



# Static Electricity

Why do I sometimes get a shock when I touch a metal door handle or handrail?

The shock you sometimes get when touching metal is caused by static electricity. This occurs when two objects that are insulators – that don't allow electricity to pass through easily – rub together, for example your shoes on the carpet.

Metal is conductor – electricity can pass through it easily. When you touch the handrail after walking on the carpet, the built up static electricity passes from you to the conductor, giving you a shock.

These shocks aren't nice, but there are lots of fun and safe ways to explore static electricity at home.

## BALLOONS AT THE READY!

Balloons are made of latex, which is an insulator, so they're great for experimenting!

- 1 Blow up a balloon until it's big, but not close to popping.
- 2 Rub the balloon on some soft, fluffy fabric like a wool or fleece jumper to build up a charge.
- 3 Hold that balloon near someone's hair and watch as it stands on end, reaching towards the balloon! We call this attraction.

Different materials have different charges, just like how each end of a battery has a different charge (+ or -). We can change the charge by rubbing two materials together – like rubbing the balloon on the fabric.

If materials have the same charge, they push each other apart, or repel.

If one is positive and one is negative, they move towards each other. This is attracting.

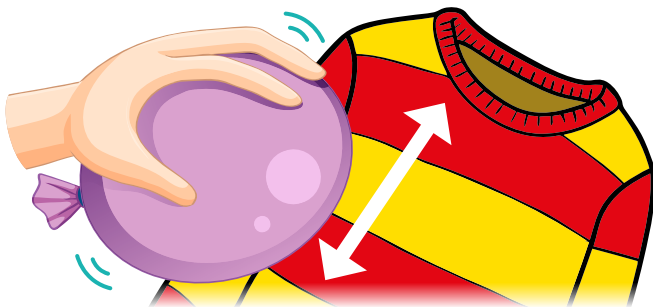
# Some experiments to try at home



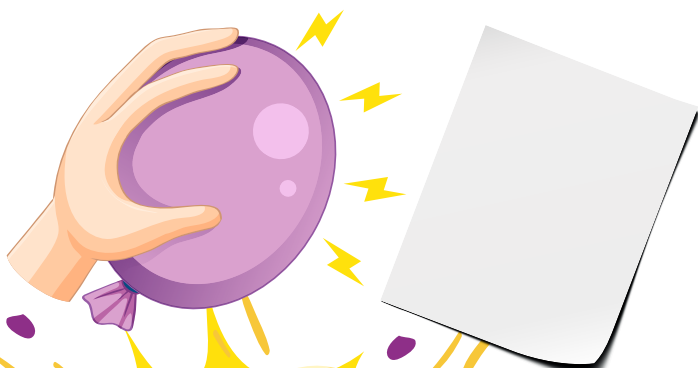
**1** Collect objects that are all made of different materials: paper, fabric, tissue, foil, plastic. To make it a fair test you want them to be small and of a similar shape.



**2** Build up a static charge on your balloon by rubbing it on the same fabric as before.



**3** Hold the balloon near your objects, one at a time, and see what happens. Remember to charge back up again between tests.



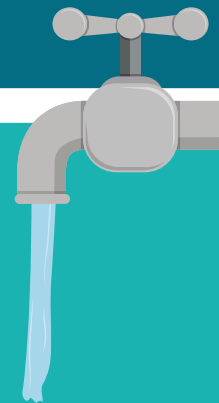
Before you test each object make a prediction about what you think will happen. Were you right?

Are the objects attracted towards the balloon or not?

What might that mean about their charge?

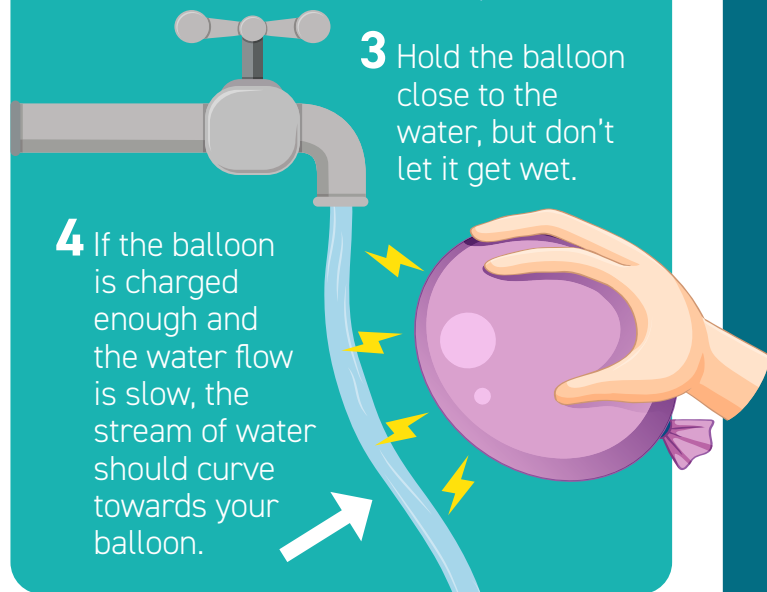
**1** Run a tap slowly, as a small trickle.

**2** Charge up a balloon with static electricity.



**3** Hold the balloon close to the water, but don't let it get wet.

**4** If the balloon is charged enough and the water flow is slow, the stream of water should curve towards your balloon.



**REMEMBER**  
to charge back up  
again between tests.



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