

Electricity

The children will learn about what electricity is and how it was discovered. They will identify which appliances use electricity in their homes and how to keep themselves safe. Children will construct circuits, start to create pictorial circuits and conduct an investigation into how easily different types of switches can break and reconnect a circuit. This will link with *DT – making working torches*.

Background information - Let me introduce you to Thomas Edison:

Thomas Edison was an American inventor who transformed the world with inventions including the lightbulb. In January 1869 Edison resigned from his job, intending to devote himself full time to inventing things. In 1879, after considerable experimentation and based on 70 years work of several other inventors, Edison invented a carbon filament that would burn for 40 hours—the first practical lightbulb. In the early 1900's some homes began to use household electrical items, such as washing machines, kettles and sewing machines. How would life be different for you today without electrical items in your home and at school?

Knowledge and Understanding

In this unit pupils will learn...

- how electrical systems work
- to identify electrical and non-electrical appliances.
- to explain, with support, how a circuit works.
- to name at least two electrical conductors & insulators.
- to create a simple series circuit both with and without a switch.
- to accurately record their findings in a table.
- To sort appliances based on whether they use mains or batteries.
- to explain how a switch turns the electric current on and off.
- to report their findings and conclusions orally.
- to explain why a circuit is incomplete.
- to generalise about types of materials that conduct electricity.
- to explain the conclusions they draw in investigations.

Enquiry skills and Key concepts

- To ask relevant questions and use different types of enquiries to answer them
- To make systematic and careful observations
- To gather, record, classify and present data in a variety of ways to help in answering questions
- To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables
- To report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.

Key Vocabulary:

- **Electricity** – The flow of an electric current through a material, e.g. from a power source through wires to an appliance.
- **Electrical** an item that uses electricity to work
- **Appliances** - A piece of equipment or a device designed to perform a particular job, such as a washing machine or mobile phone.
- **Conductor** - a material that allows electricity to flow through it, e.g. metal
- **Insulator** - a material that does not allow electricity to flow through it, e.g. plastic
- **Battery** - a cell that provides electrical energy to power a circuit
- **Bulb** – part of the circuit, made from plastic or glass, that gives out light when electricity passes through it
- **Switch** - part of the circuit that can be opened or closed to allow electricity flow
- **Wire** - A long thin piece of metal that carries an electrical current often covered in plastic for safety.
- **Voltage** - An electrical force that makes electricity move through a wire, measured in volts (V).
- **series circuit**- a circuit where the electricity flows along one path

