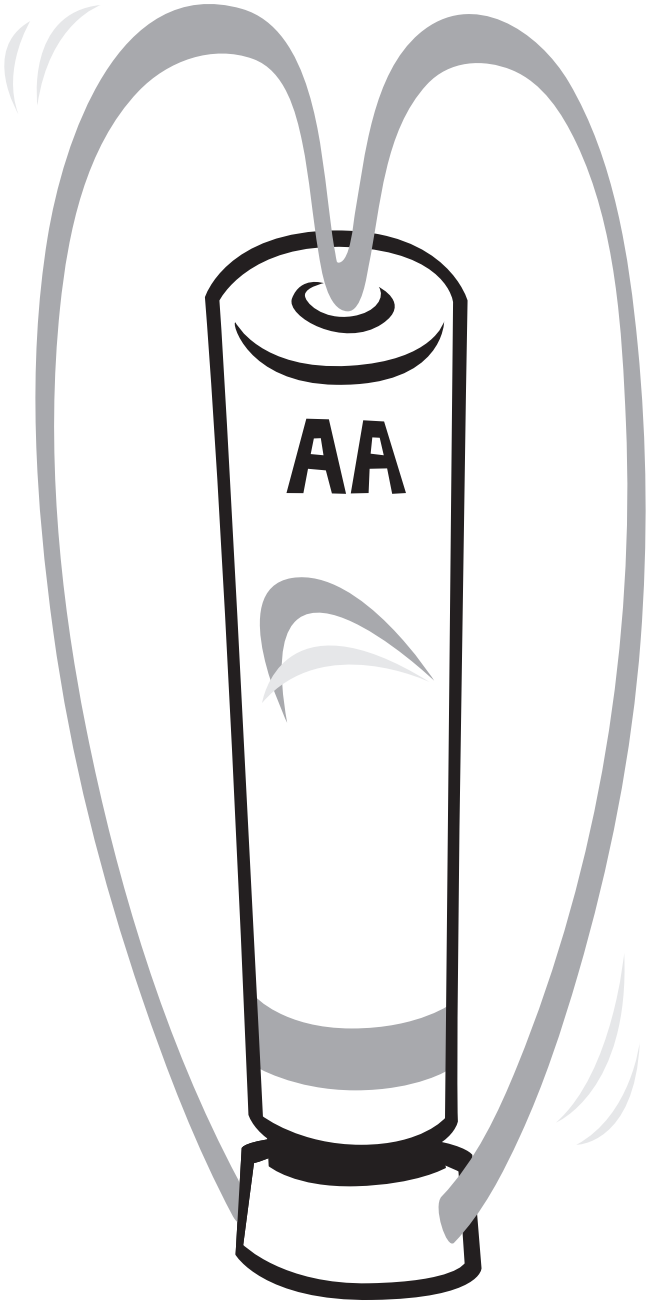
BUILD A BATTERY-POWERED MOTOR

The law of conservation of energy states that energy cannot be created or destroyed, but it can be transferred or transformed. In this experiment, you'll convert electrical energy from your battery to mechanical energy with the help of a magnet and copper wire.

MATERIALS:

AA battery, copper wire, neodymium magnet, pliers



HOW TO:

1. Attach the magnet to the negative end of the battery and stand the battery on its end.
2. Use the pliers to bend the copper wire into a heart shape, so that one end touches the positive side of the battery and the other end grazes the magnet under the negative side of the battery.
3. As the copper wire grazes the magnet, the wire will begin to spin.
4. Try bending the wire into different shapes to make the copper wire spin faster. Make sure one end is touching the positive terminal and the other is touching the neodymium magnet.

HOW IT WORKS:

You've just created a simple motor by completing an electric circuit. An electric current is passing through the copper wire from the AA battery and flowing into the magnetic field that the magnet creates. This attraction or repulsion causes movement in the wire. These types of motors are used in electric cars, computers, and even simple things like electric toothbrushes!