

# Static electricity

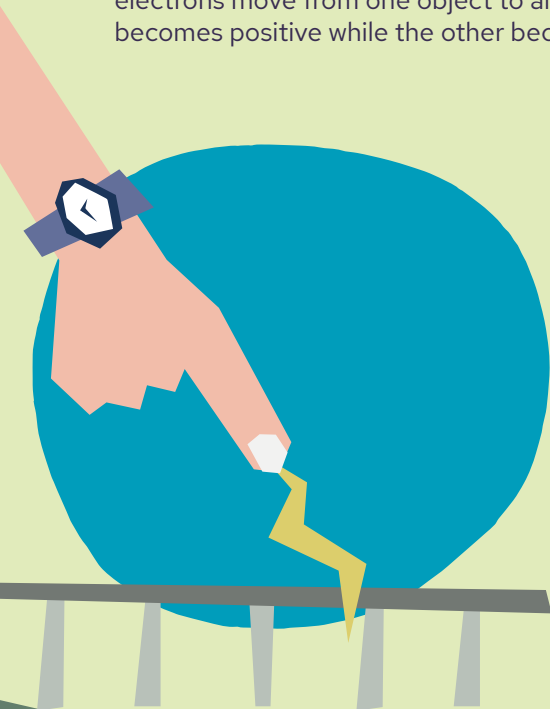
## What is static electricity?

Static electricity is the build-up of an electrical charge on the surface of an object.

Static means still and the reason that it's called static electricity is because the charges stay in one place and don't flow or move somewhere else. Makes sense, doesn't it?

Atoms are made up of neutrons, protons, and electrons. The electrons spin around on the outside.

A static charge happens when two surfaces touch each other and the electrons move from one object to another. Then one of the objects becomes positive while the other becomes negative.



## What causes static electricity?

Static electricity is made when positive and negative charges aren't balanced.

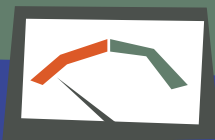
Things with different charges (positive and negative) will attract each other, while stuff with the same charges (positive and positive, negative and negative) will push away from each other. It's a bit like a magnet!

So, you've gone flying down a slide and your hair stands up. This is because of the friction effect of sliding. It has caused a positive charge on each piece of hair. As each hair has the same charge, they all try and push away from each other, causing that funny charged hair to stand right up!

The same happens with your skin. If it's charged with static electricity, and then you touch something metal, your skin will get rid of the static electricity when you touch it.

Pretty cool what it can do.

## Cool Facts About Static Electricity



A spark of static electricity can measure thousands of volts but has very little current and only lasts for a short while. It has small amounts of power or energy.



Lightning is also static electricity, and it is powerful and dangerous.



Temperatures in a lightning bolt can hit almost 28,000°C. That's hotter than the surface of the sun!

# Static electricity experiments

Have some fun with these cool experiments and learn more about static electricity at the same time.

## 1. Bend water with static electricity

Charge a comb by rubbing it against your head, then use it to “bend” a stream of water from a tap. **Can you think of any other plastic objects that you could charge and try out?**



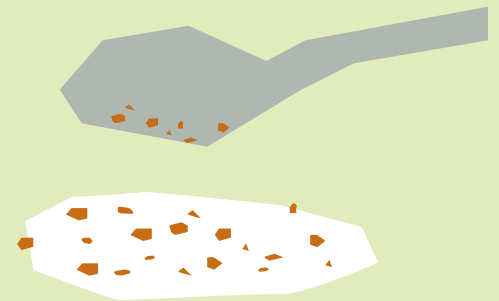
## 2. Separate salt and pepper with a “magic” spoon

### You will need:

- 1 teaspoon of salt
- 1 teaspoon of pepper
- Plastic spoon
- Dishcloth or tea towel

Carefully sprinkle a small pile of salt and pepper on a black piece of paper. Rub the plastic spoon on the cloth for about 10 seconds and then hold the rounded end up to the salt and pepper mixture. **What happens?**

This static electricity experiment works because pepper is lighter than salt, which makes it quicker to jump to the electrically charged plastic spoon. Very cool!



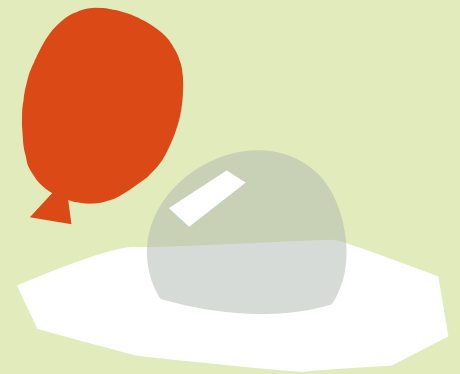
## 3. Move a bubble using a balloon

### You will need:

- A smooth glass or plastic surface
- A straw
- Bubble solution
- A balloon
- Dishcloth or tea towel

Spread your bubble solution on the smooth surface and blow some big bubbles using the straw. Blow up your balloon and charge it by rubbing it on your clothes, the cloth or even your hair! Once it is charged move it near to the bubbles. **What happens?**

Because the bubble solution is attracted to the charged balloon you can see it move around.



## 4. Make jumping goo with static electricity

### You will need:

- Cornflour
- Vegetable oil
- Balloon
- Dishcloth or tea towel

Mix  $\frac{1}{4}$  of a cup of cornflour with  $\frac{1}{4}$  of a cup of vegetable oil. Stir it up until it makes a slimy liquid. Next, blow up the balloon. Rub it on your hair to make it electrically charged. Hold the balloon very close to a spoonful of your cornflour goo. Watch the goo start to move! If the balloon gets close, enough, the goop will jump from the spoon to the balloon. Amazing! **How far can you get it to jump?**

