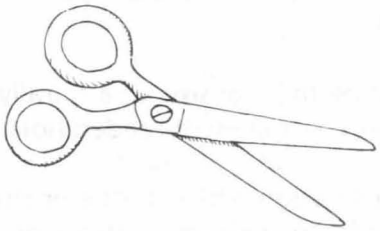
Name _____ Date _____

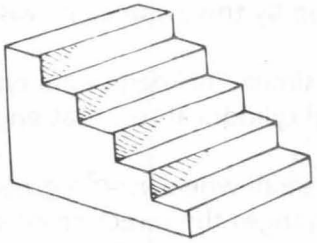
Simple Machines

A **simple machine** is one that requires only the force of a human to perform work. There are six types. From these types, the elements of all other machines are composed. Use the terms in the word box to label the illustrations. Some terms are used more than once.

lever	wheel and axle	pulley
inclined plane	wedge	screw



1 _____



2 _____

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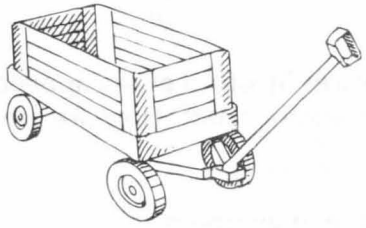


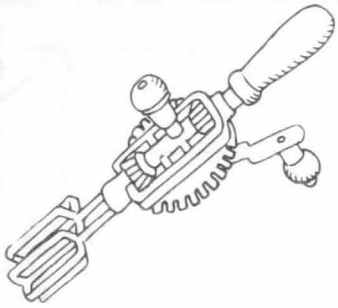
4 _____

5 _____

6 _____

7 _____

8 _____



9 _____

Name _____ Date _____

Functions of Simple Machines

Simple machines are simple tools used to make work easier. Match each term in the word box to its description.

force	work	distance	lever	inclined plane
wedge	pulley	screw	gear	wheel and axle

1. _____ This is the product of the force or effort needed to move a load multiplied by the distance it was moved.
2. _____ This is a simple inclined-plane type machine that consists of a spirally threaded cylindrical rod that engages with a similarly threaded hole.
3. _____ This is a small wheel with a grooved rim through which a rope or chains run. It changes the direction of a pulling force and combinations of these simple machines increase the force applied for lifting an object.
4. _____ This is a toothed wheel that engages another toothed mechanism in order to change the speed or direction of transmitted motion.
5. _____ This is the gap or measurement between two locations.
6. _____ This is a class of rotating machines or devices in which effort applied to one part produces a useful movement at another part. They are used for moving or lifting loads.
7. _____ This is an influence that produces a change in an object.
8. _____ This simple machine is a rigid bar that pivots on a fulcrum to move or lift a load.
9. _____ This is a combination of two inclined planes that is itself moved with force to cut apart or separate an object.
10. _____ This simple machine is a slope or ramp that is used to lift a load. It trades distance for force.

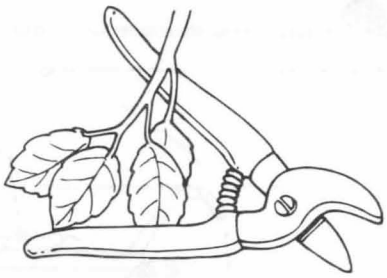
Name _____ Date _____

Identifying Parts as Simple Machines

Many of the tools we use every day are based on simple machines. Some tools even have more than one simple machine that makes them work. For example, scissors open and close as a lever but cut through material as a wedge. Use the terms in the word box to label the illustrations. Some illustrations may have more than one term that applies.

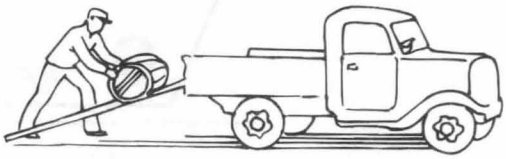
lever	wheel and axle	pulley
inclined plane	wedge	screw

1 _____

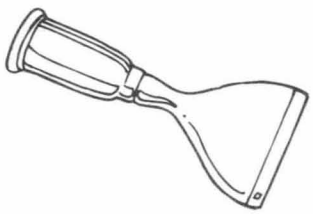


2 _____

3 _____



4 _____



5 _____

6 _____

Name _____ Date _____

Classifying Simple Machines

Classify the useful items listed in the word box by the main type of simple machine.

hammer	tin snips	nut and bolt
staircase	step stool	engine gears
seesaw	halyard	window blinds
front teeth	flagpole	clothesline
bottle opener	fishing pole	door knob
windlass crank	hand drill	clamp
lightbulb	zipper	knife
playground slide	ramp	wrench and pipe

Levers	Screws	Inclined Planes
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
Wedges	**Pulleys**	**Wheel and Axles**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Name _____ Date _____

Uses for Simple Machines

Match the simple machines in the word box to the descriptions of the work that needs to be done. Some terms are used more than once

lever	pulley	wheel and axle
wedge	screw	inclined plane

1. _____ A piano needs to be moved up to a third floor apartment.
2. _____ Your sister wants to fasten a towel bar in the bathroom. You suggest one of these.
3. _____ A large boulder is in your yard. You need to move it over about 3 feet.
4. _____ You need to block a door to keep it open while you bring in groceries from the car.
5. _____ Dad needs to take your older dog to the vet. The dog can no longer jump into the car on his own and he is too heavy to lift.
6. _____ Every morning the flag needs to be raised to the top of the flagpole.
7. _____ You remember to put the lid back on the jar of mayonnaise.
8. _____ The trees have lost their leaves and you have a lot of them to collect.
9. _____ Your little sister's treehouse is 6 feet off the ground and her friends need an easier way to get up to it.
10. _____ You turn off the water to the sprinkler hose for your mom.
11. _____ Your older brother chops some firewood because it's going to be a cold night.
12. _____ While visiting an old farm, you need to draw a bucket of water up from the well.