

Forces at Recess

Read how contact and distance forces change motion.

3.7.A “demonstrate and describe forces acting on an object in contact or at a distance, including magnetism, gravity, and pushes and pulls; and”

NAME _____ DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each force phrase, circle the object causing the force, and write 1 beside a contact force or 2 beside a force that acts at a distance. This will help you compare how forces act on objects.

Maya's Recess Forces

- ① At recess, Maya rolls a soccer ball across the blacktop. Her foot pushes the ball, so the ball starts moving. This push is a contact force because her foot touches the ball. When the ball meets rough ground, the ground pushes against it and slows it down. The ball does not keep rolling forever on its own.
- ② Near the fence, Maya holds a paper clip close to a bar magnet. Before the paper clip touches the magnet, it moves toward the magnet. Magnetism is a force that can act at a distance. The magnet does not need to touch the paper clip to pull it. If the clip touches the magnet, the magnetic force can still hold it there.
- ③ Later, Maya drops the ball from her hands. Gravity pulls the ball toward Earth, even while her hands are no longer touching it. Gravity acts at a distance. When the ball lands, the ground pushes upward on it. The upward push changes the ball's motion and stops it from moving downward through the ground. Different forces can act on one object at the same time.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What contact force starts the soccer ball moving?

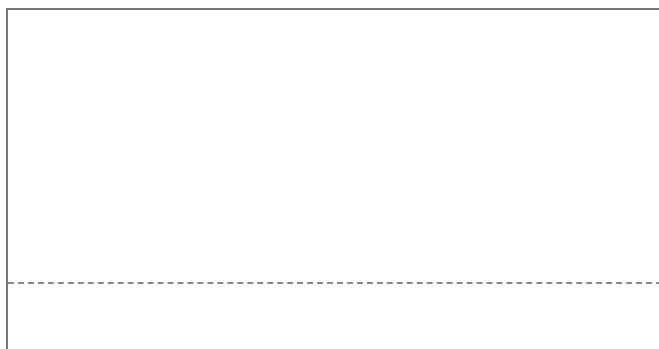
2 What force moves the paper clip before it touches the magnet? How does it act?

3 Name the two forces acting on the dropped ball when it lands. Tell what causes each force.

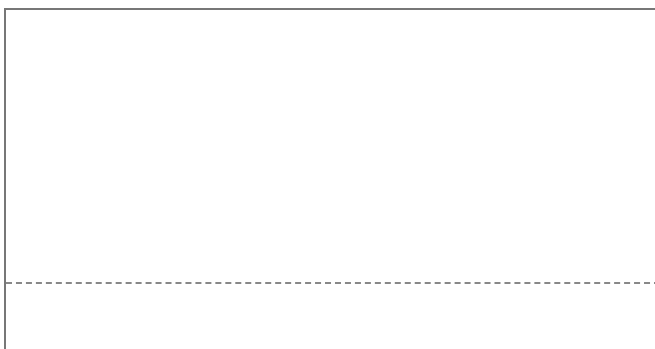
4 How is a contact force different from a force that acts at a distance? Use one example of each from the passage.

3 YOUR TURN _____ Your own words

Make a two-panel force story about objects you choose. In Panel 1, show a contact force changing an object's motion. In Panel 2, show gravity or magnetism acting at a distance. Label each force and write one sentence below each panel telling what type of force it is.



A rectangular box for drawing the first panel of a force story. A dashed horizontal line is positioned near the bottom of the box, indicating where to write a sentence.



A rectangular box for drawing the second panel of a force story. A dashed horizontal line is positioned near the bottom of the box, indicating where to write a sentence.

PART 1 • READ AND MARK

Underline each force phrase, circle the object causing the force, and write 1 beside a contact force or 2 beside a force that acts at a distance. This will help you compare how forces act on objects. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What contact force starts the soccer ball moving?	Maya's foot pushes the soccer ball.
2	What force moves the paper clip before it touches the magnet? How does it act?	Magnetism moves the paper clip. It acts at a distance because the magnet does not touch the clip.
3	Name the two forces acting on the dropped ball when it lands. Tell what causes each force.	Gravity pulls the ball toward Earth. The ground pushes upward on the ball when it lands.
4	How is a contact force different from a force that acts at a distance? Use one example of each from the passage.	A contact force happens when objects touch, such as Maya's foot pushing the ball. A force at a distance happens without touching, such as a magnet pulling a paper clip or gravity pulling the ball.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Panel 1 label: push. A hand pushes a toy car, so this is a contact force because the hand touches the car. Panel 2 label: magnetism. A magnet pulls a paper clip without touching it, so this is a force at a distance.

Accept equivalent descriptions that correctly identify the force, the object causing it, and whether contact occurs. For the open task, accept any accurate contact-force panel and any accurate gravity or magnetism panel that acts without contact.