

Energy in Action

Trace how energy can cause motion and create change.

SC.5.P.10.2 "Investigate and explain that energy has the ability to cause motion or create change."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each energy source, circle each motion or change it causes, and write 1, 2, and 3 beside three energy-and-effect pairs.

Energy Around the Schoolyard

- ① At recess, Maya presses her foot on a skateboard and rolls across the blacktop. Her muscles use chemical energy stored from food. That energy makes her leg push against the ground. The ground pushes back on the board, so the skateboard begins to move. When Maya stops pushing, friction between the wheels and ground slows the board. Energy can cause motion, but other forces can change that motion.
- ② Near the field, wind turns the blades of a small turbine. Moving air has kinetic energy. As the blades spin, the turbine changes some of that motion energy into electrical energy. Wires carry the electrical energy to a lamp. The lamp changes electrical energy into light and thermal energy. The light makes the path brighter, and the thermal energy warms the bulb.
- ③ Energy can also create a change in shape or temperature. Luis stretches a rubber band and holds it still. His muscles transfer energy to the band, storing energy in its stretched shape. When he releases it, the band snaps back and can launch a paper ball. In another test, sunlight shines on a dark pavement square. The pavement absorbs energy and becomes warmer.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What energy source makes Maya's leg push against the ground, and what motion results?

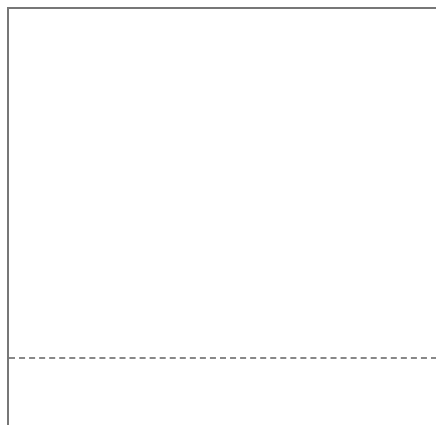
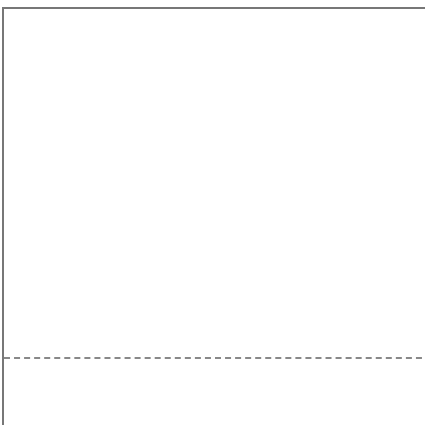
2 How does wind energy lead to a brighter path? Trace the energy changes.

3 What change happens when sunlight shines on the dark pavement, and why does it happen?

4 How does the rubber band show that energy can cause motion after being stored?

3 YOUR TURN _____ Your own words

Draw a three-panel sequence showing an energy source causing an object to move or change. Add a caption that names the energy source and explains the motion or change.

		
---	--	---

PART 1 • READ AND MARK

Underline each energy source, circle each motion or change it causes, and write 1, 2, and 3 beside three energy-and-effect pairs. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What energy source makes Maya's leg push against the ground, and what motion results?	Chemical energy stored from food makes Maya's leg push, causing the skateboard to move.
2	How does wind energy lead to a brighter path? Trace the energy changes.	Wind turns the turbine blades. The turbine changes motion energy into electrical energy, and the lamp changes electrical energy into light that brightens the path.
3	What change happens when sunlight shines on the dark pavement, and why does it happen?	The pavement becomes warmer because it absorbs energy from sunlight.
4	How does the rubber band show that energy can cause motion after being stored?	Energy is stored when the rubber band is stretched. When it is released, it snaps back and can launch a paper ball.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Panel 1: A toy car sits at the top of a ramp. Panel 2: The car rolls down the ramp. Panel 3: The car bumps a block and moves it. Caption: Energy stored because the car is high above the floor causes the car to roll. The moving car transfers energy to the block, causing the block to move.

Accept equivalent descriptions of the energy sources, energy changes, and effects stated in the passage. For Your Turn, accept any accurate three-step sequence that clearly connects an energy source to motion or a change.