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Introduction To Simple Machines

A simple machine is a tool that makes work easier. Simple machines help people move or lift objects, change the direction of a force, or increase the force applied. There are six main types of simple machines: lever, pulley, wheel and axle, inclined plane, wedge, and screw.

A **lever** is a rigid bar that moves around a fixed point called a fulcrum. Levers help lift or move heavy objects with less effort. For example, using a seesaw or a crowbar works as a lever.

A **pulley** is a wheel with a rope or cable that can change the direction of a force. Pulleys are used to lift heavy objects, such as hoisting a flag on a flagpole or raising a bucket from a well.

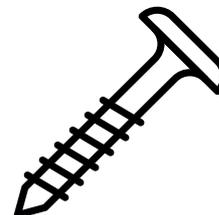
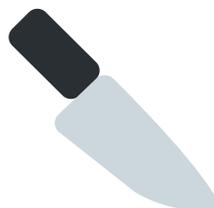
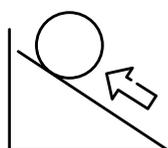
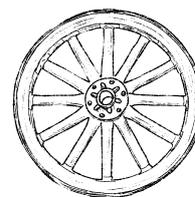
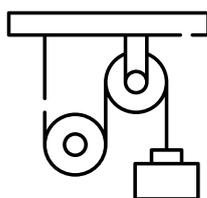
The **wheel and axle** is a simple machine that reduces friction, making it easier to move objects. Examples include cars, bicycles, and rolling pins.

An **inclined plane** is a flat surface set at an angle that helps move objects up or down with less effort. Ramps and slides are examples of inclined planes.

A **wedge** is a device that is thick at one end and thin at the other. Wedges are used to cut, split, or lift objects, such as knives, axes, or doorstops.

A **screw** is an inclined plane wrapped around a cylinder. Screws are used to hold things together or lift objects by turning, like in jar lids or bolts.

Simple machines are important because they help us perform work more efficiently. Many complex machines, like bicycles, cars, and cranes, are made by combining simple machines. Understanding simple machines helps us solve problems, build tools, and make everyday tasks easier.



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A. Multiple Choice (Choose the correct answer):

What is the main purpose of a simple machine?

- a) To create energy
- b) To make work easier
- c) To change matter
- d) To provide entertainment

Which simple machine uses a rigid bar and a fulcrum?

- a) Pulley
- b) Lever
- c) Screw
- d) Inclined plane

Which simple machine helps reduce friction and move objects more easily?

- a) Wedge
- b) Wheel and axle
- c) Lever
- d) Pulley

What is an example of a wedge?

- a) Ramp
- b) Knife
- c) Bicycle
- d) Rope

B. True or False:

- 5. Pulleys can change the direction of a force. _____
- 6. Inclined planes help move objects up or down more easily. _____
- 7. Simple machines are not used in complex machines. _____

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8. Name the six types of simple machines.

9. How does a lever make work easier?

10. Give two examples of where we use pulleys in daily life.

11. What does a screw do?

12. Why are simple machines important for humans?
