

Definitions to know:

Work – done when an applied force causes an object to move in the direction of the force

Energy – ability to cause change; can change the speed, direction, shape, or temperature of an object

Load – the weight being lifted by the simple machine

Effort – effort is the force placed on the simple machine to move the load. Also called **applied force** or **input force**

What are simple machines?

- Simple machines are tools that **make work easier**
- They have few or no moving parts
- These machines use energy to work
- Do work with one movement
- Make our work easier by letting us use less mechanical effort to move an object
- Simple machines make work easier for us by allowing us to **push or pull over increased distances**
- Use the idea of spreading force over distance: if you push further, you can use less force

You are doing the same amount of work — it just seems easier You move an object a greater distance to accomplish the same

amount of work.

- There's a trade-off of energy when using simple machines.
- Simple machines give us an advantage by **changing the amount,**

speed, or direction of forces

- They allow us to use a smaller force to overcome a larger force
- The amount of effort saved when using machines is called **mechanical**

advantage or MA

What are Compound or Complex machines?

Two or more simple machines working together

Most of the machines we use today are compound machines

Types of Simple Machines

Two groups:

Inclined planes

- Ramp
- Wedge
- Screw

Lever

- Lever
 - Wheel & Axle
 - Pulley
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