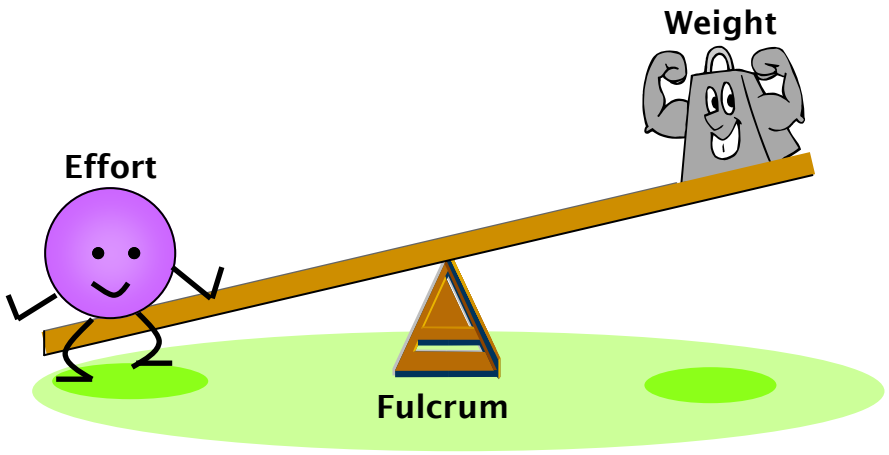
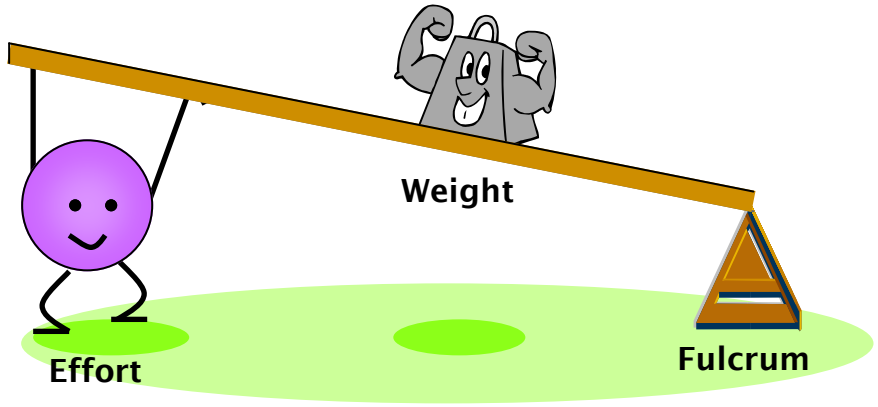
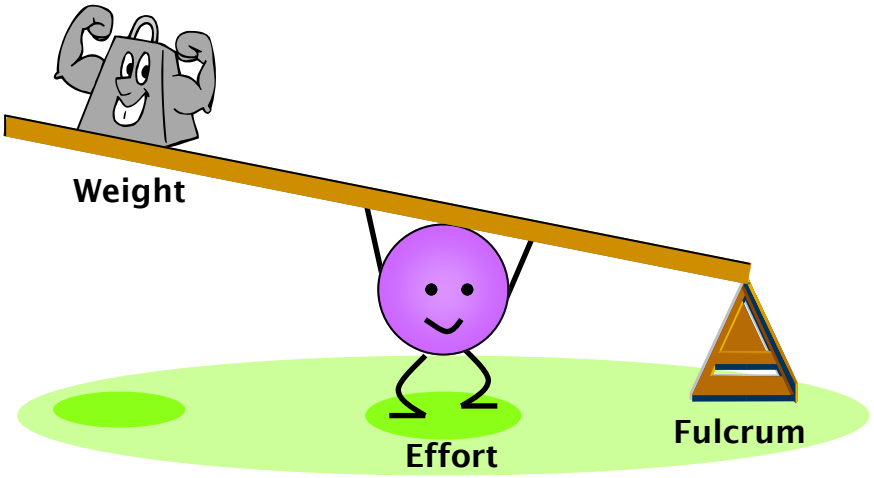
Classes of Levers



Class I Lever

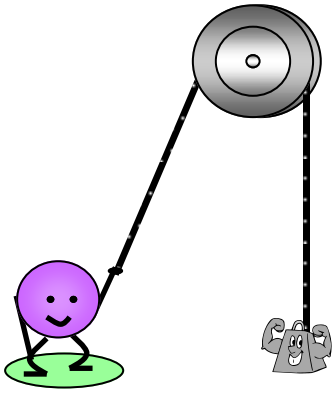


Class II Lever

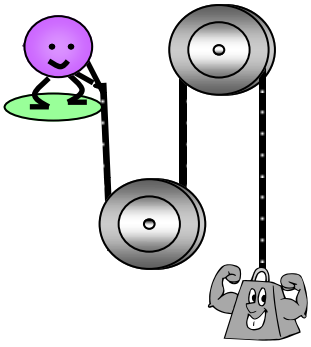


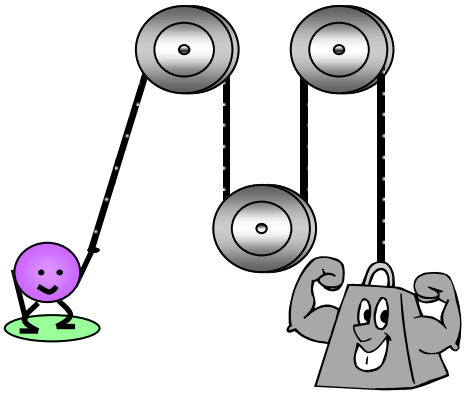
Class III Lever

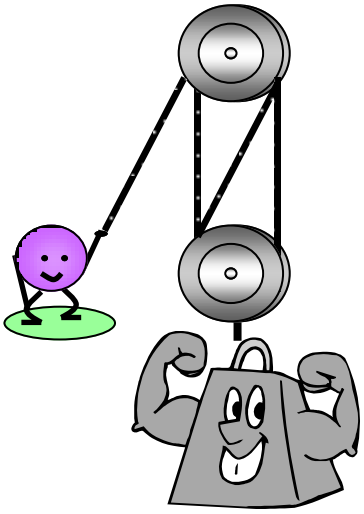
Simple Pulley



Compound Pulleys

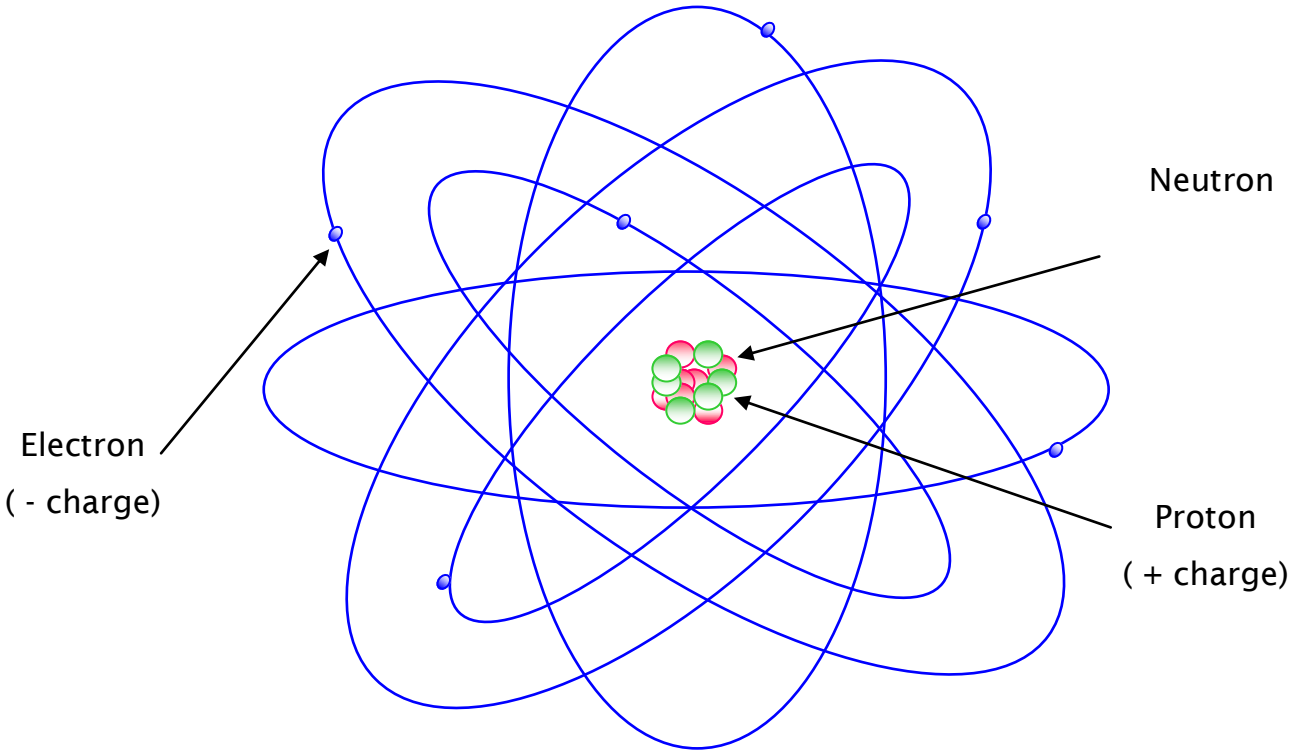




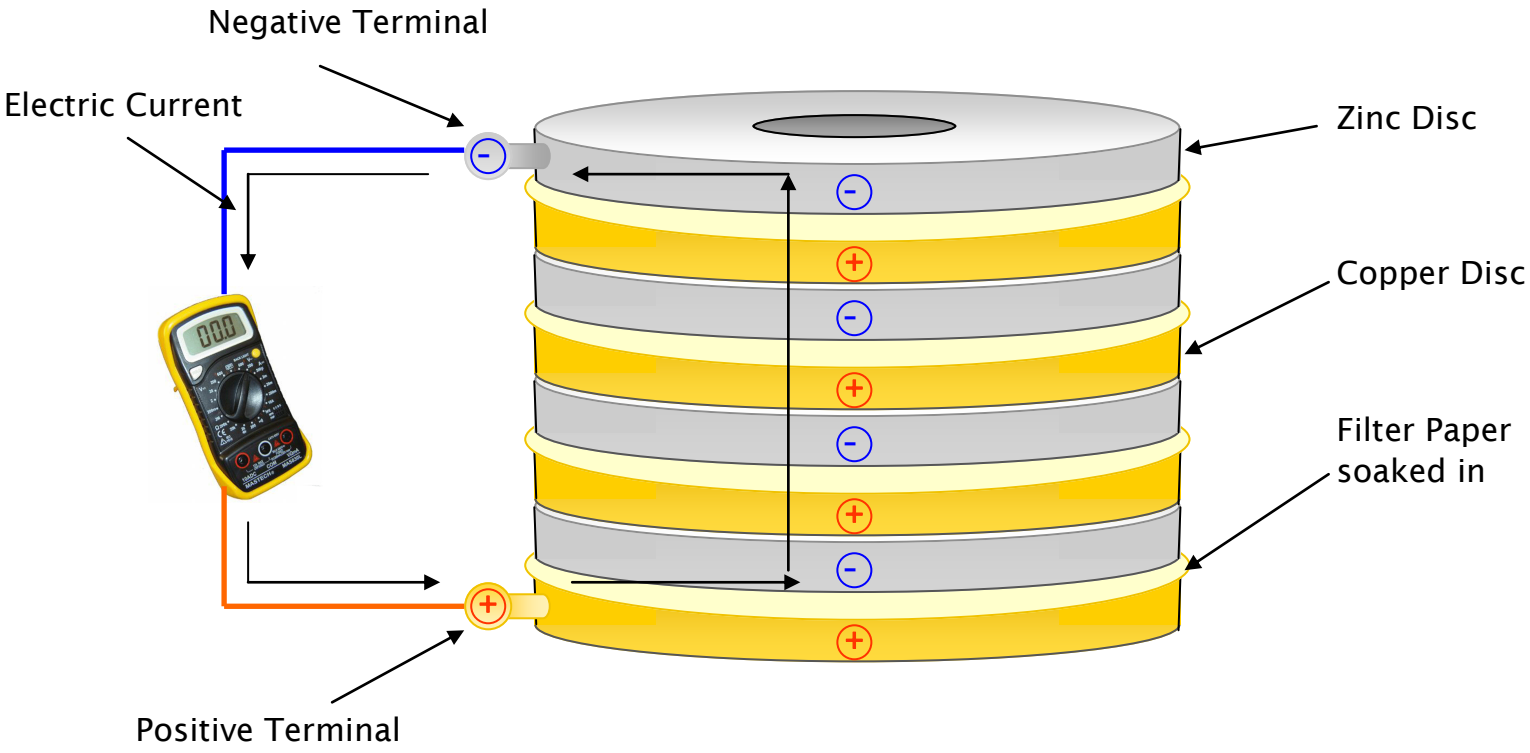


It is interesting to note, the weight that can be lifted by the same strength is larger as you add more pulleys.

Atom Diagram



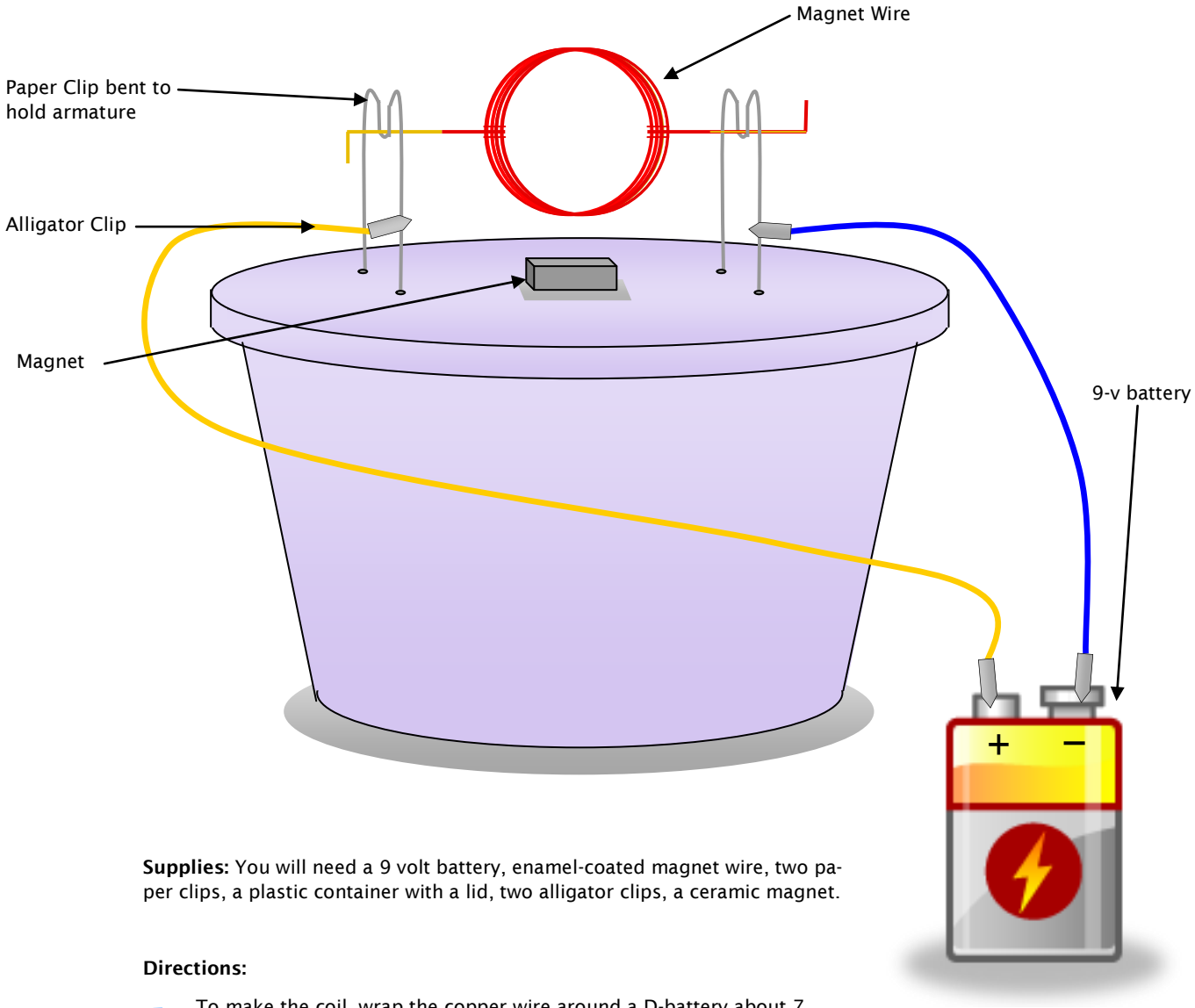
Voltaic Pile



Make your own Voltaic Pile: You will need 10 pennies, 10 zinc washers, filter paper (coffee filters), lemon juice, alligator clips, and a voltmeter. Cut 10 circles the size of the washers out of the filter paper. Soak the circles in lemon juice. Layer the washer, soaked filter paper, penny repeatedly until you have 10 layers. Connect an alligator clip to the top washer. Connect another alligator clip to the bottom penny. Hook the alligator clips to the voltmeter. Do you get a reading? What reading do you get if you take away some layers? What reading do you get if you add layers?

How does a voltaic pile battery work? The lemon juice starts to eat away at the zinc disc, causing the zinc atoms to lose 2 electrons. When the zinc atom loses 2 electrons it becomes an ion. These new zinc ions become free floating and begin to look for new electrons. They float over to the copper disc and take two electrons from the copper atoms. These copper atoms become ions looking for new electrons to take the place of the missing ones. They take the left over zinc electrons. Pretty soon you have a flow of electrons up the voltaic pile. The electrons will flow out of the negative terminal through the wire, register voltage on the voltmeter, and flow back into the positive terminal. The chain reaction will continue until the lemon juice has lost its acidity and no longer continues to break down the zinc atoms.

Simple Motor Plans



Supplies: You will need a 9 volt battery, enamel-coated magnet wire, two paper clips, a plastic container with a lid, two alligator clips, a ceramic magnet.

Directions:

1. To make the coil, wrap the copper wire around a D-battery about 7 times, leaving 3 inches of wire on either side. Completely sand the red enamel off one of the straight pieces. Only sand half of the red enamel off of the other straight piece. Bend the ends of each straight piece. Bend one up and one down.

2. To make the armature, take two paper clips and bend them in the shape you see above. Push them through the plastic lid of your container. Bend the ends of the paper clips on the underside of the lid and tape them in place. Rest the coil in the bend of the armature.

3. Tape the bar magnet directly under the coil, and attach the alligator clips to the armature and the battery.

4. Gently give the coil a push and watch your motor spin.

Adapted from Beakman's motor plans http://fly.hiwaay.net/~palmer/motor.html

Science Summary Sheet

This area is for a drawing of the science topic you are studying.

Science Experiment Sheet

This area is for a drawing of the experiment.

What we used:

What we did:

What happened?