



TEACHER GUIDE

PUSHES AND PULLS GRADES K-2

COMMON MISCONCEPTIONS

Your students will be able to make objects move, but may not be able to describe how the strength or direction of the push or pull relates to the movement of the object. After the lesson they should be able to tell you that a strong force moves an object a larger distance than a weak force.

Students may not understand what makes a moving object stop. They may say something like, “The push wore off.” They know the object has stopped but cannot attribute the stopping action to a force from the opposite direction. Students do not understand yet how the forces of friction and gravity affect the motion of objects. For this age group they just need to understand that some type of force is needed to stop an object once it is in motion. A good example would be to have them demonstrate that their foot can be used to stop the ball when playing a game of soccer. In a kickball game, they stop the motion of the ball when they catch and hold the ball.

BACKGROUND

A **force** is a **push** or a **pull**. It can move an object in different directions and at different speeds. A **push** (often with the hand) moves an object away from you or a place. One example is when a child throws a bowling ball. They are using their hand to push the bowling ball away from them. A **pull** moves an object closer to you. For example, a child pulling on a sock, pulling on a dog leash, or pulling a backpack with wheels. Forces put objects into motion. Everything that is moving around you has been put into motion by a push or a pull.

A **force** is needed to start an object moving or make it change its motion. It can move an object in a different direction and forces can be strong or weak. When a force is applied:

- An object can start moving
- An object can stop moving
- The speed of the object can increase or decrease
- The object can change direction

TIPS FOR TEACHERS

There are some excellent books on pushes and pulls that may be available through your library. Give it a Push! Give it a Pull! (A Look at Forces) by Jennifer Boothroyd provides a good introduction for this unit.

Each day while you are teaching the forces unit, have students identify real-life forces inside the classroom and on the playground. Identify the motions as a push or a pull.

Have the students make a class ***Pushes and Pulls*** booklet. Divide the class into two groups. One group will draw a picture of an object that can be moved with a push. The other half of the class will draw a picture of an object that can be moved with a pull. Have students draw arrows on their pictures indicating the direction of the push or pull. Have your best class artist draw a picture for the cover and staple or bind the book together and place it in the classroom library.

