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Learn more about the power of electricity with these fun experiments.

Magic bending water

Amaze your friends with the power of static electricity.

What you need

- Balloon
- Tap

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Blow up a balloon. Rub it on your hair for about 30 seconds. Turn on a tap to allow a slow **Stream of running water.** Place the balloon near the 🧧 flowing water (don't actually touch it) and watch in amazement as the water bends towards the balloon.

How does it work?

When you rub your hair with a balloon, tiny negatively charged particles called electrons move from your hair and build up on the balloon's surface. This makes the balloon negatively charged. Water molecules have positively charged and negatively charged ends. The positive ends of the molecules are attracted towards the negatively charged balloon, and because they can move freely in a liquid, the water magically bends.



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LAMY

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Things to make and do

Make a motor

Build a simple electric motor.

What you need

- 1 AA battery
- 30cm copper wire
- Pliers
- 3 neodymium magnets

Bend your length of copper wire into a symmetrical shape (the same on both sides) using pliers. It needs to be slightly longer than the battery. Make sure that the coils will touch the sides of the magnets. To make neat coils, wrap the wire around the battery.

Attach the magnets to the battery's

negative terminal (the flat end).
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Place the wire carefully onto the battery, with the pointy end on the positive terminal. Your motor should starting spinning.

Potato power

Harness the energy from a spud.

What you need

- 1 large potato, cut in half
- 2 copper coins or nails
- 3 pieces of copper wire
 2 zinc-plated (galvanized) nails or screws
- 1 LED

Push a copper coin (or nail) into one side of each potato half. Leave a bit sticking out.

Join the two copper coins (or nails) in each potato half, using one piece of wire.
Now push a zinc-plated nail into each potato half. Try to position the zinc nails so that they sit directly opposite the copper coins (or nails).

Wrap a piece of wire to each of the zinc-plated nails.

5 Finally, connect the two loose ends of wires to the LED. You should have an electric circuit that looks like the picture above. Check all the connections.

How does it work?

This simple motor was the first kind to be invented, by British scientist Michael Faraday in 1821. The motor relies on the discovery that an electric current flowing through a wire that is in a magnetic field will feel a force pushing on it. When the copper wire touches both of the battery's terminals, an electrical current flows through it. The current passes through the magnetic field generated by the magnets, and the pushing force makes the wire spin. Try experimenting with different wire shapes.

ZAP!

Electrons move at 1mm per second, but an electromagnetic impulse zips down a wire at 270,000 kilometres per second.

How does it work?

Electricity is the flow of electrons (tiny, negatively charged particles) through a material. Your potato battery has terminals made of two different metals (zinc and copper), separated by the acid inside the potato. A chemical reaction between the acid and the zinc coating releases electrons. They flow around the circuit, creating an electric current and making the LED light up.

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