that a new substance formed.

Accept equivalent classifications when students state a clear claim and accurately connect at least two relevant observations to it. For the open response, accept any accurate example that includes observations and reasoning, not just a correct label.