

Electricity - Year 4 - Unit 2

Scientific Enquiry



Identifying & classifying

Identifying means knowing what something is and naming it. **Classifying** means grouping things together if they have something in common. We will classify the materials that are suitable for wires.

Working Scientifically

Asking scientific questions

Planning an enquiry

Observing closely

Measuring (taking measurements)

Gathering and recording results

Presenting results

Interpreting results

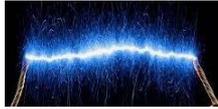
Concluding (drawing conclusions)

Predicting

Evaluating an enquiry

electricity

Electricity is an energy which can be used to power electrical items.



Common appliances that run on **electricity** include: televisions, washing machines, ovens, fridges, computers, lamps, kettles and toasters.



Electricity can be dangerous. You should never pull wires from a socket, put your fingers in a socket or use electrical appliances near water.

mains

Many household devices and appliances run on electricity. Some plug in to the **mains** and others run on batteries.



battery

A **battery** is a source of energy. A battery stores energy until it is ready to be used. **Batteries** come in different shapes and sizes. **Batteries** can provide energy to small items, such as a mobile phone, or large items, such as cars.



circuit

An electrical **circuit** consists of a cell or battery connected to a component using wires.



If there is a break in the **circuit**, a loose connection or a short circuit, the component will not work.

components

A **component** is a basic electronic element that can be fitted together to make a circuit.



Components we will use are: cells or batteries, wires, bulbs, buzzers and motors. A switch can be added to a circuit to turn the **component** on and off by opening or closing the circuit.



conductor

A **conductor** is a material which **electricity** can flow through. Metals are good **conductors**. A **conductor** could replace a wire in a **circuit** and **electricity** would flow through it.



Water, if not completely pure, also **conducts** electricity.

insulator

An **insulator** is a material that does not allow electricity to pass through. Non-metallic solids like rubber and plastic are **insulators** except for graphite (pencil lead).

Things you learnt in previous topics

In Nursery and Reception you learnt about similarities and differences in places, objects, materials and living things. You spoke about the features of your own immediate environment and how environments might vary from one another. You made observations of animals and plants and have explained why some things occur and talk about changes.



How this connects with future learning

In year 6, you will associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. You will compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. You will use symbols when representing a simple circuit in a diagram.