USBORNE

Static electricity

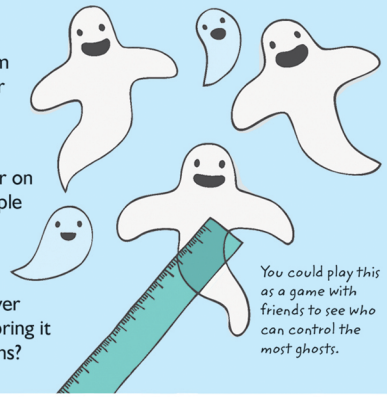
See what happens when a force called static electricity builds up in objects, and find out how you can use it to move things.

335 Spooky static

1. Cut some ghost shapes out of tissue paper. Arrange them on a table or scatter them on the floor.

2. Rub a plastic ruler on a sweater for a couple of minutes.

3. Hold the ruler over the ghosts. Slowly bring it closer. What happens?



You could play this as a game with friends to see who can control the most ghosts.

What is electricity?

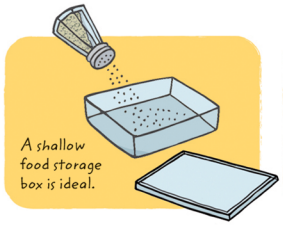
Electricity is caused by the movement of tiny particles inside things. When electricity flows, it can power machines and light our homes. When electricity doesn't flow, it builds up in objects creating 'static' electricity, which can make things attract or repel each other.

Rubbing the ruler makes static electricity build up in it. This attracts the tissue paper so the ghosts first seem to hover and then stick to the ruler.

336 Jumping pepper

1. Sprinkle a thin layer of ground pepper on the bottom of a clear plastic box and put on the lid.

2. Rub part of the lid with a scarf for a few minutes. What happens to the pepper? Rub all over the lid. What happens now?

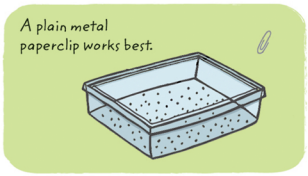


A shallow food storage box is ideal.

Rubbing the lid builds up static electricity. This attracts the pepper, so specks jump up and stick first to part of the lid and then to all of it.

337 Falling pepper

Repeat activity 336, then touch a paperclip to the lid of the box. What do you notice?



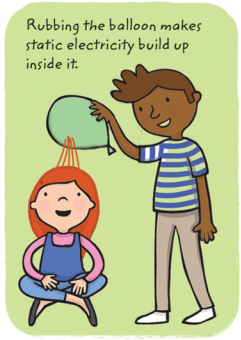
A plain metal paperclip works best.

The metal paperclip allows the electricity to flow away from the part of the lid it touches. There is no longer any static electricity to make the pepper stick there, so the specks fall down.

338 Electric hair

1. Rub a balloon against a carpet or sweater for a couple of minutes. Hold the balloon near someone's hair. What happens?

2. Now hold the balloon up to a wall. Let go. What happens?



Rubbing the balloon makes static electricity build up inside it.

The balloon will lift up your hair and stick to the wall. This is because things that have a build-up of static electricity are attracted to things that don't.

339 Bending water

1. Rub a plastic ruler on a sweater for a minute or two.

2. Turn on a tap so you have a thin stream of water. Hold the ruler near the flow of water. What do you notice?

The static electricity in the ruler attracts the water, making it bend slightly towards the ruler.

340 Rolling can

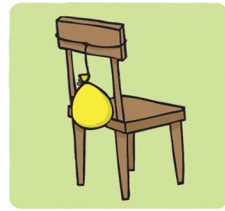
1. Run a plastic comb through your hair a few times. Put an empty metal drinks can on the ground.

2. Hold the comb near the can, then slowly pull it away. What happens?

Combing makes static electricity build up in the comb, which then pulls the can towards it.

341 Bouncing balloons

1. Take two balloons and tie one of them to the back of a chair like this, so it hangs freely.



2. Rub both balloons against a sweater or your hair for a minute or two. Now try to bring the loose balloon near the tied one. What happens?

The balloons push each other away. That's because when two things have a lot of static electricity, they repel each other.