

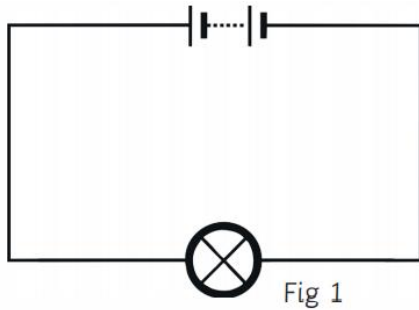
KEY VOCABULARY

Battery: a device, containing one or more electrical cells, storing energy that can be converted into electrical power.

Circuit: the path around which an electric current circulates. An electric current will only travel around a closed, complete circuit.

Component: a part of a circuit that changes electrical energy into other forms such as light (bulb) or sound (a buzzer).

Series circuit: a circuit in which electricity flows through each component in a single path.



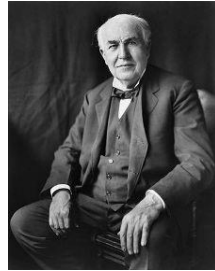
Current: the flow of electrons around a circuit. Current is measured in amperes or amps (A). The circuit must be complete in order for the current to flow.

Resistance: the difficulty that the electric current has when flowing around a circuit.

Voltage: the “push” of a battery or power supply to create a flow of electricity. Voltage is measured in volts (V). The higher the voltage, the bigger the push.

Volt: the unit we use to measure voltage.

KEY SCIENTIST – Thomas Edison



1847-1931

Thomas Edison was an American inventor who had over 1000 unique patents at the time of his death. Many of his inventions which include the phonograph, the motion picture camera and early versions of the electric lightbulb have had widespread impact on the modern industrialised world.

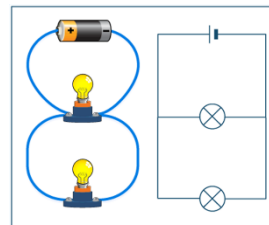
Did you know...that Thomas Edison was partially deaf?

STICKY KNOWLEDGE

1. Electricity is a form of energy.
2. All circuits must contain a source of electricity such as a battery and wires for the current to pass through.
3. A single cell is one unit containing two electrodes and an electrolyte.

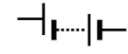
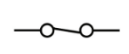
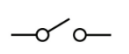
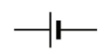
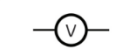

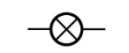
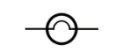
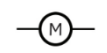
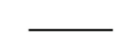


4. A battery is a group of cells.
5. The greater the voltage, the more current that will flow.
6. In a parallel circuit, the components are side-by-side. The current has a choice of routes (paths). If one bulb ‘blows’, there would still be a complete circuit to the other bulb so it stays lit.



KEY CONCEPT – Standard Scientific Symbols

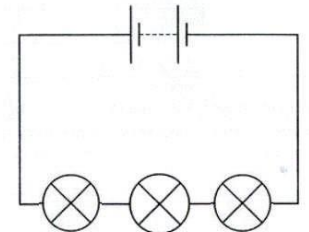
We use scientific symbols and conventions for drawing diagrams so that they can be understood anywhere in the world. These are internationally recognised and ensure language is not a barrier to safety when working with electricity.

 battery	 closed switch	 open switch	 cell	 voltmeter
 buzzer	 lamp	 lamp	 motor	 wire

KEY CONCEPT – Changing the variables

Lighting the way

When you add more light bulbs to a series circuit, the brightness of the bulbs will decrease. This is because a battery provides a specific amount of energy to the electrons in a circuit. The electrons provide the components in a circuit with electrical energy and the bulbs convert this electrical energy into light (and heat) energy. The available energy is shared between all the components. The more bulbs there are in the circuit, the less energy is available for each one, and the dimmer the bulbs become.



More power please!

Changing the voltage of the battery also affects the brightness of the bulbs. As the voltage increases, the energy provided to the electrons also increases. The larger the amount of electrical energy supplied, the brighter the bulbs will be.