

Name: _____

Date: _____

Jot down what you think of when you hear the word... **WORK** (dun dun dunnnnnnnnn)

WORK

You use energy to work every day. When you lift a carton of milk or pull open a door, you have done work. Two things must happen for work to be done. A _____ must act on an object, and the force must have enough _____ to make the object move.

Work is done when a force _____ an object. Pushes and pulls are two types of forces. When pushes and pulls move objects, work is done.



When you go to the park and get pushed on a swing, the person who is pushing you is using a force, a push, to move the swing. When the swing moves in the direction of the force, work is done.

The amount of work you do depends on how much force you use and how far the object moves. The person who pushes you on the swing does more work if they push harder and the swing moves higher. The person would do even more work if the child were heavier. They would need to use more force to move the swing.

Sometimes you might push or pull very hard on an object, but it does not move. You have done no work. You can push as hard as you can against a wall, but it will not move. No work is being done.

Now think about pushing your chair in when you stand up. You are using a force to push the chair in one direction. The force moves the chair. Work is being done.

Identify at least three other examples of work.

COMPOUND AND COMPLEX MACHINES

A **compound machine** is made up of two or more _____. The simple machines that make up the garden shears shown in the picture are a lever and two wedges. The cutting edges of the blades are wedges. The pin is the fulcrum that changes the direction of the force on the garden shears. When the handles of the shears are pulled in one direction, the blades of the shears move in the opposite direction.



The hand mower is also a _____. Notice the simple machines that make up the hand mower. The handle is a lever. Each blade is a wedge that cuts the grass. The mower rolls on two wheels and an axle. All these simple machines together make up a compound machine--the hand mower.



A bicycle is another compound machine. What kinds of simple machines make up a bicycle?