

BENDING WATER

Electricity is a type of energy that can come in many different forms. The two basic forms of electricity are static and current. When electricity gathers in one place it is known as static electricity; electricity that moves from one place to another is called current electricity.

Static electricity is the result of an imbalance between negative and positive charges in an object. It can be generated when you rub things together. When two objects rub against each other they can transfer electrons (negative charges) from one to the other causing one object to become positively charged and the other to become negatively charged.

Water is made up of charged particles and the charge can move about freely when water is in its liquid form. The flow of water can easily be affected by a static charge and we can use a few simple items to bend water using static electricity!

ENGINEERING CONNECTION

Electrical engineers work on a variety of projects, from tiny microchips to huge power grids that light up cities. When designing devices and projects, electrical engineers must understand the electrical properties of materials in order to choose the best materials. Many circuit-board components are sensitive to static electricity may become inoperable if too much static electricity is present. Engineers must consider static electricity when designing, manufacturing and packaging electronic circuit boards.

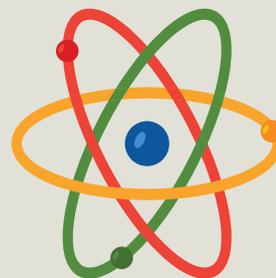
WHAT YOU WILL NEED

- A dry pen or comb
- Clean, dry hair or fur to rub the pen off
- A thin, slow and steady stream of water (from a tap or large bottle)



HOW YOU CAN DO THIS

1. Rub the comb/pen through your hair rapidly several times. This works better on people with longer hair.
2. Slowly move the comb/pen towards the flow of water, as if you are about to touch it (but don't let it get wet!).
3. You should find that the water bends towards it! If it touches the water, the effect will disappear.
4. Hold the comb on the other side of the stream. It still bends toward the comb



WHAT ACTUALLY HAPPENED?

Most of the time positive and negative charges are balanced in an object, which makes that object neutral. When you brushed that comb through your hair electrons moved from your hair and collected on the comb. The comb then had an overall negative charge.

The molecules in the water stream are neutral – they have both positive and negative charges. Once the comb has a negative charge, it is attracted to things that have a positive charge. When the comb is moved closer to the water, it attracts the positively charged particles in the water and the water bends!

If the water touches the comb, the electrons travel from the comb to the water and it neutralises the effect.