

# Knowledge Organiser - Year 6 - Science: Electricity



**Electricity - a form of energy resulting from the existence of charged particles, such as electrons.**

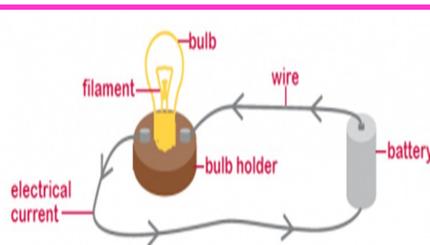
## Key Vocabulary

<b>Ammeter</b>	A measuring instrument with a scale in Amperes (Amps), used to measure the current in a circuit.
<b>Battery or cell</b>	A container where chemical energy is converted into electricity and used as a source of power.
<b>Circuit</b>	A complete and closed path around which a circulating electric current can flow.
<b>Component</b>	Any basic device or part of an electrical circuit.
<b>Conductor</b>	A material or device which allows heat or electricity to carry through.
<b>Current</b>	A flow of electricity which results from the ordered directional movement of electrically charged particles.
<b>Filament</b>	A conducting wire or thread with a high melting point that forms part of an electric bulb.
<b>Fuse</b>	An electrical safety device that can stop current from flowing if the circuit becomes overloaded.
<b>Motor</b>	A machine powered by electricity that supplies motive power for a vehicle or other moveable device.
<b>Parallel Circuit</b>	When the circuit has a choice of paths for the electrical current to use and return to the battery.
<b>Series Circuit</b>	When all the components in a circuit are connected in a continuous loop.
<b>Switch</b>	A device for making and breaking the connection in an electric circuit.
<b>Voltage</b>	An electrical force that makes electricity move through a wire, measured in volts.
<b>Renewable energy</b>	Electrical energy created by a sustainable source e.g. Solar panels, wind turbines, wood, hydro electric, wave, geothermal or biomass.

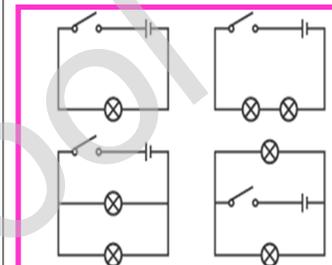
## Working Scientifically

Explore ideas and raise different kinds of questions; select and plan the most appropriate type of scientific enquiry to use to answer scientific questions; recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. They should choose the most appropriate equipment to make measurements and explain how to use it accurately. They should decide how to record data from a choice of familiar approaches; look for different causal relationships in their data and identify evidence that refutes or supports their ideas. They should use their results to identify when further tests and observations might be needed; recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact. They should use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time.

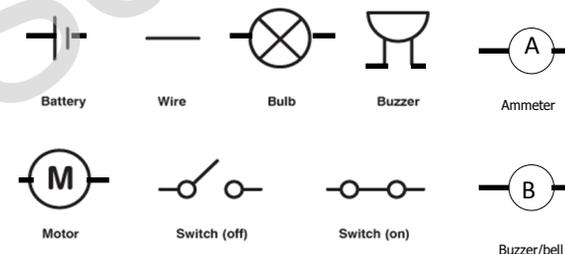
**Key Question:** Why do the functions of components vary in a circuit? Have you got the power?



Is the diagram on the left, the way to draw a circuit diagram? Is there a better way? Would a person from a different country understand this? Why not? How about the diagrams on the right?



In this topic we are going to learn to use these circuit symbols which means scientists anywhere in the world would understand our circuit.



Did you know that batteries have a positive and negative terminal? And that a wire is a component? Do circuits work with a gap in? We will find out!

## Renewable Energy

**Energy whose source never runs out**



**We cannot use up all the source**

Inside the plug there are three wires. Each one has to be connected to the right terminal: Brown is live. Blue is neutral. Green and yellow is earth.

It also contains a fuse. The fuse is a safety device and blows, if there is a fault in the device the plug is connected to. How many volts are in a mains plug socket?

We will learn about how electrical energy is produced and moved from the power stations to your homes and about the difference between renewable and non-renewable energy resources.

What are the problems with Oil, coal, gas and nuclear power? Pearl Street Station was the first power station in the world. It was owned by Thomas Edison. It was fired by coal and started generating electricity on September 4<sup>th</sup> 1882. Two years later it served 508 customers and lit 10,164 lamps.

