

Electricity

Significant Scientists

**Alessandro Volta**



Alessandro Volta (1745 - 1827) Italian physicist best known for the development of the voltaic pile (battery). The SI unit of voltage, the volt, is named after him.

**Hertha Ayrton**



Phoebe Sarah Hertha Ayrton (1854 - 1923) was a British engineer, mathematician, physicist and inventor, and suffragette. Known in adult life as Hertha Ayrton, born Phoebe Sarah Marks, she was awarded the Hughes Medal by the Royal Society for her work on electric arcs and ripple marks in sand and water.

Working Scientifically Skills

Plan an enquiry.

Gather, record, classify and present data in a variety of ways to help in answering questions.

Enquiry Skills

Identifying and classifying

Fair testing

Pattern seeking



Key Knowledge

Common appliances that use electricity are: toasters, lamps, kettles, laptops, games consoles, phones, torches, TVs, washing machines and irons.

Some appliances use batteries and some use mains electricity.

Batteries can vary greatly in size, shape and power.

In a circuit, all the components are joined together and the electricity can only flow in one direction.

Switches can be used to open and close circuits.

A circuit will not work properly if:

- The cells are not connected correctly
- The circuit has gaps
- One of the components does not allow electricity to flow through it

There are a range of symbols that represent different components.

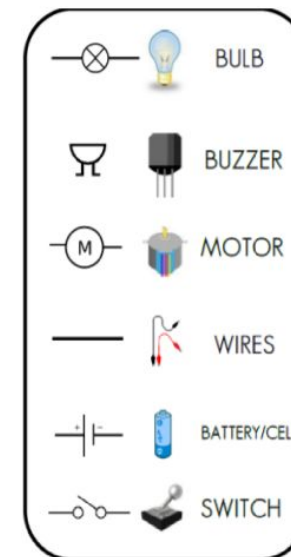
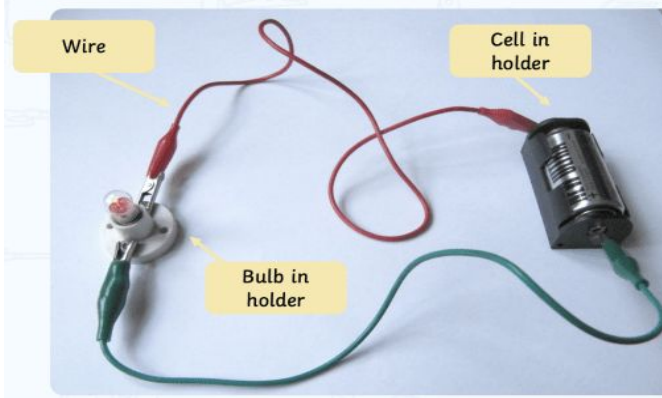
Electrical conductor let electricity pass through them. They are often metal but also include carbon and water.

An insulator does not let electricity pass through it, e.g. wood, leather and plastic.



Key Vocabulary

|                    |  |
|--------------------|--|
| <b>electricity</b> | A form of energy that can be carried by wires and is used for heating and lighting, and to provide power for devices.        |
| <b>bulb</b>        | The glass part of an electric lamp, which gives out light when electricity passes through it.                                |
| <b>battery</b>     | A container of one or more cells in which chemical energy is converted into electrical energy and used as a source of power. |
| <b>buzzer</b>      | An electrical device that is used to make a buzzing sound.   |
| <b>switch</b>      | A small control for an electrical device which is used to turn the device on or off.   |
| <b>wire</b>        | A long thin piece of metal that is used to carry electric current.   |
| <b>motor</b>       | A device that uses electricity or fuel to produce movement.  |
| <b>component</b>   | The parts that something is made of.   |

A simple circuit



Electricity Safety

-  Don't touch wires.
-  Don't put your fingers in sockets.
-  Don't fly kites or climb trees near power lines.
-  Don't use electronics near water.