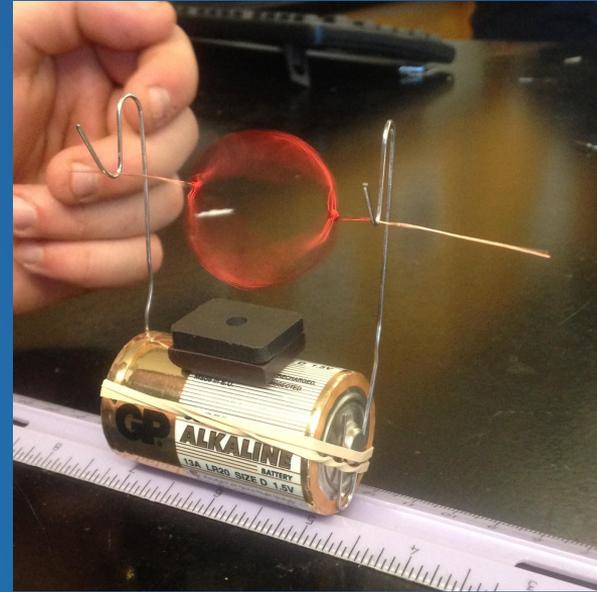


# How to build an electric motor for dummies



By Dan Kessel & James Ruth

# Materials you will need



2 Paperclips



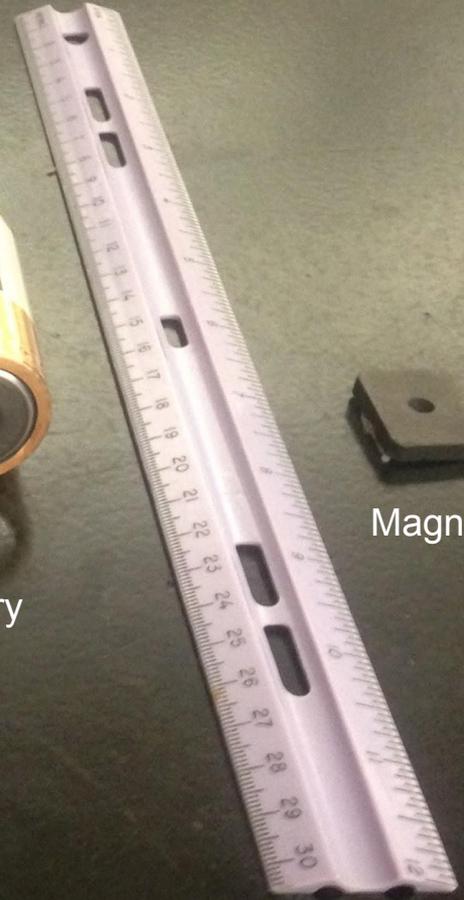
1 Rubber Band



Magnet Wire



Battery



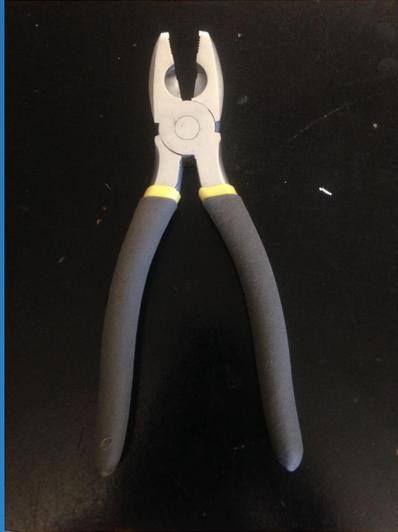
Ruler



Magnet

# Tools you will need

You'll also need a brain (and preferably hands)



You'll need a set of pliers and a set of wire cutters. You can also use pliers with built in wire cutters

You'll also need some sandpaper

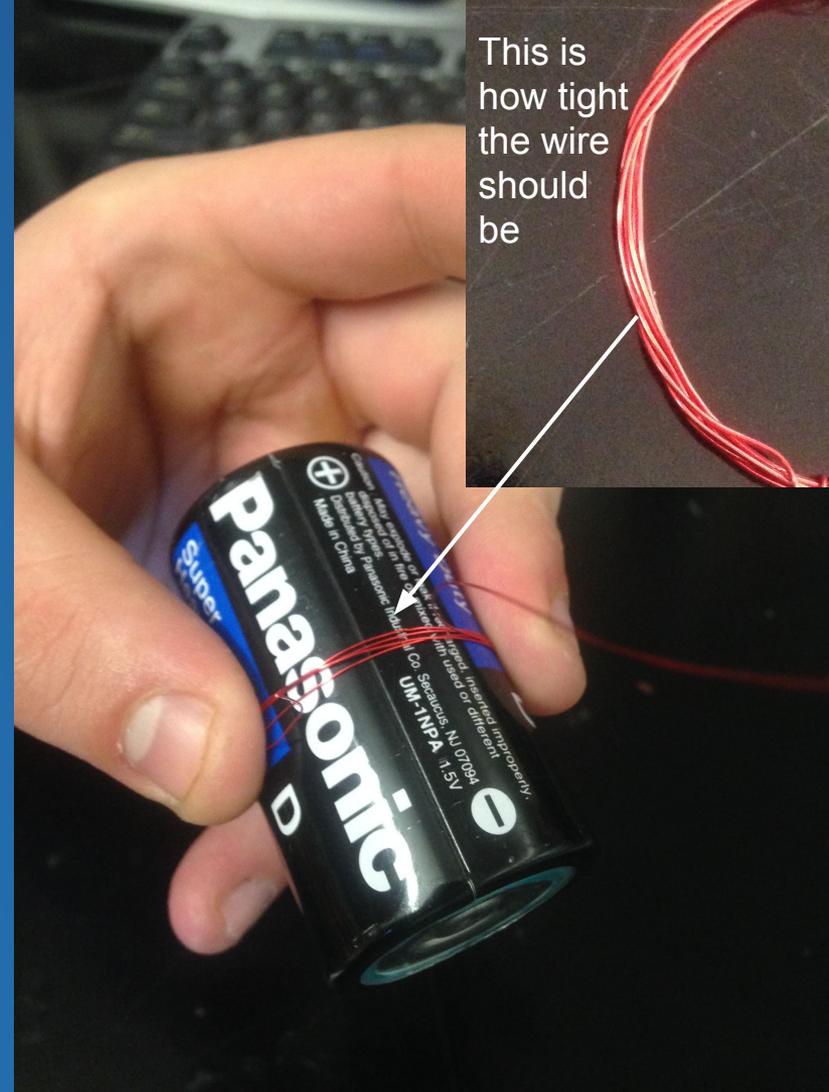


# Step 1) Let the Assembly Begin

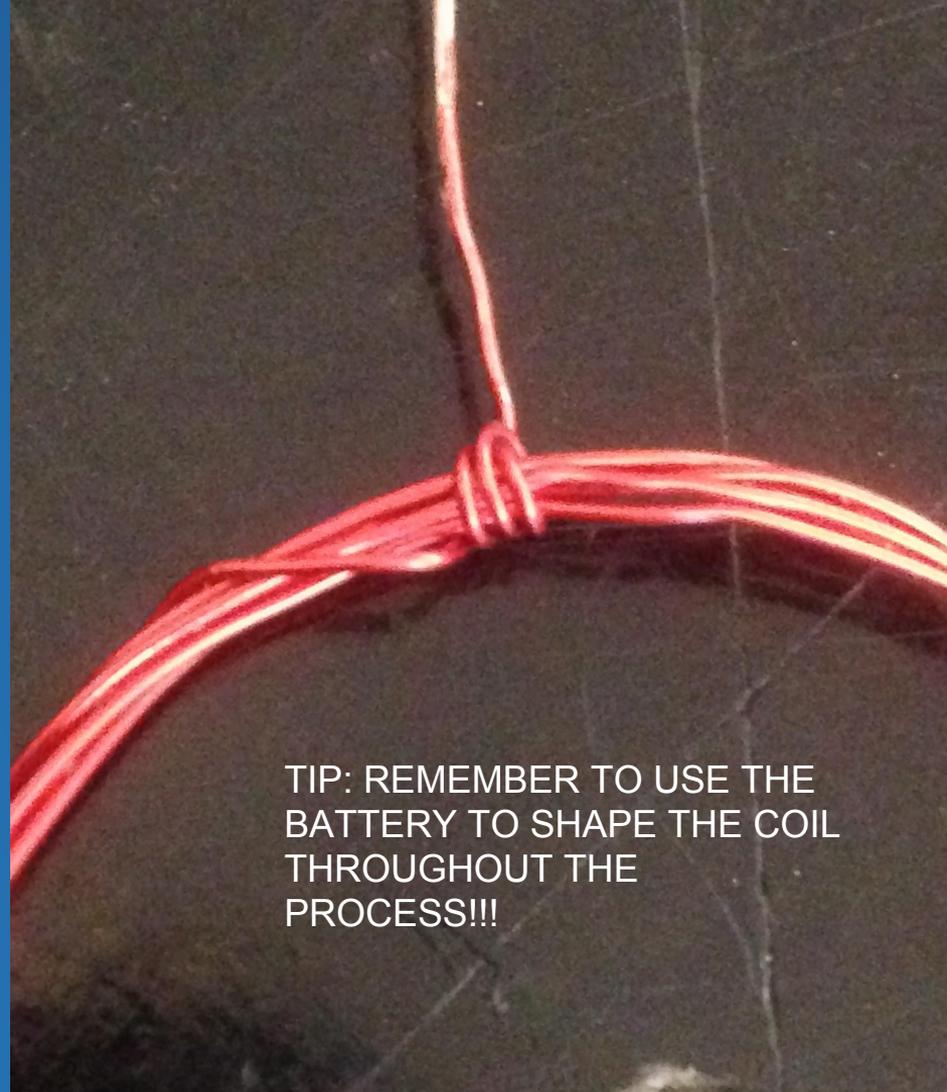
Take a Arms length of wire, maybe a little extra if you have shorter arms.



Step 2) Wrap the wire around the battery snugly for shape. Leave about 2 inches of wire on opposite sides of the coil.

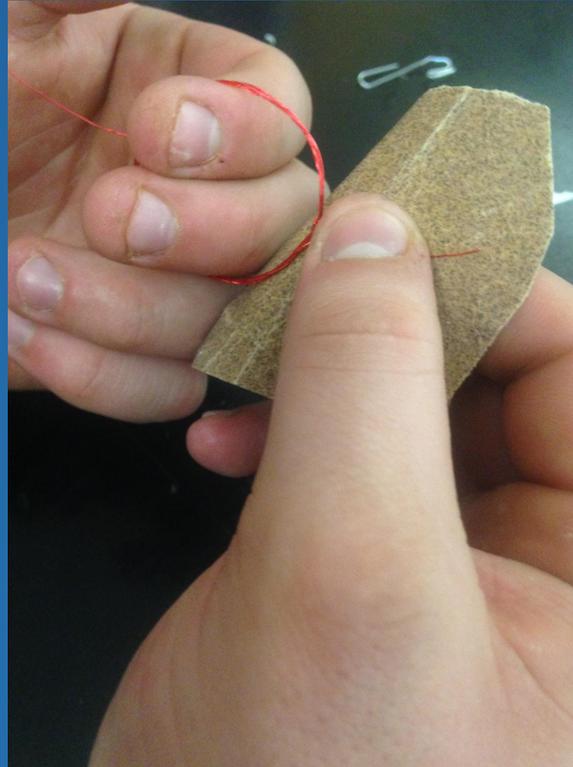


Step 3) Wrap the ends that you left until their position is secured. There should be about an inch and a half of wire left on either side



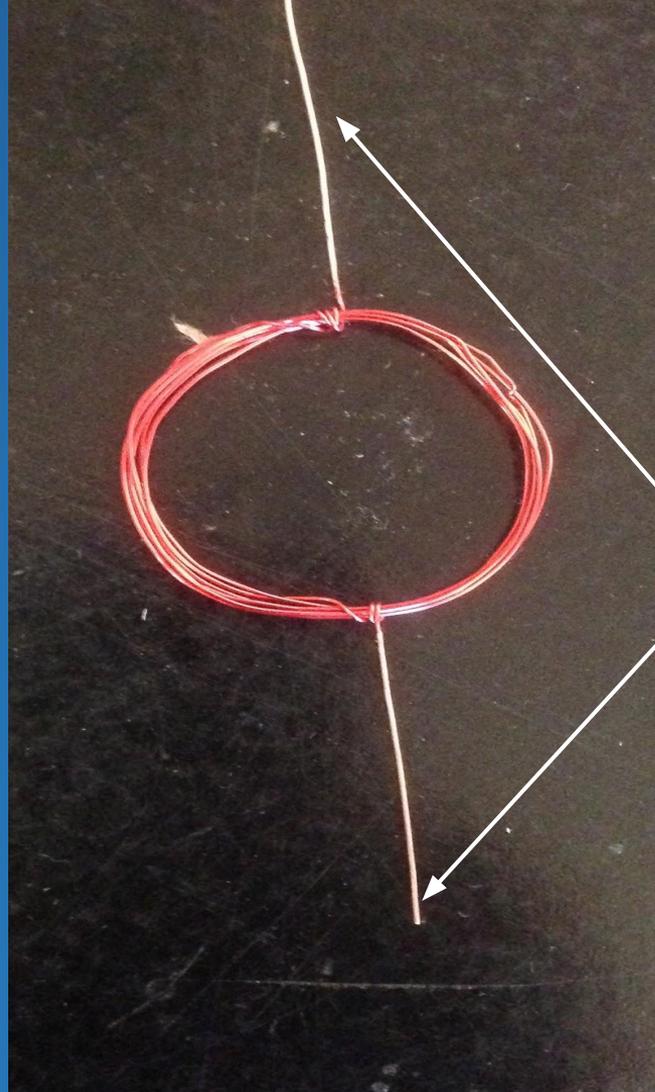
TIP: REMEMBER TO USE THE BATTERY TO SHAPE THE COIL THROUGHOUT THE PROCESS!!!

Step 4) shave one end of the wire so half the red paint is off and shave the other end so the red is completely off. **MAKE SURE TO SHAVE COMPLETELY.**



MAKE SURE TO SHAVE EXACTLY HALF

Your finished coil should look something like this.

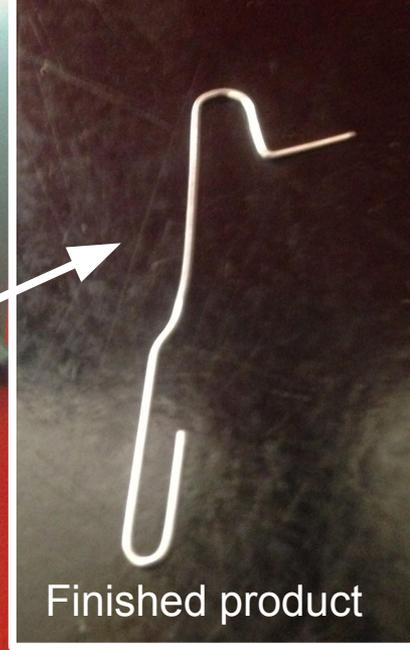
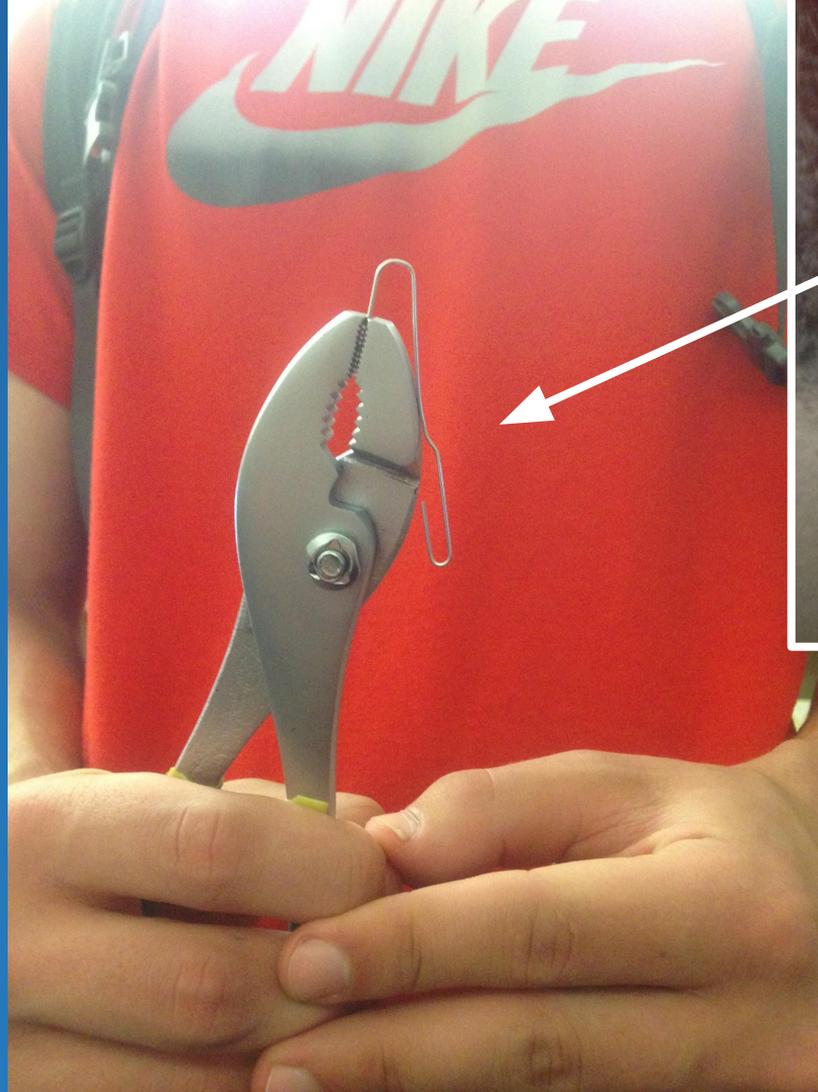


Remember!! to make the straight wire ends are exactly opposite from one another so the coil is balanced..

Step 5) Wrap the rubber band around the battery the long way twice.



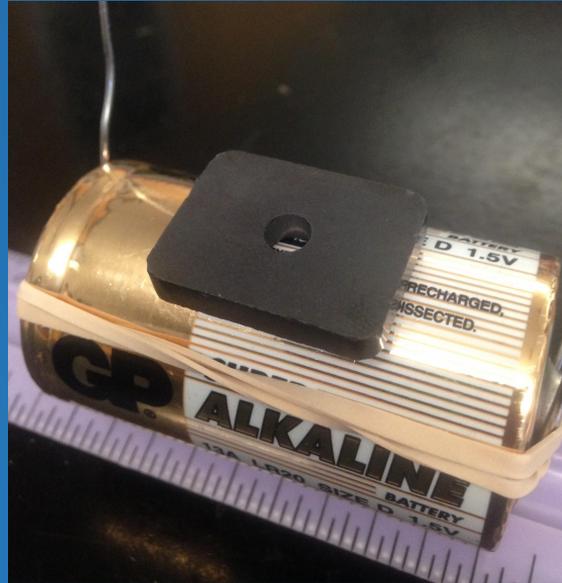
Step 6) Bend the inside section of the paper clips out and bend them into this shape



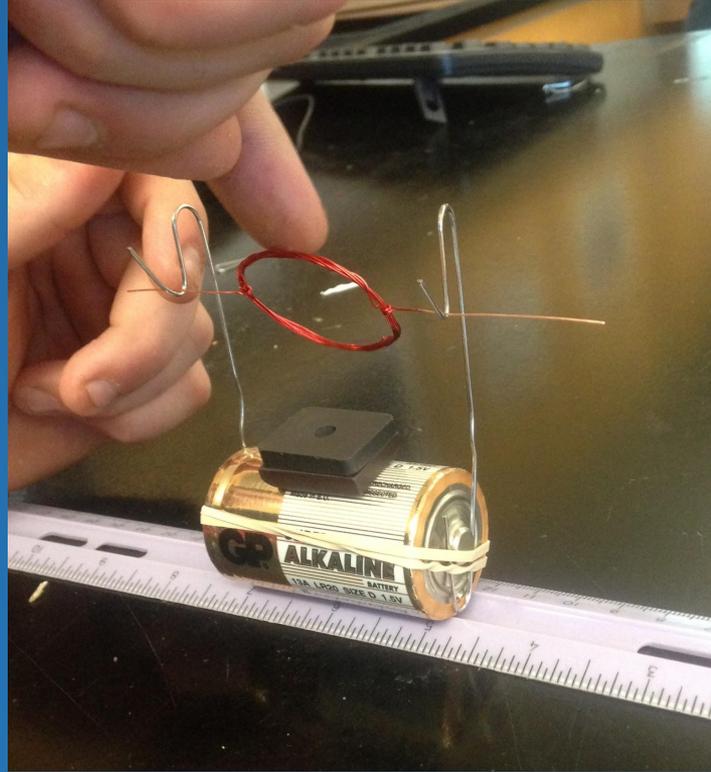
Step 7) Put your bent paperclips on opposite sides of the battery make sure that it is secure and each paperclip touches the metal ends of the battery.



Step 8) Place the magnet on the battery between the two paper clips



Step 9) Place the coil on the paper clips and watch your motor spin! (put your motor on a ruler to keep it from rolling around)



You may need to give it a little push to get it going