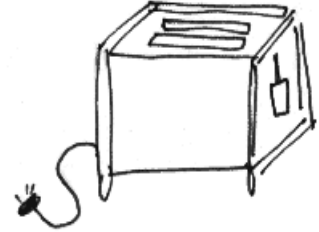


# Suzy's World

## Toaster - How does a toaster work?

### Fact

- Electricity flows from the wall socket into the plug and along the power cord into the toaster.
- When the lever is lowered and the bread drops into the toaster the lever completes the electrical circuit.
- Electricity enters the element at one end and leaves from the other end of the element.
- The electricity flows through the element and back down the power cord and into the wall socket.
- The electricity finds it hard to pass through the small wires in the element and the friction causes a change from electrical to heat and light energy.
- The heat of the element cooks the toast and makes the bread go dry and brown.
- A timer on an automatic toaster makes the toast pop up and stops the flow of electricity into the element so the element cools down.



### Do you know

- Electricity will only flow along metal.
- It will only flow if there is a circuit.
- A circuit is a metal path for the electricity to flow through so it can return to where it started.
- Only experiment with the electricity generated from batteries.
- In torches the electrical energy is turned into more light than heat.

### Experiments you can do

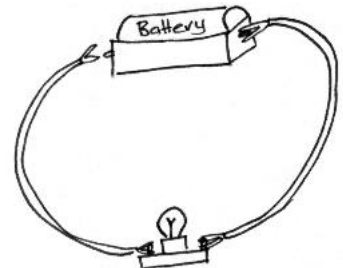
This is one you will need to do at school, because of the equipment you will need. Only do this test with the electricity from a battery.

#### What you need:

- 2 wires with crocodile clips
- A 2.5 volt bulb in a holder
- A 1.5 volt battery in a holder

#### What you do:

Attach the crocodile clip of one wire to the battery and the other end crocodile clip to the bulb. Then attach a crocodile clip on the other wire to the side of the bulb. You now have a broken circuit. The electricity from the battery can flow into the bulb but it can't flow back to the battery. Attach the crocodile clip on the other end of the wire on to the battery. What happens? Is the circuit broken or closed.



# Suzy's World

**Continued... How does a toaster work?**

## **Other Investigations**

Another one you can do at school.

Test which materials electricity will flow through

What you need:

3 wires with crocodile clips

A 2.5 volt bulb in a holder

A 1.5 volt battery in a holder

What you do:

Attach the crocodile clip of one wire to the battery and the other end crocodile clip to the bulb. Then attach a crocodile clip on the second wire to the side of the bulb and a crocodile clip to on the third wire to the battery.

When the two free crocodile clips on wires two and three touch you have a closed circuit and the bulb lights up. Use this circuit to test what materials electricity from a battery will flow through. Only test the electricity from a battery.

Test wood, plastic, paper, glass, pottery, fabric and different metals like coins, a necklace, paperclips and keys.

Which materials will electricity flow through to complete the circuit and make the bulb light up?