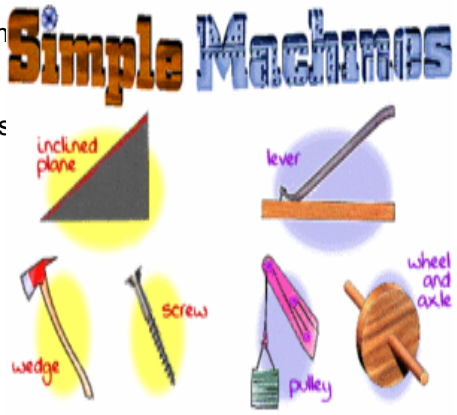
Name_____ Date_____

ACTIVITY: Objective 1: Identifying Common Simple and Compound Machines

INTRODUCTION



Simple Machine: A machine with few or no moving parts. Sim
Simple machines do work with only ONE movement.

There are six kinds of simple machines. The six simple machines

Inclined plane	Pulley
Wheel and axle	Lever
Wedge	Screw

Machines can make work easier in different ways. One way is by increasing the force that is applied to an object. For example, a car jack enables you to lift a heavy automobile. Machines can make work easier by increasing the distance over which a force can be applied (using a ramp to put furniture in a truck). Finally, machines can change the direction of an applied force. For example, when you open blinds by pulling a cord, the downward force on the cord is changed to an upward force that opens the blinds.

Compound Machine: Two or more simple machines working together to make work easier.
Examples: Wheelbarrow, Can Opener, Bicycle

LAB ACTIVITY

Login to your computer and go to the website: **http://www.edheads.org/activities/simple-machines/**

Make sure your sound is turned on.

Click the START button on the screen. BEFORE you begin the activity, read through the list of simple machines found on the next page. Your job is to go through each room of the house and to find all the simple machines and classify each one.

Please search the Tool Shed last, as the Tool Shed contains compound machines. It is better to be familiar with the Simple Machines (One action) first, and then try to figure out the combination of machines that go into each compound machine.

Your goal is to identify all simple machines in each of the rooms AND to answer the questions about certain machines within the room (see the questions on page 5). You must correctly classify each tool by writing the name of the tool under the correct simple machine in the table. Listen carefully to determine how many simple machines are in each room. Each category may have more than one simple machine.

On page 6. Label each part of the compound machine that are simple machines. For example, the staple arm is a lever and the staples are the wedges. In each case, be sure to fill in the column where you describe how each simple machine functions. You will need to use the descriptions on page 2, but be sure to use the definition to describe how THAT particular machine functions (don't just write the definition!

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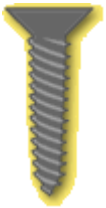
Gears:
Two toothed wheels fit together either directly or through a chain or belt so one wheel will turn the other. Some gears may have a screw or a toothed shaft in place of one of the wheels. A gear may also be a combination of toothed wheels that produces a certain speed (such as a bicycle's top gear which makes the bike go fast, and the low gear for slow speed.)
Examples: Clock, Automobile, Drill

Inclined plane:
A sloping surface, such as a ramp. An inclined plane can be used to alter the effort and distance involved in doing work, such as lifting loads. The trade-off is that an object must be moved a longer distance than if it was lifted straight up, but less force is needed.
Examples: Staircase, Ramp, Bottom of a Bath Tub

Lever:
A straight rod or board that pivots on a point known as a fulcrum. The fulcrum can be moved depending on the weight of the object to be lifted or the force you wish to exert. Pushing down on one end of a lever results in the upward motion of the opposite end of the fulcrum.
Examples: Door on Hinges, Seesaw, Hammer, Bottle Opener

Pulley:
A wheel that usually has a groove around the outside edge. This groove is for a rope or belt to move around the pulley. Pulling down on the rope can lift an object attached to the rope. Work is made easier because pulling down on the rope is made easier due to gravity.
Examples: Flag Pole, Crane, Mini-Blinds



Screw:
An inclined plane wrapped around a shaft or cylinder. This inclined plane allows the screw to move itself or to move an object or material surrounding it when rotated.
Examples: Bolt, Spiral Staircase

Wedge:
Two inclined planes joined back to back. Wedges are used to split things.
Examples: Axe, Zipper, Knife

Wheel and Axle:
A wheel and axle has a larger wheel (or wheels) connected by a smaller cylinder (axle) and is fastened to the wheel so that they turn together. When the axle is turned, the wheel moves a greater distance than the axle, but less force is needed to move it. The axle moves a shorter distance, but it takes greater force to move it.
Examples: Door Knob, Wagon, Toy Car

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Your name goes here...

Rooms in the house	Gears	Inclined Plane	Lever	Pulley	Screw	Wedge	Wheel & Axle
Garage							
Bedroom							
Kitchen							
Bathroom							

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Directions: Answer the questions about the simple machines in each part of the house.

Bedroom	Bathroom
1. How is a baseball bat a lever?	1. How is a toilet paper dispenser a wheel and axle?
2. How is the front of a ship a wedge?	2. Besides a lever, what other simple machine do you think that a faucet handle could be?
3. How are the fan blades an inclined plane?	3. How is a door knob a wheel and axle?
4. How are show laces like pulleys?	4. What is a block and tackle?
Garage	**Kitchen**
1. Where is the fulcrum of a broom?	1. How does the cookie jar use a simple machine?
2. What is the purpose of gears?	2. Why are stairs used as opposed to just jumping up to another level?

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Neo Video clip 7min https://www.neok12.com/video/Simple-Machines/zX674c50636d464d4f407f67.htm

Interactive site: http://aspire.cosmic-ray.org/Labs/Machines/act1a/lab1.html

Brainpop Interactive site and videos: https://www.brainpop.com/games/simplemachinesgame/

Test what you know quiz: http://www.softschools.com/quizzes/science/simple_machines/quiz392.html

Match Game: https://www.quia.com/jg/450529.html