

Name: _____

Build A Simple Electric Motor

MATERIALS

These are the necessary equipment.

- 2 x 1.5 V battery in series in cell holders
- 1 ceramic/neodymium magnet
- 20-30 cm long copper/magnet wire
- 2 large paper clips
- Tape
- sandpaper or scissors



PROCEDURE

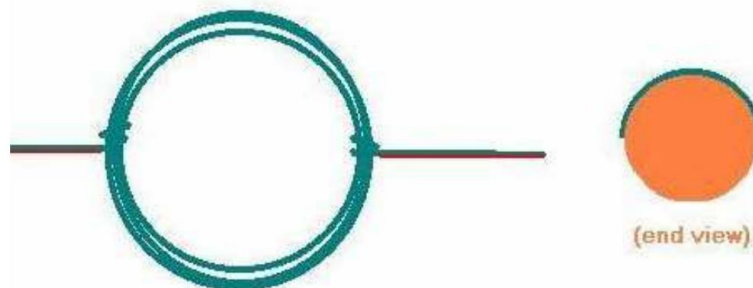
Wrap the wire around a pen (or another cylindrical object, from 1 to 4 cm in diameter, you choose).



Now wrap the ends back around the coil. This will both support the coil and create the "axle" for your motor. This is the most challenging part of the experiment...

It is critical that the axles balance the coil. That is, they must be almost exactly opposite one another on the circle of wire.

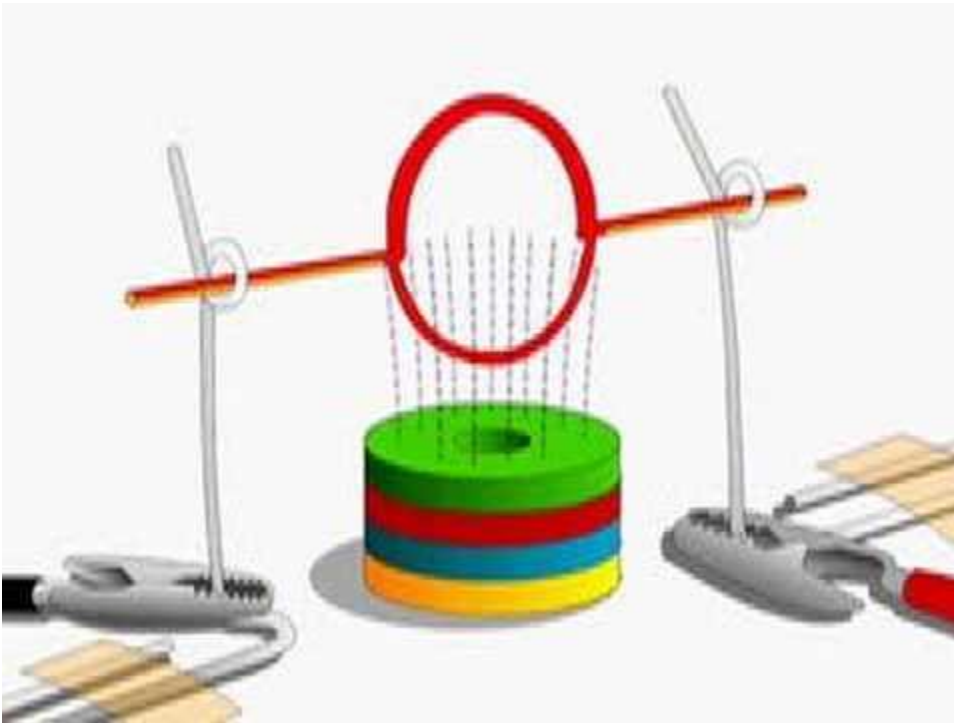
Now use a piece of sandpaper to remove the enamel from the "bottom" of the wire on both sides. It is very important that you remove ALL the paint out of ONLY the "bottom" of the wire.



Why is this step important? Think about the direction of the current.

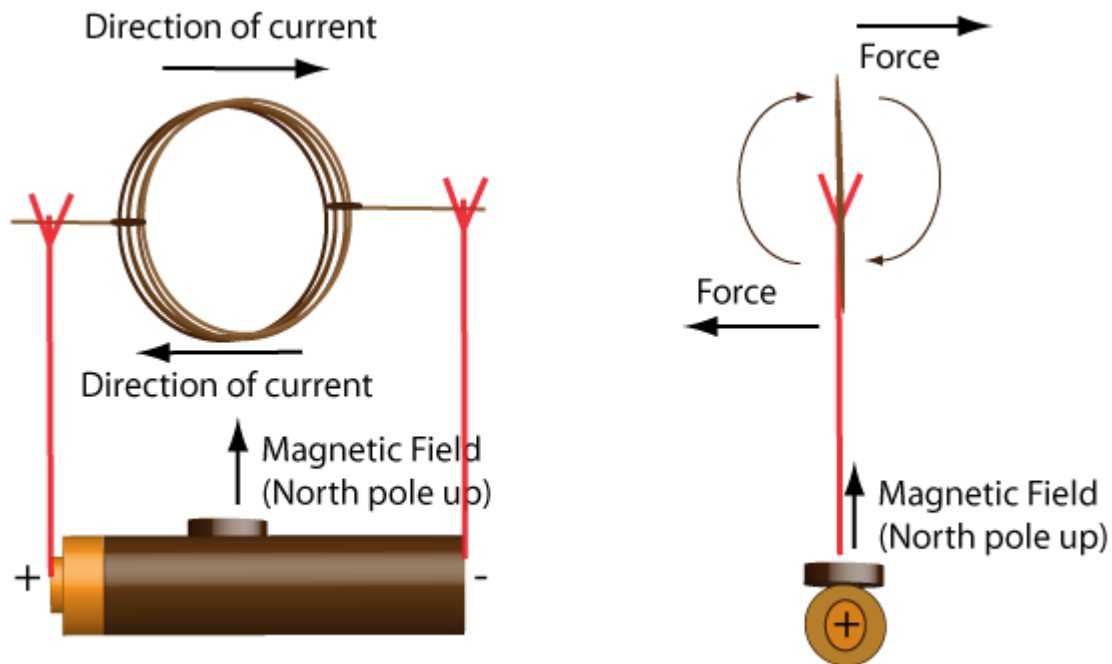
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Now it is assembly time! Look at the picture below. You want to twist your paper clip so that half sits on the table and the other half you can modify into a loop or holder shown below:



You can then tape the paper clip to the table for support.

You are welcome to do any modifications you find appropriate! You can try connecting your paper clip directly to the battery itself.



** the coil is wound clockwise

That's it. Is your motor spinning????