

Physical Processes

Electrical Appliances

Electricity is very useful. At home or school, electricity is used to make lots of different appliances work. All appliances need electricity in order to produce **heat, light, sound or movement**. Four different appliances are shown alongside:

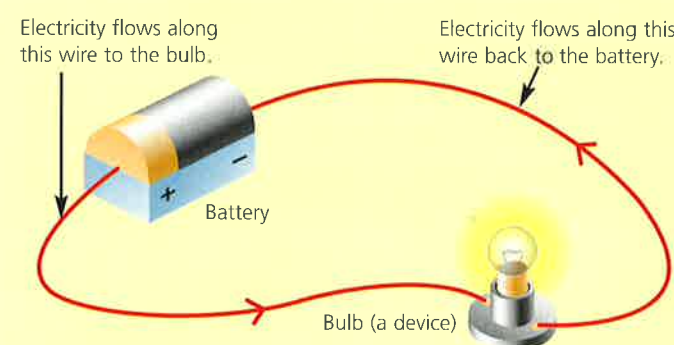
- 1 Name three other appliances that need electricity to produce each of the following:
a) light b) sound c) movement d) heat.
- 2 Name one appliance that needs electricity to produce:
a) light and sound
b) sound and movement c) light and heat.



Simple Circuits

All appliances involve **circuits**. A very simple circuit has a **battery or power supply** (usually the **mains**) which supplies the electricity. This electricity then flows around the circuit through wires to a device, and causes the device to produce heat, light, sound or movement.

At school you will make up some simple circuits. You will use the following:



What it is	What it looks like	How we draw its symbol	What it does
Battery		or if there is more than one	Supplies the electricity
Bulb			Produces light
Motor			Produces movement
Buzzer			Produces sound
Switch			Switches the circuit on and off
Wires		or	Electricity flows along these to the devices

- 3 Draw the symbol for the following:
a) Battery b) Bulb c) Motor
d) Buzzer e) Switch f) Wire.

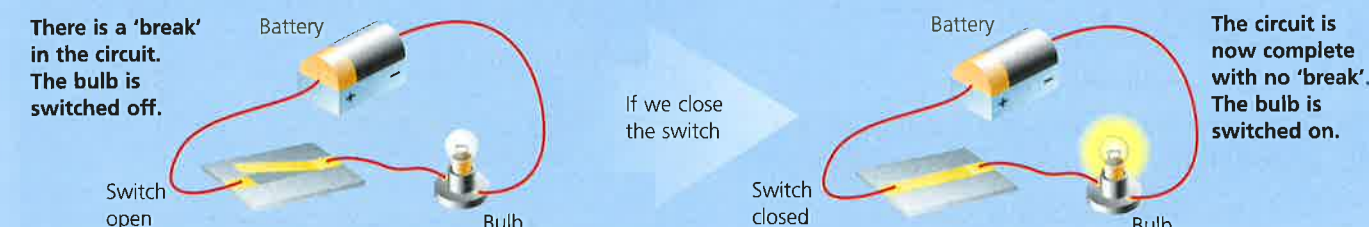
- 4 What... a) produces sound? b) supplies the electricity? c) produces movement? d) switches a circuit on or off? e) produces light?

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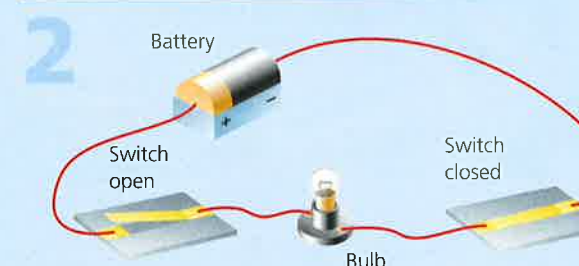
Making Circuits Work

Electricity will not flow through a circuit which has a 'break' or gap in it. A **switch** is a device which can be used to 'complete' or 'break' a circuit so that devices can be switched on or off.

- This is very useful since it saves electricity, which saves us money! The table below shows some examples of circuits that won't work:



Problem: The wire from the switch is not connected to the bulb. The circuit has a 'break' in it so the bulb is switched off.
To make it work: Connect the wire to the bulb.



Problem: This circuit has two switches in it. One switch is closed but the other switch is open. The circuit has a 'break' in it so the bulb is switched off.
To make it work: Close the open switch.



Problem: Both wires are connected to one end of the battery. One wire must be connected to one end of the battery and the other wire must be connected to the opposite end, otherwise no electricity will flow.
To make it work: Connect one of the wires to the other end of the battery.



Problem: There is no 'break' in the circuit. Either the bulb has 'blown' or the battery is 'flat'.
To make it work: Change the battery. If the circuit still won't work, change the bulb too.

- 5 Make up and draw three other circuits that don't work. Explain why each

- circuit doesn't work and what needs to be done to make it work.