

Name: _____

Date: _____

Forces Student Pre- or Posttest

As you answer the following questions, add labels, arrows, and other markings to the pictures to help explain your ideas.



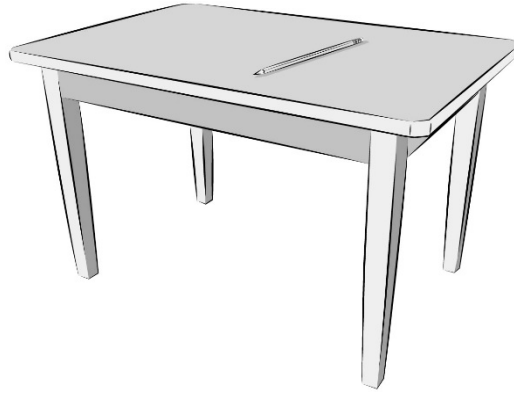
A soccer ball is resting on the grass. A young girl kicks the ball, and it starts moving. The ball rolls across the grass and gradually slows down until it stops.

1. What **forces** caused the ball to start moving?

2. Why do you think the ball slowed down and stopped?

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A pencil is sitting on your desk, and you accidentally hit it with your elbow. The pencil starts rolling toward the edge of the table. Then it rolls off the table and falls to the floor.

3. Do you think any **forces** are pushing or pulling the pencil when it's sitting still on the table? Explain your answer.

4. After the pencil started to move, why did it change direction from rolling across the table to falling to the floor?

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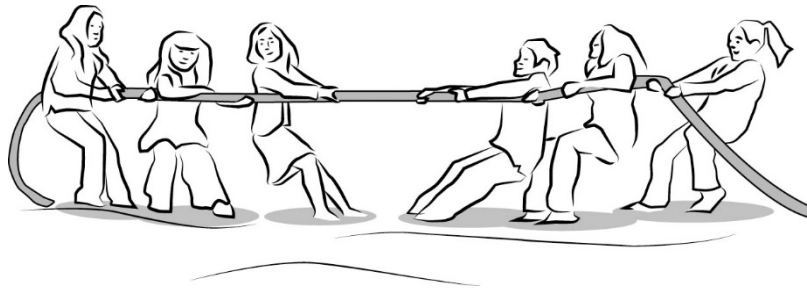


Your teacher asks you to push a heavy file cabinet across a carpeted classroom floor. You push and push, but the cabinet won't budge. Then the teacher asks your friend to push a file cabinet of the same weight and size across a smooth tile floor. Your friend pushes the cabinet, and it moves easily across the tile.

5. Why could your friend move the file cabinet she was pushing, but you couldn't budge the cabinet you were pushing?

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A group of 3rd graders are playing tug-of-war. The students on each side are pulling on the rope. They pull and pull, but neither the rope nor the students on either side move at all.

6. Why isn't anyone moving?

7. What needs to happen for one side to win the tug-of-war?
