

## What are Simple Machines?

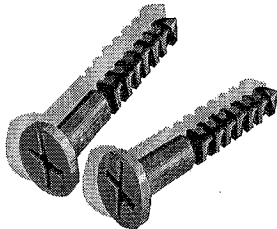
**Simple machines are devices that make doing work easier. They have few or no moving parts.**

**Inclined Plane** – An inclined plane is a flat surface that is higher on one end. You can use this simple machine to move an object to a lower or higher place. Inclined planes make the work of moving things easier. You would need less energy and force to move objects with an inclined plane.

QuickTime™ and a  
TIFF (LZW) decompressor  
needed to see this picture.

**Wedge** – A wedge is a kind of inclined plane where the pointed edges are used to do some kind of work like tightening, securing or holding, or splitting things apart. An axe blade, a kitchen knife, a push pin, a nail, a fork, a saw are examples of a wedge. A nail secures things. A wedge under a door keeps the door from moving.

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**Screw** – A screw can raise weights or it can press or fasten objects. A bolt or a jar lid is a screw. The jar lid tightens onto the jar with a screw. Screws can be found on jar lids, light bulbs, key rings, and a spiral staircase.

**Lever** – A lever is an arm that “pivots” (turns) against a “fulcrum” (point). The “fulcrum” is the resting or balancing point upon which a lever turns. Someone or something has to push or pull on a lever to make it work. A light switch, scissors, garage gate, broom, toaster handle, oven or refrigerator door are examples of a lever.

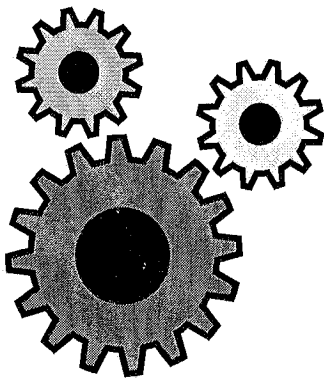
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**Wheel and Axle** – The wheel and axle is a kind of lever that moves objects across distances. The axle is a rod that goes through the wheel. This lets the wheel turn. The wheels of a car or bicycle are wheels and axles, which allow the car or bicycle to move easily although it is a heavy object. Roller skates, gears in clocks or watches are also examples of wheel and axles.

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**Pulley** – This simple machine is made up of a wheel and a rope. The rope fits on the groove of the wheel. One part of the rope is attached to the load. When you pull on one side of the pulley, the wheel turns and the load will move. Pulleys let us move loads up, down, or sideways. Pulleys are good for moving objects to hard to reach places. It also makes the work of moving heavy loads a lot easier. A flagpole uses a pulley to raise or lower a flag. Blinds, a crane, and cloth lines are all examples of pulleys.

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**Gear** – This simple machine is a toothed wheel. Two toothed wheels fit together so that one wheel will turn the other. Gears are used to control speed and direction of motion. A good example of a gear set is the gears connected by the chain on your bike. When you pedal forward, the bike goes forward. When you change to a higher gear your bike will go faster if you continue pedaling at the same rate.

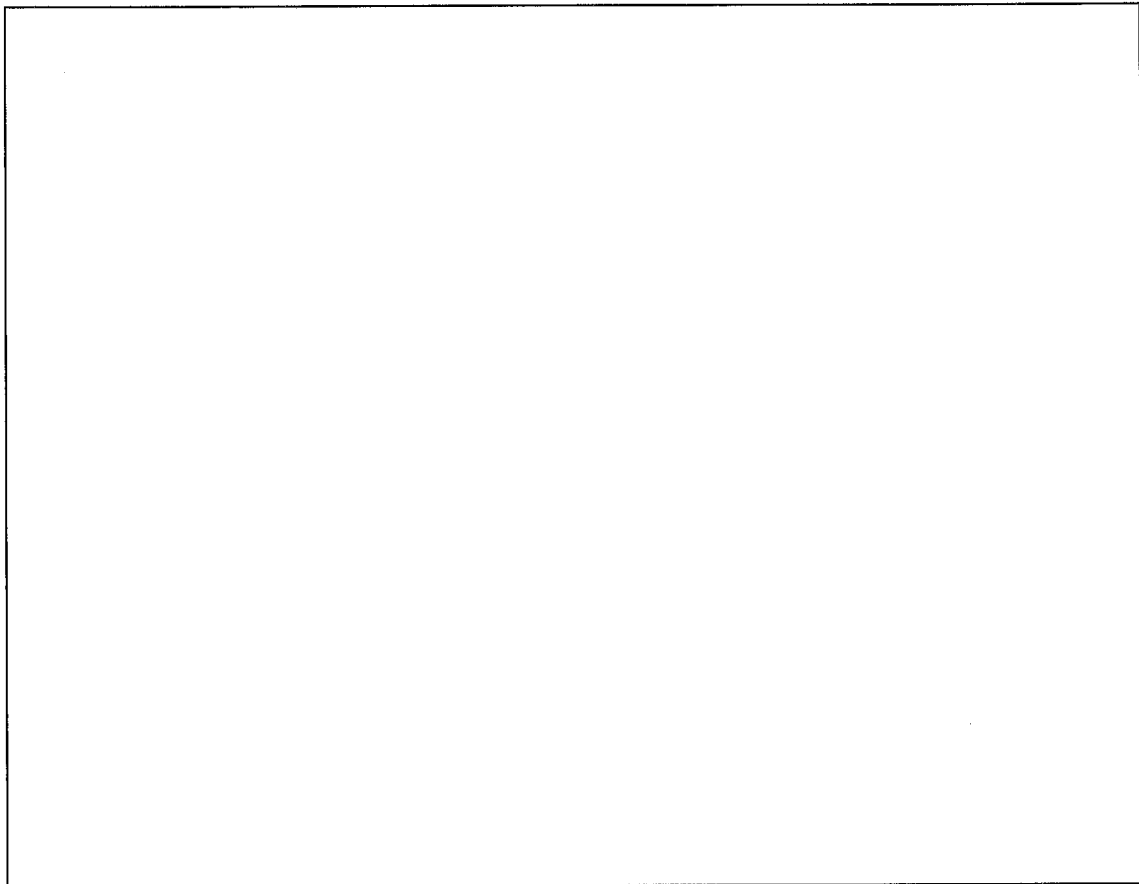
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### **What do you think?**

1. Think of a chore or task that you dislike doing and write it below. (Examples: making your bed, washing the dishes, or taking out the trash)
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2. Brainstorm ways you use simple and complex machines to make the task easier. Draw your design below.

A large, empty rectangular box with a black border, intended for drawing a design related to the task described in the previous step.

3. Label all of the simple machines in the drawing of your design.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Simple Machines Worksheet

Directions: Write down what type of simple machine is used in each of the objects.

<b>Object</b>	<b>Simple Machines</b>
Flag Pole	
Broom	
Car's Windshield	
Saw	
Clock	
Pin	
Light Switch	
Jar Lid	
Staircase	
Skates	
Bathtub	
Scissors	
Garage Gate	
Crane	

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Simple Machines are Hidden Everywhere

Riddle: What did the hungry lever say to the Wedge and Gear?

Find all the hidden words and then copy the letters that are left over to solve the riddle.

G	L	E	T	U	D	E	E	W	S
A	E	L	L	G	E	L	N	H	E
T	T	A	O	G	N	P	I	E	E
T	H	E	R	P	I	M	H	E	R
L	A	N	L	D	L	I	C	L	P
S	E	A	E	S	C	S	A	E	U
E	N	V	C	E	N	I	M	G	L
E	F	R	L	W	I	E	C	D	L
A	E	X	K	R	O	W	N	E	E
W	A	O	P	E	N	E	R	W	Y

AXLE  
GEAR  
INCLINED  
LEVER  
MACHINE  
PLANE

PULLEY  
SCREW  
SIMPLE  
WEDGE  
WHEEL  
WORK

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