

Homopolar Motor

BASIC HOMOPOLAR MOTOR

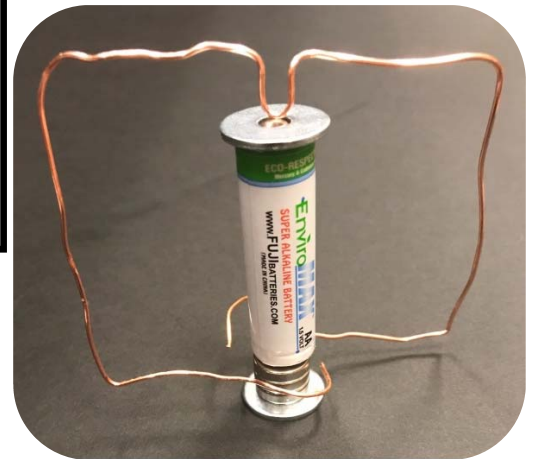
- Stack the neodymium magnet on top of one of the washers
- Connect the negative end of the AA battery to the magnet
- Put a washer on top of the positive end of the AA battery
- Follow the template to shape the copper wire
- Place the copper wire mechanism on top of the washer touching the positive end of the battery and with one end touching the magnet
- Watch it spin

AA battery

Neodymium magnet

Bare copper wire

2 Washers



TRY IT... WHAT HAPPENS

if you flip the magnet?

If you add another magnet?

If both ends of the wire touch the magnet?

If the wire is thicker?

If the wire is not copper?

If both ends of the wire touch the magnet?



Where is current moving in this apparatus?

Where are magnetic fields?

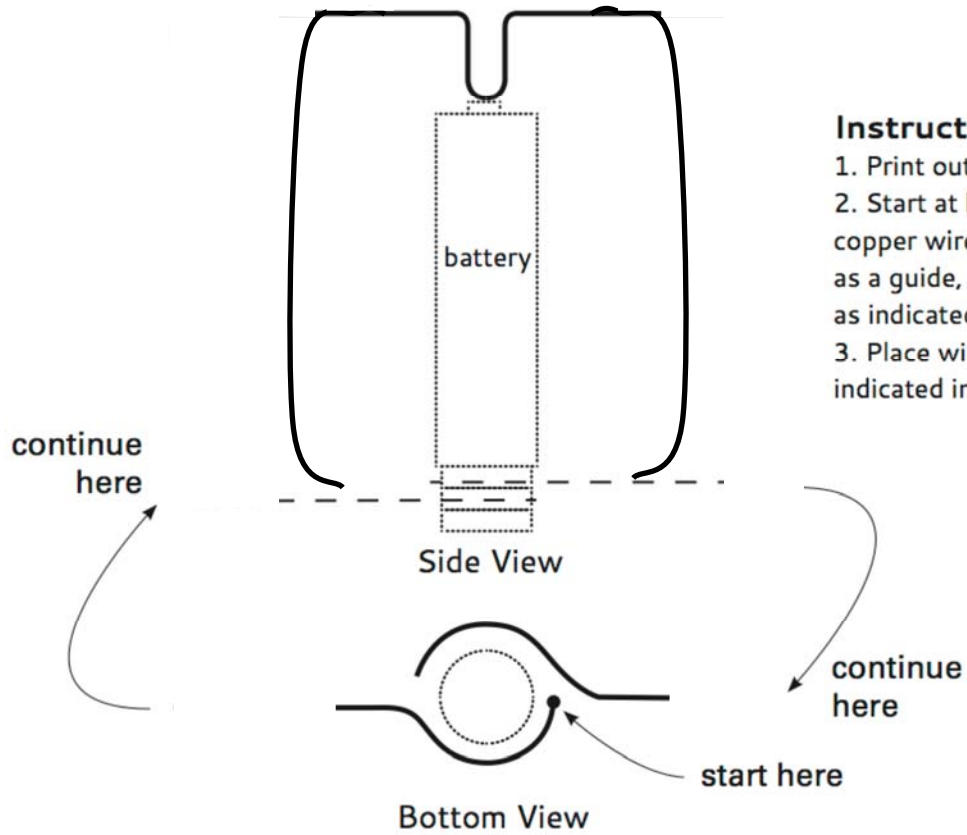
Current moving through a wire creates a magnetic field. Magnets also create a magnetic field. The opposing magnetic forces cause the wire to move.

DANCER HOMOPOLAR MOTOR

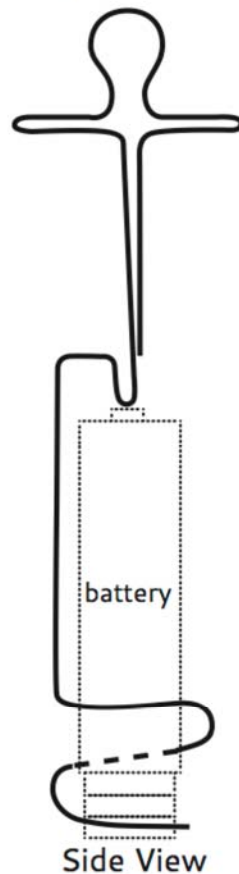
- Use the same battery/washer/magnet base as the Basic Homopolar motor
- Follow the dancer template to create a person shape using copper wire
- Optional: add a costume with the sticky side of a post-it note
- Place the dancer on top of the battery/washer/magnet base
- Watch it spin!



Basic Homopolar Motor



Tiny Dancer



Instructions:

1. Print out template
2. Bend copper wire using template as a guide
3. Place wire on battery as indicated in template

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