

Push Power Test

Read evidence about how force changes motion.

SC.5.P.13.2 "Investigate and describe that the greater the force applied to it, the greater the change in motion of a given object."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline words that describe how much force was applied, and circle phrases that tell how the object's motion changed. These marks help you connect a greater force with a greater change in motion.

Two Kicks, One Ball

- ① At recess, Maya rolled the same soccer ball across a smooth floor. First, she gave it a gentle kick. The ball started moving slowly and traveled a short distance before friction slowed it. Next, Maya placed the ball at the same starting spot and kicked it harder in the same direction. This time, the ball began moving faster and traveled farther.
- ② A force is a push or a pull. A force can change an object's motion by starting it, speeding it up, slowing it down, stopping it, or changing its direction. For a given object, a greater force makes a greater change in motion. The soccer ball's mass stayed the same in Maya's two trials, so the different kicks could be compared fairly.
- ③ The amount of change also depends on what the object was doing before the force. A rolling shopping cart can be slowed by a small pull backward or stopped by a stronger pull backward. If both pulls act for a similar time on the same cart, the stronger pull causes a larger decrease in the cart's speed. Scientists compare one factor at a time when they investigate forces.

2 ANSWER WITH EVIDENCE Use the passage

1 How did the soccer ball's motion change after Maya's harder kick compared with her gentle kick?

2 What stayed the same in Maya's two trials, and why did that make the comparison fair?

3 What relationship between force and change in motion does Maya's investigation show?

4 What would a stronger backward pull do to a rolling shopping cart compared with a small backward pull?

3 YOUR TURN Your own words

Plan a fair test with an object other than a soccer ball or shopping cart. Write three sentences that name the object, describe two different-strength forces in the same direction, and predict how its motion will change.

PART 1 • READ AND MARK

Underline words that describe how much force was applied, and circle phrases that tell how the object's motion changed. These marks help you connect a greater force with a greater change in motion. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	How did the soccer ball's motion change after Maya's harder kick compared with her gentle kick?	After the harder kick, the ball began moving faster and traveled farther.
2	What stayed the same in Maya's two trials, and why did that make the comparison fair?	The same soccer ball, including its mass, was used from the same starting spot. This helped show that the different kicks caused the different motion.
3	What relationship between force and change in motion does Maya's investigation show?	For the same object, a greater force causes a greater change in motion.
4	What would a stronger backward pull do to a rolling shopping cart compared with a small backward pull?	It would cause a larger decrease in the cart's speed and could stop the cart.

PART 3 • YOUR TURN (SAMPLE ANSWER)

I will place the same toy car at the same starting line for each trial. I will give it a gentle push, then a harder push in the same direction, while keeping the surface the same. I predict the harder push will make the car speed up more and travel farther.

Accept answers that state the same object is tested with stronger and weaker forces while important conditions are kept the same. The prediction must connect the greater force to a greater change in motion.