Science

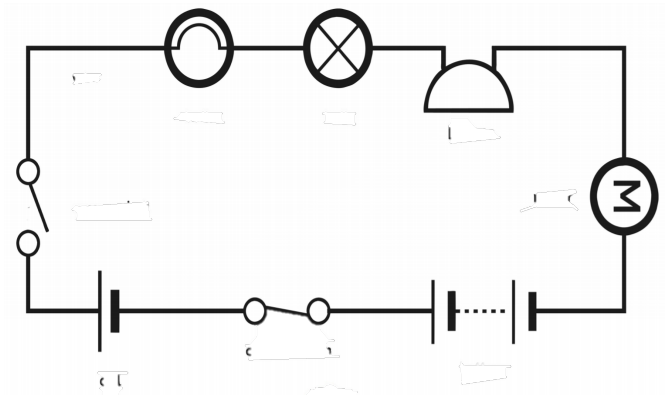
Topic: Electricity
Year 5

What I should already know

- Electricity is a type of **energy.**
- It is used to power lots of different things, including many items that we use in everyday life.
- Electricity can flow through **wires** and **cables** and can be stored in batteries (sometimes called cells).
- Electricity can flow in simple series **electrical circuits.**
- When switches are open or wires are removed from a circuit (so that it is no longer a closed circuit), bulbs and buzzers will turn off. You can use crocodile clips to investigate adding and removing wires.
- Some materials conduct electricity (conductors), and others do not (insulators).
- If electricity is not used safely, it can be highly dangerous.

Electrical circuits

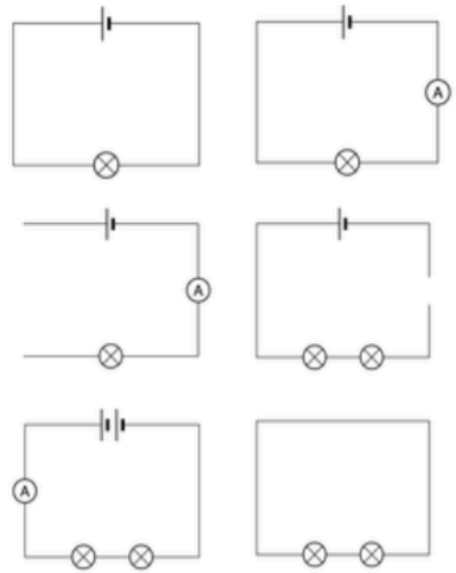
When drawing electrical circuits, you should use the standard symbols to show the different components.



Variation of components

- When changes are made to circuits, components can function differently:
- When more batteries or cells are added (or batteries or cells are included with a higher voltage) the brightness of bulbs and the volume of buzzers will increase.
- When more bulbs are added to a simple circuit, they will be dimmer than if there were one bulb. This is because the electricity is shared between the two bulbs. More voltage would be needed to make them brighter.
- You should be able to look at circuits like those below and work out what would happen.

Variation of components



Vocabulary

Circuit	A **circuit** is a complete path around which **electricity** can flow. It must include a source of **electricity**, such as a battery.
Resistance	Resistance is the measure of the difficulty electrons have in flowing through a material.
Voltage	Voltage is the driving force that causes current to flow around a circuit – 'the push'.
Motor	A component which turns electrical energy into (rotational) movement.
Conductor	A material that allows electricity to pass through easily.
Insulator	A material that does not allow electricity to pass through it.
Switch	A device which can control the flow of electricity.
Cell	A cell is a container filled with chemicals that produces electricity.
Parallel	A parallel circuit splits the current along multiple paths before meeting up again.
Series	A series circuit only has only one path that the current can travel through.