Name _____

Extra Support for Vocabulary and Concepts

What Are Forces?

Science Words

Say each word quietly to yourself. Then read the meaning.

Read the tip to help you remember.

force [FAWRS] a push or a pull

You can use a *force* to make something happen. For example, a *force* can force a door to open or stop a ball from moving.

friction [FRIK•shuhn] a force that opposes motion

Force and *friction* begin with the same sound, but they work in opposite ways. A force can cause something to move. *Friction* can cause something to slow or stop moving.

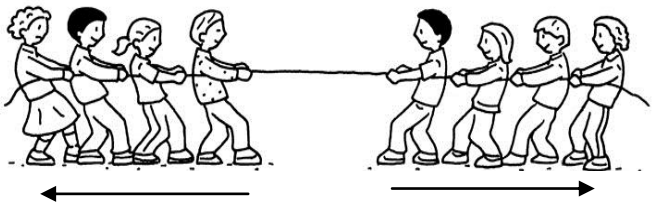
Extra force is needed to overcome the friction of the bumpy surface and move the box.

gravity [GRAV•ih•tee] a force of attraction between two objects

Gravity ends with the letter at the beginning of *you*. You and everything else have *gravity*. The effect of Earth's *gravity* is to pull you down, toward Earth.

balanced forces [BAL•uhnst FAWRS•uhz] forces on an object that are equal in size and opposition in direction

Imagine that you and a friend are playing tug-of-war. You are pulling a rope in one direction. Your friend is pulling the rope in the opposite direction. If both of you are pulling equally hard, the forces are balanced. *Balanced forces* means no movement…… and no winner!



In this game of tug-of-war, the forces are balanced.

unbalanced forces [uhn•BAL•uhnst FAWRS•uhz] forces that cause a change in motion

Imagine that you and your friend are still playing tug-of-war. But now your friend is tired and doesn't pull quite so hard. When that happens, the forces become unbalanced. *Unbalanced forces* cause movement. Your friend moves toward you, and you are the winner!

Name _____

What Are Forces?

Science Concepts

Read the Ideas more than once. Do your best to remember them.

1. Forces can cause an object to start moving, slow down, stop moving, or change direction.
2. A spring scale is the tool used to measure forces in newtons.
3. Gravity pulls objects toward each other; objects with greater mass have a greater pull.
4. Friction acts against motion in objects that are touching each other.
5. Balanced forces are forces on an object that are equal in size and opposite in direction.
6. Forces are unbalanced when one force is greater than another.
7. Unbalanced forces cause a change in motion.
8. When one cue ball hits another, the force transfers and causes the second cue ball to move.
9. The more force applied to an object, the faster its acceleration is.
10. The less mass an object has, the less force is needed to change its motion.