



Simple Machines

SOL 3.2



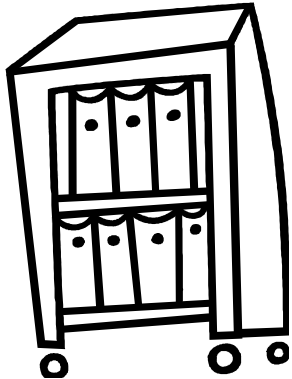
Machine – a tool that helps us do work

Machines help us by:

- 1. Changing the amount of force on an object.**
- 2. Changing the direction of the force.**

Force is a push or pull that changes the motion or shape of an object.

Example: I push a bookshelf to move it.



Energy is the ability to do work.

Example: I must have energy to run
the mile.

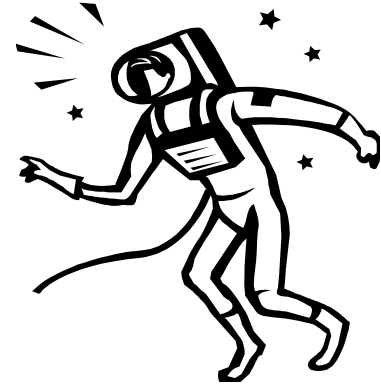


Work is the result of force
moving an object.

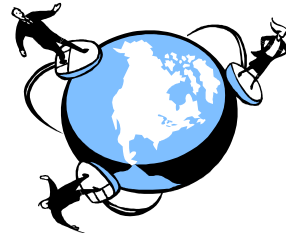
Example – Picking up something
heavy is hard work!



Gravity



Gravity is the force that constantly pulls objects toward Earth.

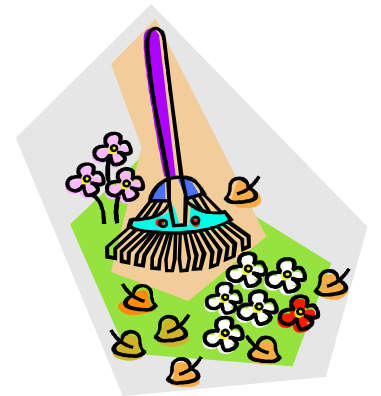
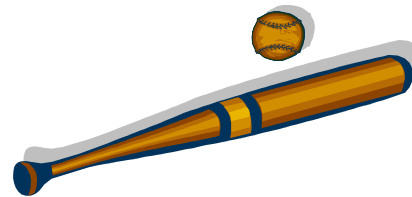


Simple machines – have few or no moving parts

- Lever
- Inclined Plane
- Wedge
- Screw
- Wheel and Axel
- Pulley

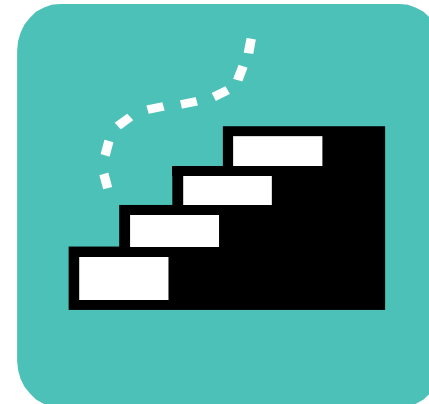
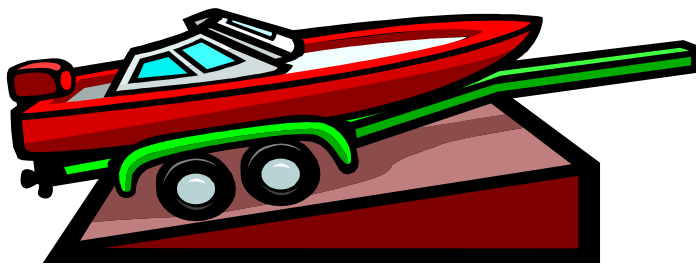
Lever –made of a board or bar set on top of a fulcrum. It is used to lift weight

Example: seesaw, crowbar, baseball bat, rake



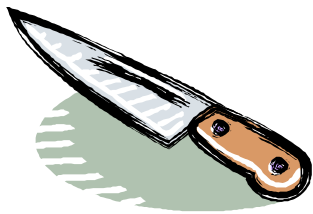
Inclined Plan – a slanted surface to make lifting easier

Example: ramp, stairs



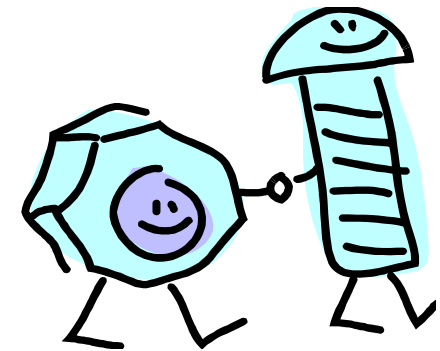
Wedge – two inclined planes together used to raise an object or split an object.

Example: knife, door wedge, ax



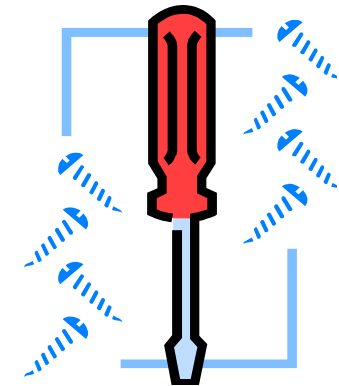
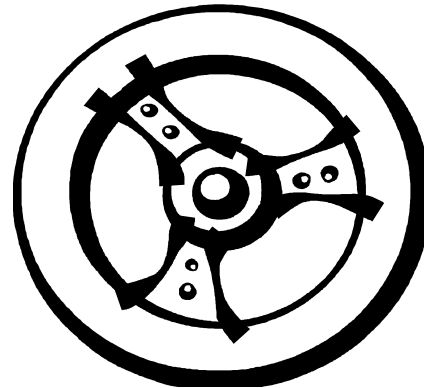
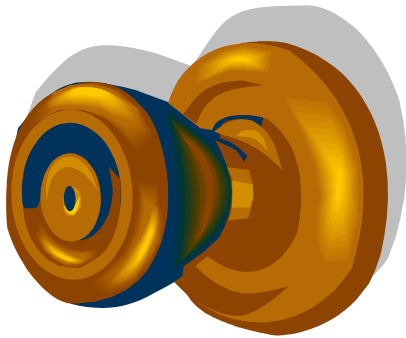
Screw – an inclined plane wrapped around a pole or shaft that is used to hold materials together or drill holes.

Example: drill bit, screws



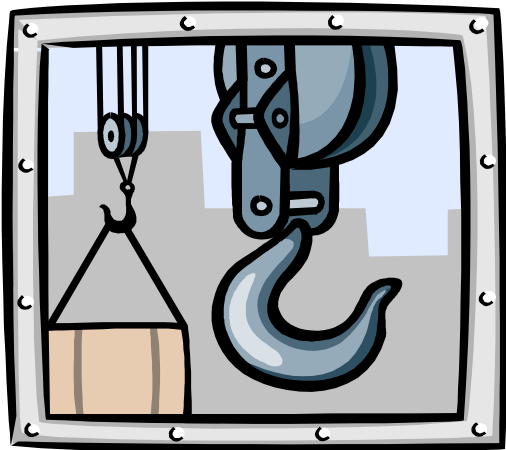
Wheel and Axle – a wheel that turns on a post to help move things quickly and easily

Example: steering wheel, doorknob, screwdriver



Pulley – made of rope and string wound around a reel to change the direction of a force.

Example : flagpole, clothesline, cranes, fishing reel



Compound Machine – two or more simple machines working together.

Examples:

Bike

Car



How Work is Done

Energy → Force → Function →

Work is done!

