

SIMPLE MACHINE

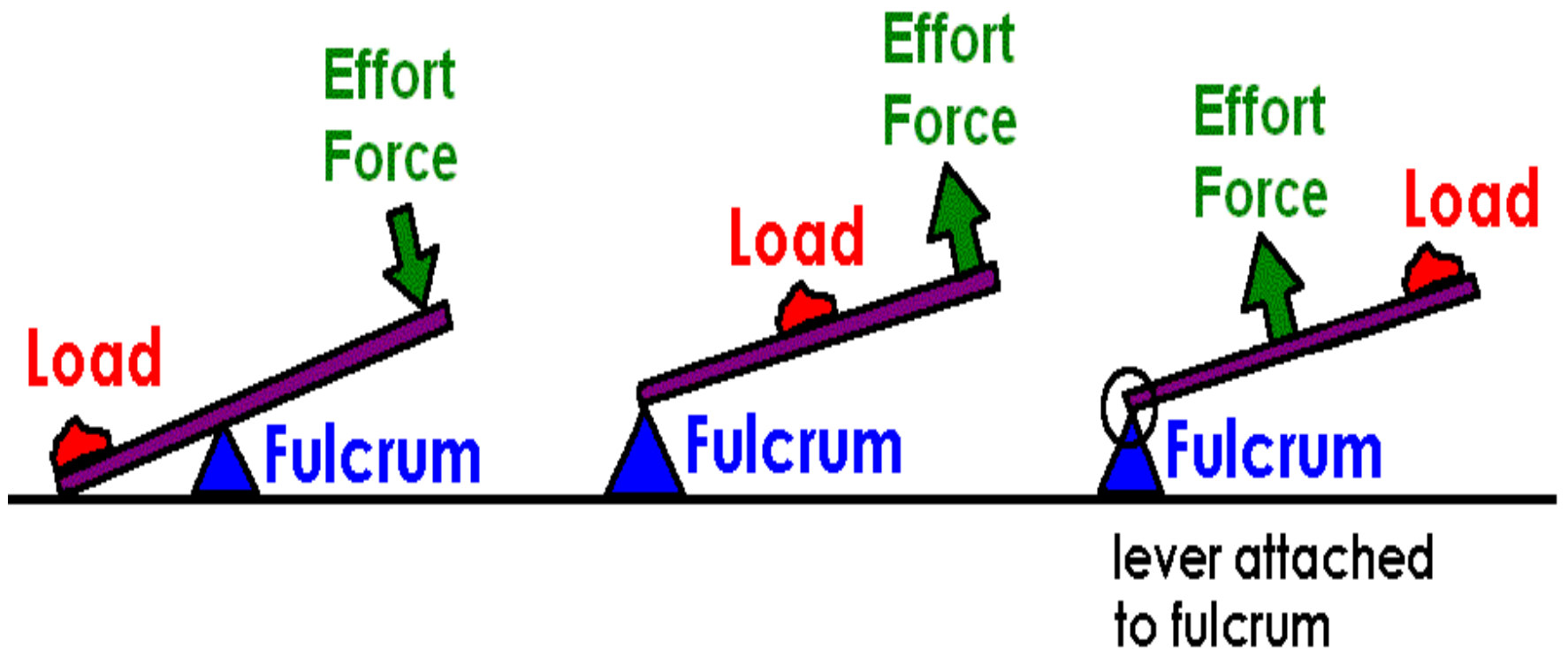
Describe the 3 types of levers:

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- A first class lever is like a teeter-totter or see-saw. One end will lift an object (child) up just as far as the other end is pushed down.
- A second class lever is like a wheel barrow. The long handles of a wheel barrow are really the long arms of a lever.
- A third class lever is like a fishing pole. When the pole is given a tug, one end stays still but the other end flips in the air catching the fish.

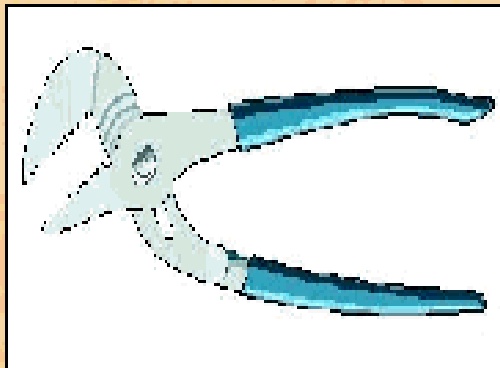
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Diagrams of Levers



Diagrams of Levers

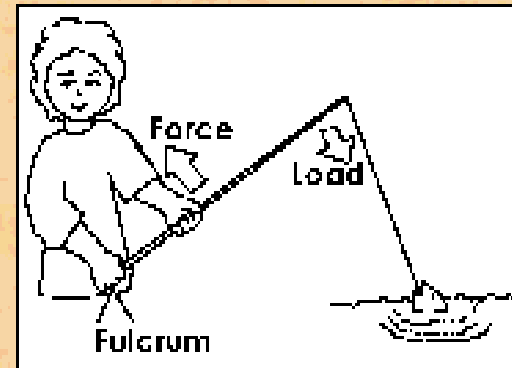
1st Class Lever



2nd Class Lever



3rd Class Lever



http://www.professorbeaker.com/lever_fact.html

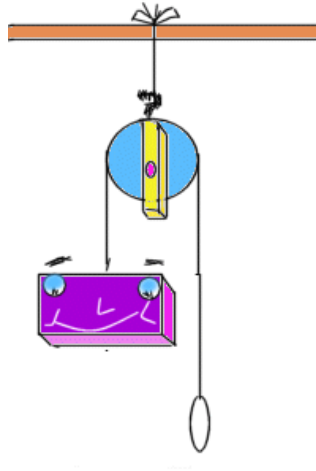
Describe PULLEYS

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A simple machine made with a rope, belt or chain wrapped around a grooved wheel. A pulley works two ways.

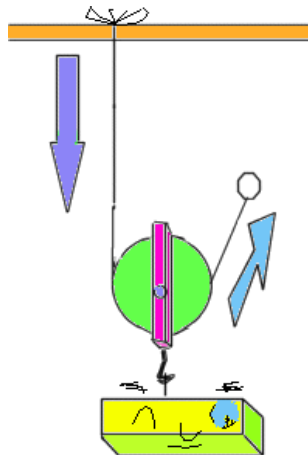
Diagrams of Pulleys

Fixed pulley:



<http://www.smartown.com/sp2000/machines2000/pulley2.htm>

Movable Pulley:



<http://www.smartown.com/sp2000/machines2000/pulley3.htm>

How does a pulley work?

How does a pulley work?

A pulley works two ways.

It can change the direction of a force or it can change the amount of force.

What are the types of pulleys?

What are the types of pulleys?

- **Fixed pulley**
 - Does not multiply force.
 - Changes the direction of the effort force.
 - Mechanical advantage is equal to one.
- **Movable pulley**
 - Multiplies effort force but cannot change direction of the effort force.
 - Mechanical advantage is the effort distance divided by the resistance distance.
- **Pulley system**
 - A combination of fixed and movable pulleys.
 - Mechanical advantage is equal to the number of supporting ropes.

How does a fixed pulley work?

How does a fixed pulley work?

A fixed pulley changes the direction of the applied force. (Ex. Raising a flag)

How does a moveable pulley
work?

How does a moveable pulley work?

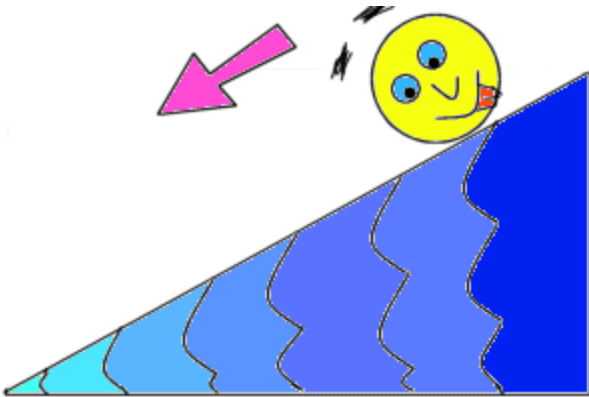
A movable pulley is attached to the object that is being moved.

What is an inclined plane?

What is an inclined plane?

A simple machine with no moving parts. It is simply a straight slanted surface. (Ex. a ramp.)

Diagram of Inclined Plane



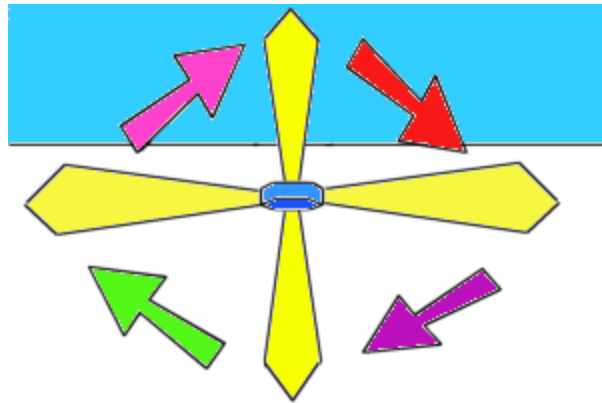
<http://www.smartown.com/sp2000/machines2000/inclinedplane.htm>

What is a wheel and axle?

What is a wheel and axle?

A wheel and axle is a modification of a pulley. A wheel is fixed to a axle. The wheel and axle must move together to be a simple machine. Sometimes the wheel has a crank or handle on it. Examples of wheel and axles include roller skates and doorknobs.

Diagram of Wheel & Axle



<http://www.smartown.com/sp2000/machines2000/wheelandaxle.htm>

What is a wedge?

What is a wedge?

A modification of an inclined plane that moves . It is made of two inclined planes put together. Instead of the load being moved up an inclined plane, the inclined plane moves the load.

Diagram of Wedge



Wedge

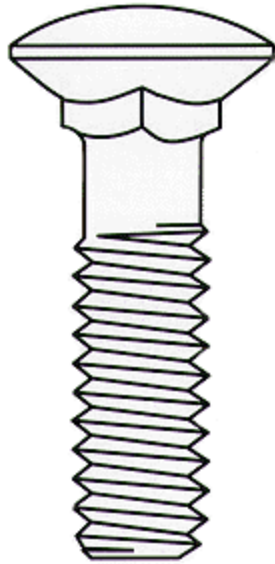
www.angelfire.com/scifi/dschlott/simplemachines.html

What is a screw?

What is a screw?

**A simple machine that is like an inclined plane.
It is an inclined plane that wraps around a
shaft.**

Diagram of Screw



Go to this link for more information about machines. Remember to hit the “back” button on your browser to return to this slide show.

<http://www.usoe.k12.ut.us/curr/science/sciber00/8th/machines/sciber/intro.htm>