

Working Scientifically

<p>Prediction – Make a prediction on what you think the effect of changing the independent variable will be</p>	<p>Planning/Variables – Children choose an independent variable (what they change) and a dependent variable (what they will measure)</p>	<p>Questioning – create your question: what is the effect of changing the independent variable on the dependent variable?</p>
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What I should already know

- Identify common appliances that run on electricity.
- Construct a simple circuit and name its basic parts
- Recognise some common conductors and insulators and associate metals with being good conductor
- I can explain how a switch works
- I can draw a simple circuit diagram using symbols and explain if it will work or not
- I understand the dangers of electricity
- I understand conductors and insulators

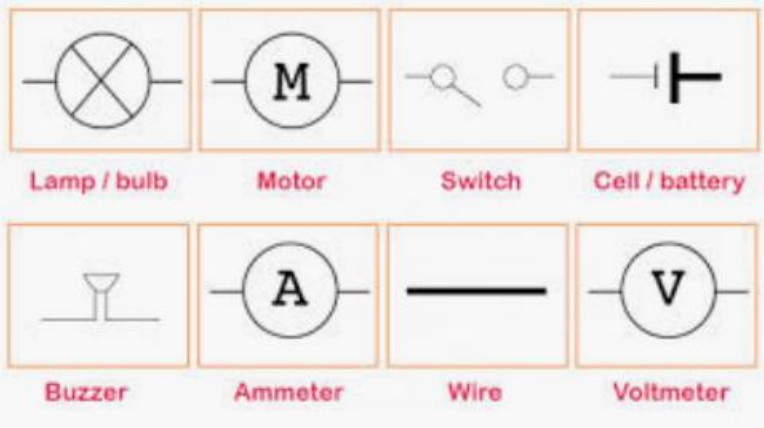
Investigate

What will happen if you change the independent variable on the dependable variable?

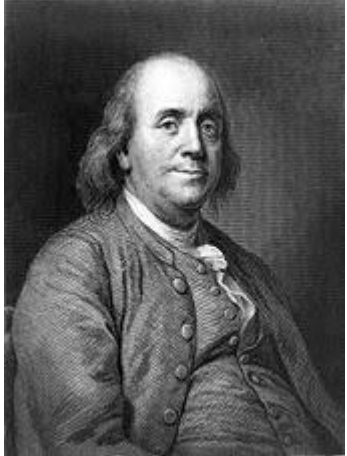
Key Vocabulary	
Generator	A machine that make electrical energy
Component	A part of something (a part of a circuit)
Voltage	A measure of the difference in electrical energy between two parts of a circuit
Battery	A container consisting of one or more cells where chemical energy is converted into electricity and used as a source of power.
Bulb	A glass bulb which provides light by passing an electrical current through a filament
Cell	A device containing electrodes that is used for generating current

What I will know by the end of the unit

Electricity is created by generators which can be powered by gas, coal, oil, wind or solar.
 Electrical energy can be converted into other types of energy such as light, heat, movement or sound.
 Electricity is dangerous, so be careful when using electrical appliances.
 Electricity can flow through the components in a complete electrical circuit.
 A circuit always needs a power source, such as a battery, with wires connected to both the positive (+) and negative (-) ends.
 A battery is made from a collection of cells connected together).
 A circuit can also contain other electrical components, such as bulbs, buzzers or motors, which allow electricity to pass through.
 Electricity will only travel around a circuit that is complete. That means it will have no gaps.
 You can use a switch in a circuit to create a gap in a circuit. This can be used to switch it on and off.
 When a switch is open (off), there is a gap in the circuit. Electricity cannot travel around the circuit.
 When a switch is closed (on), it makes the circuit complete.
 Electricity can travel around the circuit.
 Increasing the brightness of a bulb or the volume of a buzzer.



People we need to know



Benjamin Franklin

Benjamin Franklin had one of the greatest scientific minds of his time. He was interested in many areas of science, made many discoveries, and invented many things, including bifocal glasses. In the mid-1700s, he became interested in electricity.

Michael Faraday **invented** the **electric** motor in 1821. Georg Ohm mathematically analysed the **electrical** circuit in 1827.

Useful links

www.sciencekids.co.nz/electricity.html
www.primaryhomeworkhelp.co.uk/revision/Science/electricity.htm
<https://www.bbc.co.uk/bitesize/topics/zj44jxs>