

Read the short story and answer each question.

Simple Machines, Smart Solutions

From lifting a heavy box to opening a can of soup, people use **simple machines** every day. These are tools with few or no moving parts that make work easier. Each one changes the way force is used.

One kind of simple machine is the **lever**. A lever is a stiff bar that moves around a point called a **fulcrum**. Seesaws, bottle openers, and crowbars are all levers. They help you lift or move heavy things by using less force.

Another simple machine is the **pulley**. A pulley uses a wheel and a rope to lift things. When you pull down on one end of the rope, the other end lifts something up. Construction cranes use pulleys to raise steel beams high into the air.

An **inclined plane** is a flat surface that is tilted, like a ramp. It lets you move objects up or down more slowly and with less effort. Wheelchair ramps and slides at playgrounds are inclined planes.

Even a **wedge**, like the tip of an axe or a knife, is a simple machine. Wedges are used to split or cut things. They work by focusing force on a narrow edge.

These tools may be simple, but they are everywhere. Simple machines help people do hard tasks by changing how we push, pull, lift, or cut. Knowing how they work helps us see the smart science behind everyday actions.





Name:

Simple Machines, Smart Solutions

 A. A machine with buttons and wires B. A tool with a flat surface that helps you roll C. A stiff bar that moves around a point to lift or move objects D. A rope used for pulling things sideways A. A rope and wheel that lifts things A. A rope and wheel that lifts things B. A flat surface tilted to help move objects C. A tool used to cut or split things D. A rope used for pulling things D. A wheel with teeth 	1. What does the word <i>lever</i> mean in the passage?		2. Which of these best defines inclined plane from the passage?	
 B. A tool with a flat surface that helps you roll C. A stiff bar that moves around a point to lift or move objects D. A rope used for pulling things sideways B. A flat surface tilted to help move objects C. A tool used to cut or split things D. A wheel with teeth 	Α.	A machine with buttons and wires	Α.	A rope and wheel that lifts things
 C. A stiff bar that moves around a point to lift or move objects D. A rope used for pulling things sideways C. A tool used to cut or split things D. A wheel with teeth 	В.	A tool with a flat surface that helps you roll	В.	A flat surface tilted to help move objects
D. A rope used for pulling things D. A wheel with teeth sideways	С.	A stiff bar that moves around a point to lift or move objects	С.	A tool used to cut or split things
	D.	A rope used for pulling things sideways	D.	A wheel with teeth

3. Fill in the blank:

A pulley uses a wheel and rope to make it easier to _____ something heavy.

4. Choose two simple machines from the passage. Use context clues to explain what they are and how they help people.

5. Why is it important to understand the meaning of simple machine terms like wedge or fulcrum when reading about science or engineering?





Guide Reading Level: Q Lexile Level: 735L-885L Grade Level: 4th Grade, Beginning of the Year Genre: Informational Nonfiction – Physics/Engineering

Introducing the Text

"In this lesson, students will read about common simple machines and how they make work easier. The focus is on using context clues to determine the meaning of science and engineering words, helping students better understand the tools and vocabulary of physical science."

Vocabulary: lever, fulcrum, pulley, inclined plane, wedge

Before Reading Discussion Questions

- 1. What tools or machines have you used that make work easier?
- 2. What do you think the word simple machine means?
- 3. Why might it be helpful to know how something like a lever works?

During Reading Discussion Questions

- 1. What does the word *pulley* mean in the text?
- 2. How can you tell what an *inclined plane* is just by reading the sentence?
- 3. How is a wedge different from a lever?

After Reading Discussion Questions

- 1. How do the text examples help you understand the vocabulary?
- 2. Why do authors include domain-specific words in science passages?
- 3. What would happen if you didn't know how to figure out what these words mean?

Activity Idea

Give students a chart with illustrations of five simple machines. Ask them to label each one and write a short definition based on the text. Then have them walk around the classroom or home, looking for examples of each machine in real life. Create a class list or poster to display their discoveries.



