



Year 6 – Electricity: Circuits

Element 1 – Closed Test on Electricity: Circuits

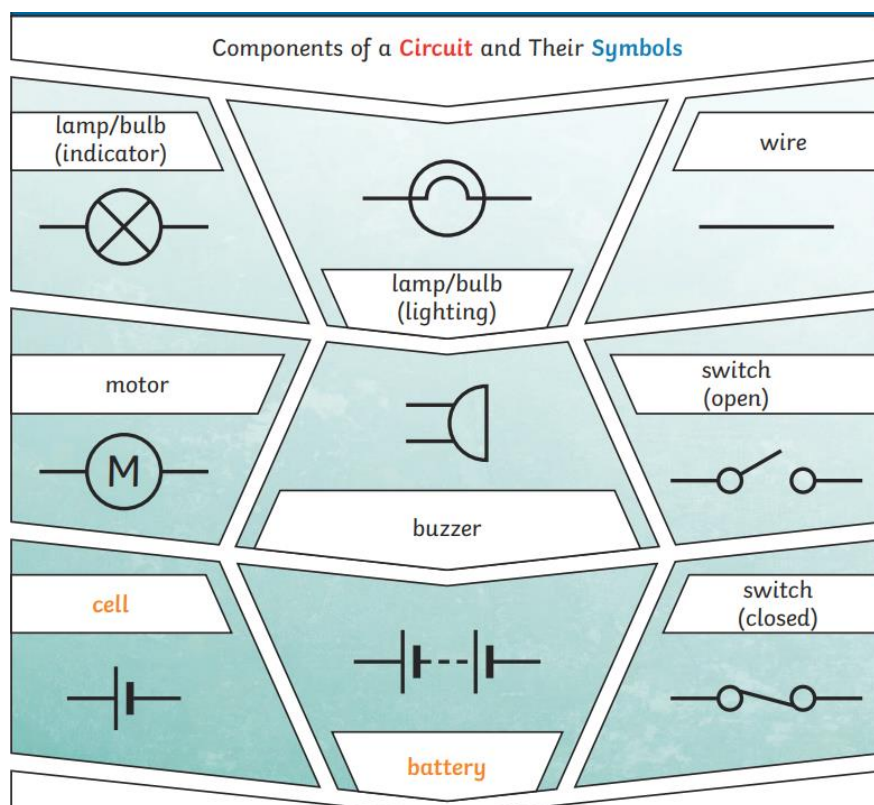
What is a circuit?

A circuit is defined as: 'a path that an electrical current can flow around'.

What is a circuit diagram?

A circuit diagram is a technical drawing that is used to show all of the different components that are used and where they are in electrical systems such as: a computer, lights, televisions etc.

In a circuit diagram, symbols are used to represent each component rather than a picture or drawing e.g.



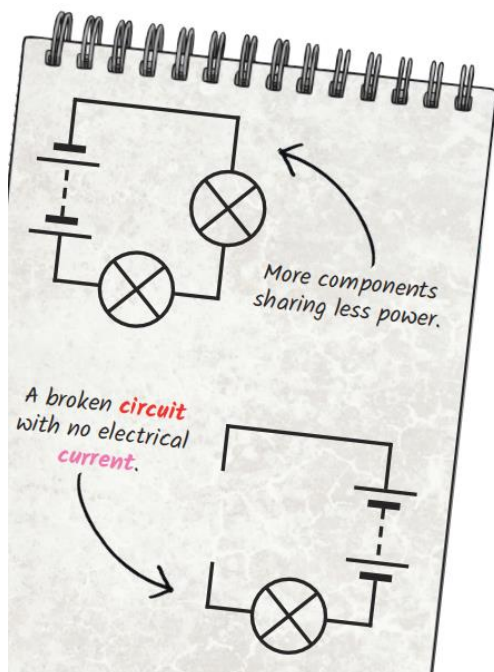
Can you make bulbs brighter/duller or buzzers louder/quieter?

- More batteries or a higher voltage create more power to flow through the circuit.
- Shortening the wires means the electrons have less resistance to flow through.
- Fewer batteries or a lower voltage give less power to the circuit.
- More buzzers or bulbs mean the power is shared by more components.
- Lengthening the wires means the electrons have to travel through more resistance.



Series Circuit:

This is a circuit that has only one route for the current to take. If more bulbs or buzzers are added, the power has to be shared and so they will be dimmer or quieter. If just one part of this series circuit breaks, the circuit is broken and the flow of current stops. See the diagram below:



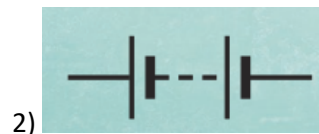
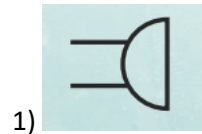
Key Vocabulary

Key Vocabulary	
circuit	A path that an electrical current can flow around.
symbol	A visual picture that stands for something else.
cell/battery	A device that stores chemical energy until it is needed. A cell is a single unit. A battery is a collection of cells .
current	The flow of electrons , measured in amps .
amps	How electric current is measured.
voltage	The force that makes the electric current move through the wires. The greater the voltage , the more current will flow.
resistance	The difficulty that the electric current has when flowing around a circuit .
electrons	Very small particles that travel around an electrical circuit .



Element 1 – Closed Test

Can you name the components represented by each symbol for 1 and 2?



- 3) What is one way you can make a bulb brighter in a circuit?
- 4) What is the difference between a cell and a battery?
- 5) What happens to the current if a circuit breaks?

Element 2

Explore circuits further by visiting these different websites to use symbols and construct circuits – if you can, take screen shots of what you create.

[UK Power Networks - Interactives](#) – Go to the circuit builder section and click on the orange link 'series circuit behaviours at KS2 level'.

[Circuit Construction Kit: DC \(colorado.edu\)](#) – Play around with the circuit creator, see what happens if you add more batteries/bulbs etc