

Preston Primary School Knowledge Organiser

Topic: Science - Electricity

Term: Autumn 2

Year: Unit 3

Duration: 7 Weeks

The Powerful Knowledge we will take away from this Learning Enquiry (what children will be learning):

Electricity powers many of our everyday objects. Examples include lights, computers, phones, and TVs. It is very important to use electricity safely. Never use electricity near water.

Simple electrical circuits include power cells, wires, bulbs, and a switch. We can also include buzzers.

Simple electrical circuits can be represented with drawings. This means that we can design them before making them, thinking carefully about what will and won't work to light the bulb.

The simple electrical circuit requires the power cell to be attached to the light bulb via metal wire connections. The connection needs to be complete to work. This means that the wires run from the power cell to the light bulb, switch, or buzzer and back to the power cell.

You need at least two wires to create a functioning simple circuit.

The wires need to be made of metal because metal conducts electricity and can carry a current.

We will be conducting experiments to find out what effect changing different components of the circuit has.



Our Key Vocabulary:

Word	Meaning
Conductor	A material that allows electrical current to pass through, e.g. certain metals including copper, iron and silver.
Insulator	A material that does not allow electrical current to pass through, e.g., wood, glass, plastic.
Fair test	A test where two or more things are compared. There is only one variable, and all other elements of the experiment are controlled.
Variable	The thing that is changed to carry out an experiment.
Power cell	We will be using batteries as our power cells during this topic.
Circuit diagram	A picture to show what a circuit is made up of and what components it has.
Switch	The switch allows the flow of electricity to be controlled and turned on or off. We use them every day to control the lights in our houses.

Website links:

What are conductors and insulators? - BBC Bitesize

There are some helpful guides to help you recognise materials as insulators or conductors.

What is electricity? - BBC Bitesize

Lots of information, videos, and quizzes about electricity.

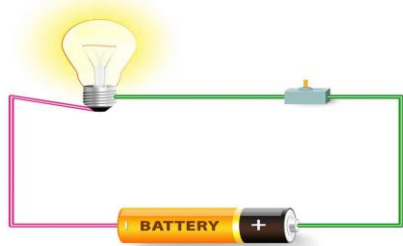
What I already know:

Children have not yet been introduced to the concept of electricity throughout their time in Key Stage One.

They have learnt about ways in which to work scientifically, including the concept of changing variables during experiments and how to run a fair test.

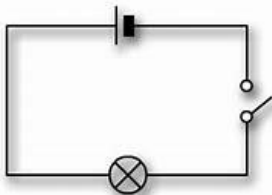
They have also had experience of writing up experiments in a formal way, including the method, equipment, prediction, results table, and conclusion.

SIMPLE ELECTRIC CIRCUIT

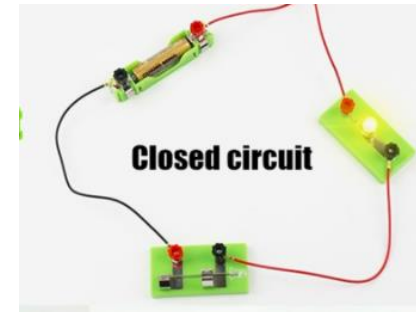


A pictorial representation of a simple circuit.

A diagram of the same simple circuit using conventional circuit symbols.



We will be using crocodile clips to connect our power cells (batteries) to the lightbulbs.



This shows the power cell (battery), attached to wires, lightbulbs, and a switch. The lightbulb is illuminated because the wires are connected, and the switch is on.