




Equipment

- Battery (D cell is best to start with)
- Elastic band
- Tape if needed
- Large safety pins x2
- Insulated copper wire (~1m)
- Scissors or knife for scraping
- Magnet
- Blue tack if needed

Make an Electromagnetic Motor

Instructions

1. Loop the copper wire six times around the battery, then remove it and twist the loose ends around opposite sides of the coil to keep the shape. Your wire should look like this:
2. Wrap the elastic band around the length of the battery, making sure it crosses both terminals.
3. Tape the elastic band in place if you need to, and then tuck the safety pins into the elastic band. One pin goes on each end of the battery (the terminals), and make sure that there is good contact between the pin and the terminal.
4. You can then blue-tack the battery to a surface if you need to keep it steady.
5. Use the craft knife to scrape the insulation off 2-3cm of the ends of the copper wire (all the way around on one side, half-way around the wire on the other).

Warning: Be careful here, if you remove too much insulation you might make a short circuit and the wire will heat up!

6. Slide the copper wire loop into the ends of the safety pins and hook the wire ends so it doesn't fall out. Your final set up should look like the picture below.
7. Place the magnet on the battery or hold it near the copper wire. You might need to give the wire a push-start to get it spinning. (See <https://www.youtube.com/watch?v=oRSU4FnUSrA>)

