Science Focus: Electricity	Year Group: 2	Spring Term

Key Knowledge:

What is electricity?

Electricity is the flow of tiny particles called electrons and protons. It can also mean the energy you get when electrons flow from place to place.

What types of electricity are there?

Mains electricity – This is where an appliance needs to be plugged into a socket to work, for example a fridge or a television.

Battery electricity – This is where an appliance needs to have a battery inserted to work, for example a mobile phone, or a torch.

What uses electricity?

Any appliance uses electricity, whether battery or mains powered. Link to mains and battery experiment detailed below.

How is mains electricity powered?

Mains electricity is powered usually by gas, coal and nuclear power stations; wind turbines, hydroelectric and solar panel stations are also used to generate mains electricity.

Possible Experiments:

Finding electrical objects around our school and identifying whether they are mains or battery operated.

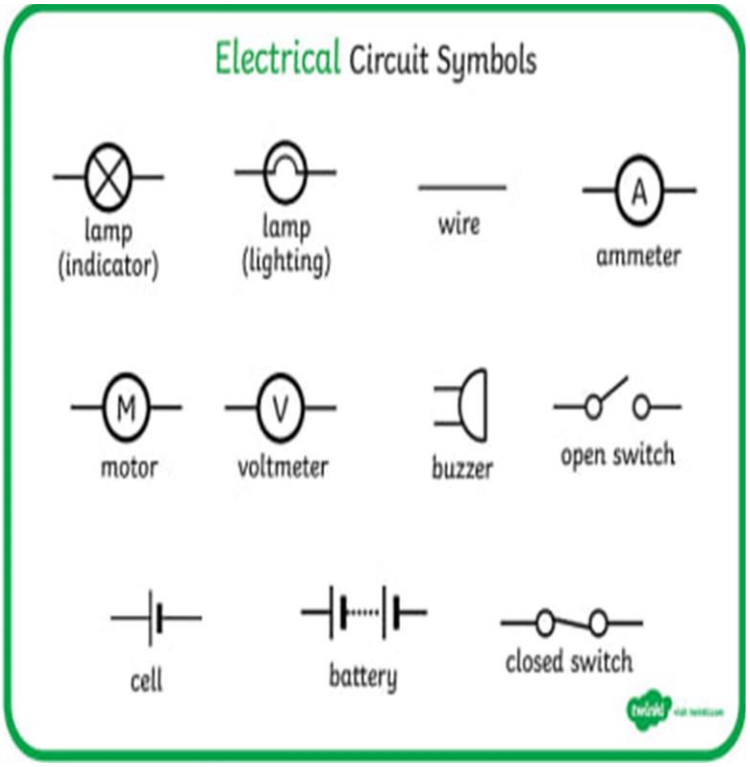
Building simple circuits using wire, bulbs, a battery and switch – experimenting how to complete a circuit.

Building circuits, experimenting with different conductors using class room equipment.

Key Vocabulary:

Electricty	The flow of an electric current or charge through a material, eg from a power source through wires to an appliance.
Generate	To make or produce.
Renewable	A source of electricity that will not run out. These include solar, nuclear, geothermal, hydro and wind.
Non-renewable	This source of energy will eventually run out and so will no longer be able to be used to make electricity. These include fossil fuels – coal, oil and natural gas.

Diagrams and Symbols:



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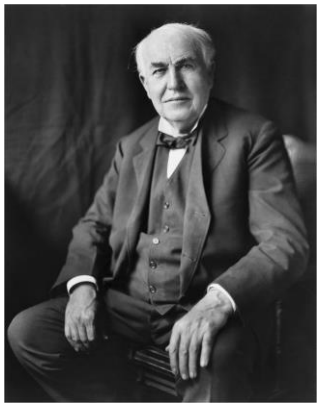
Key Knowledge:

How does electricity travel?

From power stations electricity travels through transformers and electrical pylons, through underground wires and to our homes.

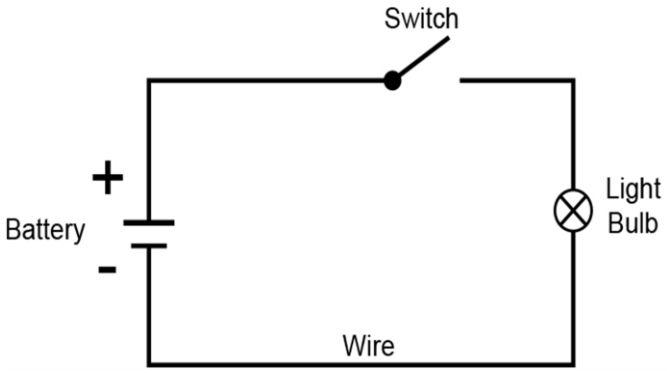
Who invented the lightbulb?

Joseph Swan and Thomas Edison. Swan invented the first working lightbulb but it didn't work for a long period of time, Edison realised the problem and invented his own version that lasted for longer.



What is a circuit?

A circuit is a closed loop that electrons can travel in. A source of electricity, such as a battery, provides electrical energy in the circuit. Link to circuit experiments detailed above.



Key Vocabulary:

Appliances	A piece of equipment or device designed to perform a particular job, such as a washing machine or mobile home.
Battery	A device that stores electrical energy as a chemical.
Circuit	A pathway that electricity can flow around. It includes wires, a power supply, and may include bulbs, switches or buzzers.
Electrons	Small particles with an electrical charge.
Protons	Small particles with a positive electric charge.

Diagrams and Symbols:

Swan lightbulb.

Edison lightbulb.