Energy on the Move

Find evidence that energy traveled from one place to another.

4-PS3-2 "Make observations to provide evidence for how energy can be transferred from place to place by sound, light, heat, and electric currents. (SEP: 3; DCI: PS3.A, PS3.B; CCC: Energy/Matter)"

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB For each of the four tests, circle where the energy started and underline the observation that shows it reached another place.

Clues at Science Night

1. At the school science night, Mira tapped a small bell at one end of the room. Across the room, Jalen heard its ring even though he could not see the bell. Later, Mira aimed a flashlight at a paper star on the far wall. Jalen saw the star brighten as soon as she switched the light on. Both tests showed a change far from the object Mira used.

2. Next, Mira placed one end of a metal spoon in a cup of hot water. A tiny bit of butter rested on the spoon's handle, which was outside the cup. At first, the butter was firm. Soon, it softened without touching the water. Heat energy moved from the hot water through the metal spoon to the butter. The change in the butter was a clue.

3. Finally, Jalen connected a battery to a tiny bulb with wires, making a closed loop. The bulb glowed. When he removed one wire, the bulb went dark. The battery sent energy to the bulb through an electric current in the closed loop. Each test gave a clue: a bell was heard, a star brightened, butter softened, or a bulb glowed at a place away from an energy source.

2 ANSWER WITH EVIDENCE

Use the passage

1. What did Jalen observe that shows sound energy traveled from the bell to him?

2. What did Jalen observe that shows light energy traveled from the flashlight to the far wall?

3. What change shows that heat energy moved from the hot water through the spoon?

4. What happened to the bulb when Jalen removed a wire? How does this help show that energy reached the bulb through an electric current?

3 YOUR TURN

Your own words

Think of a different setup that could show energy moving by sound, light, heat, or an electric current. Describe where the energy starts, where it goes, and a change you could observe as evidence.

ANSWER KEY

Energy on the Move

GRADE 4 · 4-PS3-2

PART 1 · READ AND MARK

For each of the four tests, circle where the energy started and underline the observation that shows it reached another place. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What did Jalen observe that shows sound energy traveled from the bell to him?	**Jalen heard the bell ring across the room.**
2	What did Jalen observe that shows light energy traveled from the flashlight to the far wall?	**The paper star on the far wall brightened when Mira switched on the flashlight.**
3	What change shows that heat energy moved from the hot water through the spoon?	**The butter on the spoon's handle softened even though it did not touch the hot water.**
4	What happened to the bulb when Jalen removed a wire? How does this help show that energy reached the bulb through an electric current?	**The bulb went dark. It glowed when the wires made a closed loop, so the change shows that the bulb received energy through the electric current in that loop.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I place a solar-powered toy by a sunny window. Light energy travels from the Sun to the toy's solar panel. When sunlight reaches the panel, the toy begins to spin. The spinning is evidence that energy reached the toy.

Accept observations that identify a change away from the source and connect it to the energy transfer. For Your Turn, accept a different, scientifically reasonable setup with a clear source, destination, and observable change.