

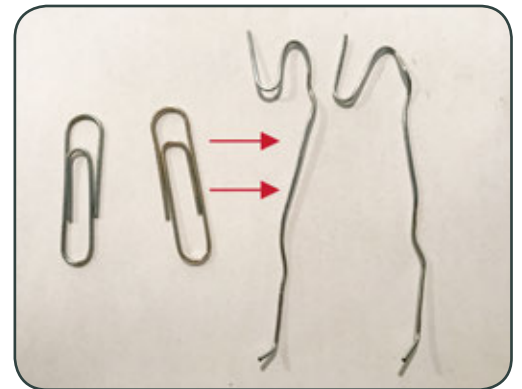
## Motor Apparatus

To make the apparatus:

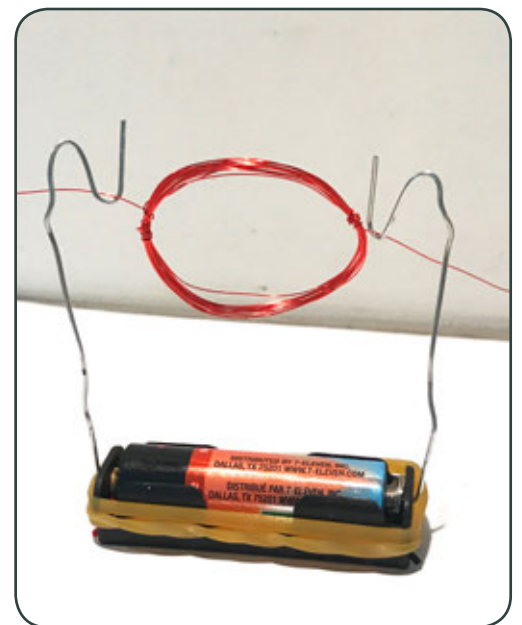
1. With a length of magnetic enamel wire, make a circle of about 20 loops. If you need help making your circle, loop the wire around a circular object, such as a paper towel tube, battery, plastic cup, or water bottle. Be sure you leave a "tail" of approximately 2 inches of wire on each side of the circle.
2. Wrap the two "tails" around the circle of wire several times to help the circle keep its shape and to hold the wires in the circle together.
3. Take two paper clips and unbend them to look like the ones shown in the picture. Use the unbent paper clips to hold up the circle of wire you made in the previous steps.
4. Place the battery into the battery case, making sure the positive (+) end of the battery is lined up with the (+) end of the case.
5. Take the unbent paper clips and insert them through the holes on each end of the battery case.
6. Use the rubber bands to hold the paper clips in place by stretching them around the base of the battery case.
7. Use sandpaper to rub off the outer coating of each end of the wire. To do this, lay the coil flat on the desk and sand only the top of the wire on each end. If the enamel is not scraped off correctly, the motor will not work.



Steps 1 and 2



Step 3



Steps 5, 6, and 7

Images via WestEd [CC BY-NC-SA 4.0]