

Understanding Force

READ ALOUD PASSAGE

A force is any push or pull. When you push a door open, that is a force. When gravity pulls a ball to the ground, that is a force. When you pull a wagon, that is a force. Forces can be measured using a tool called a spring scale. Scientists measure force in units called newtons.

When all the forces acting on an object are balanced, the object stays still or keeps moving the same way. When forces are unbalanced, the object will start to move, stop, or change direction. The stronger the unbalanced force, the greater the change in motion.

Force and energy are closely connected. Doing work means using a force to move something over a distance. The more force you use and the farther you move something, the more energy you use. Simple machines like levers, ramps, and pulleys help us apply forces more easily. They change the direction or size of a force so that we can do work with less effort.

Gravity, friction, and muscular effort are all examples of forces we experience every day. Understanding forces helps engineers design buildings, bridges, and machines that can handle all the forces acting on them.

Activity 1: Write the Topic Sentence

Read the details. Write one topic sentence that tells what all of them are about.

DETAILS

- push a door
- pull a wagon
- gravity pulls a ball
- friction slows a bike

Your topic sentence:

Activity 2: Sentence Scramble

These words are mixed up. Put them in order to make a sentence. Start with a capital letter and end with a period.

1. or / a / pull / is / any / force / push

2. in / called / scientists / measure / units / newtons / force

Activity 3: Notes to Sentences

These are notes, not sentences. Turn each set of notes into a complete sentence.

1. force → push or pull

2. spring scale → measures force → newtons

3. unbalanced forces → start, stop, turn

Science Mad Lib

Fold the page on the dashed line so the story is hidden. Write a word for each blank. Then unfold the page, copy your words into the story, and read it aloud.

1 _____
A name

2 _____
Another name

3 _____
A noun

4 _____
A plural noun

5 _____
A number

FOLD HERE

THE STORY

_____ and _____ played tug-of-war. At first they pulled equally
₁ ₂
 hard, so the rope didn't move. The forces were balanced. Then _____'s pet
₂
 _____ grabbed the rope and pulled too. Now the forces were unbalanced,
₃
 and everyone slid toward _____'s side, straight into a pile of _____.
₂ ₄
 _____ measured the pull with a spring scale: _____ newtons.
₁ ₅