

Energy in Motion

Read closely to connect movement and kinetic energy.

5.3.a "moving objects have kinetic energy;"

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each phrase that tells an object is moving. Circle each phrase that says whether an object has kinetic energy, so you can connect motion to energy.

Playground Motion

- ① On the playground, Maya watched a soccer ball after a strong kick. The ball rolled across the grass, bumped a cone, and slowed near the goal. While it moved, the ball had kinetic energy, the energy of motion. The kick transferred energy from Maya's moving foot to the ball. When the ball stopped, it no longer had kinetic energy.
- ② At recess, Jordan sent a small wagon down a ramp. Its wheels turned as it traveled toward a stack of foam blocks. The moving wagon had kinetic energy. It pushed the blocks when it reached them, showing that motion can cause a change. Friction from the floor made the wagon slow down, so its kinetic energy decreased.
- ③ Not every object at the playground had kinetic energy at the same time. A backpack resting beside a bench was not moving, so it had no kinetic energy. A child swinging forward had kinetic energy because the child was moving. A faster-moving object has more kinetic energy than the same object moving more slowly. A heavier object moving at the same speed also has more kinetic energy.

2 ANSWER WITH EVIDENCE Use the passage

1 What is kinetic energy?

2 How did the soccer ball get kinetic energy?

3 What happened to the wagon's kinetic energy when friction made it slow down?

4 Why did the swinging child have kinetic energy, but the backpack did not?

3 YOUR TURN Your own words

Draw the same object in two panels, first stopped and then moving. Write one sentence under each panel that tells whether the object has kinetic energy and explains why.

PART 1 • READ AND MARK

Underline each phrase that tells an object is moving. Circle each phrase that says whether an object has kinetic energy, so you can connect motion to energy. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What is kinetic energy?	Kinetic energy is the energy of motion.
2	How did the soccer ball get kinetic energy?	Maya's moving foot kicked the ball and transferred energy to it.
3	What happened to the wagon's kinetic energy when friction made it slow down?	Its kinetic energy decreased.
4	Why did the swinging child have kinetic energy, but the backpack did not?	The child was moving, so the child had kinetic energy. The backpack was not moving, so it had no kinetic energy.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Panel 1: A skateboard rests on the sidewalk. It has no kinetic energy because it is not moving. Panel 2: The skateboard rolls down the sidewalk. It has kinetic energy because it is moving.

Accept answers that correctly state that moving objects have kinetic energy and stopped objects do not. For the open task, accept any clearly drawn object with accurate statements for both its stopped and moving conditions.