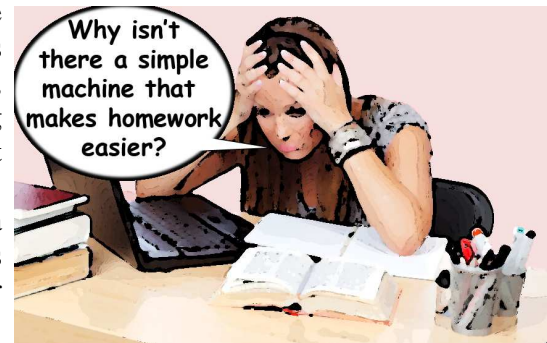


Simple Machines

A machine is a device that changes the direction or magnitude and distance through which a force operates. A **simple machine** is a machine that does work with only one movement. Examples include an inclined plane, a lever, a wheel and axle, and a pulley. An inclined plane is a ramp. A plank leading from the ground into a truck is an inclined plane. A lever is a rigid rod that rotates about a fixed point or fulcrum, such as a crowbar or a bottle opener. A wheel and axle consists of two objects of different size attached in such a way that they rotate around the same axis. A wheel on a bicycle is an obvious example, but so is a screwdriver. A pulley is a grooved wheel with rope or cable. A pulley is used to hoist a flag up a flagpole or sails up the mast. Wedges and screws can also be considered simple machines. A wedge, such as the edge of an axe, is similar to two inclined planes put together, and a screw is similar to a wheel and axle with an inclined plane wrapped around it. A combination of simple machines is called a **compound machine**. An eggbeater or nail clipper is a compound machine.



Machines can't make all work easier!

Answer the questions below based on the reading above and on your knowledge of physics.

1. What is a simple machine? _____

2. Explain how each of the following are simple machines:
 - a. Inclined plane _____

 - b. Lever _____

 - c. Wheel and axle _____

 - d. Pulley _____

3. In what way are a wedge and a screw simple machines? How are they like compound machines? _____

