LESSON 25

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 equal and balanced, the object does not move or change its movement. 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

Circle True or False for each statement.

1. True / False A force is any push or pull.
2. True / False When forces are balanced, an object will speed up.
3. True / False Force is measured in units called newtons.
4. True / False Simple machines make it easier to apply forces to do work.

Activity 2

Because / But / So Complete each sentence three different ways.

An unbalanced force changes an object's motion because

An unbalanced force changes an object's motion but

An unbalanced force changes an object's motion so

Activity 3

Start with the kernel sentence. Use the prompts to expand it into a more detailed sentence.

KERNEL SENTENCE Forces change motion.

What kind of force?

What happens as a result?

Write your expanded sentence: