Simple Machines Study Guide
SOL: 3.2

Simple Machines – tools that make work easier

• Machines with a few or no moving parts are simple machines.

Compound Machine – made up of 2 or more simple machines

• Examples: bicycle, pencil sharpener, wheelbarrow, scissors

Energy – the ability to do work

Work – when we move an object over a distance

• When we work, we use energy.
• Work is the measure of force that it takes to move an object a certain distance.

Friction - force caused by two objects rubbing together

Force- a push or a pull

Gravity - force that makes objects pull toward the earth and each other

Pushing or pulling a door is an example of motion.

In order for an object to move, a force must be applied.

Simple Machines

Inclined Plane - flat surfaces that are raised so one end is higher than the other.

• Inclined planes help move heavy objects up and down. Inclined planes make up many simple machines.
• Examples: slanted road, ramp

Lever - made up of a stiff bar that moves about a fixed point

• The point on which a lever is supported and turns is the fulcrum.
• Examples: seesaw, crowbar, shovel, screwdriver, nutcracker
**Pulley** – a wheel that has a rope wrapped around it
- Pulleys help lift objects up and down by changing the direction and amount of force.
- Examples: flagpole, tape dispenser

**Screw** - used to hold objects together
- An inclined plane wrapped around a cylinder or a cone.
- Examples: jar lid, wood screw, light bulb, bottle cap

**Wedge** - used to push objects apart
- Wedges are wide at one end and pointed at the other.
- Wedges help cut or split other objects.
- Examples: knife, ax

**Wheel and Axle** – made up of a rod attached to a wheel
- A wheel and axle makes it easier to move or turn things.
- Examples: doorknob, bicycle wheel, roller skate

Be able to identify pictures of a lever, an inclined plane, a wedge, a screw, a pulley, and a wheel and axle.

Be able to label load, fulcrum, lever, and force on a picture of children sitting on a seesaw.