Year 4

Statutory Requirements:

- Identify common appliances that run on electricity
- Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers
- Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery
- Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
- Recognise some common conductors and insulators, associate metals with being good conductors

Working Scientifically:

- Asking relevant questions and using different types of scientific enquiries to answer them
- Setting up simple practical enquiries, comparative and fair tests
- Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment including thermometers and data loggers
- Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables

Key Knowledge:

- Common appliances which run on electricity include televisions, computers, fridges, kettles and lamps.
- A circuit needs a power source, such as a cell, in order to work. Electricity will only travel around a circuit that is complete.
- When a switch is open (off), there is a gap in the circuit so electricity cannot travel around the circuit. When a switch is closed (on), it makes the circuit complete so electricity can travel around the circuit.
- Electrical conductors allow electricity to pass through them Metals, such as copper, silver and gold, are good electrical conductors.
- Electrical insulators, such as rubber, glass and plastic, do not allow electricity to pass through them.

Key Vocabulary:

- Electricity
- Appliance
- Simple Circuit
- Series Circuit
- Component
- Power Source
- Cell
- Battery
- Bulb
- Buzzer
- Lamp
- Switch
- Complete
- Incomplete
- Conductor
- Insulator

Key Scientists:

Classic
Allesandro Volta (1745-1827)
Invented the first electrical battery.

Classic
Michael Faraday (1791-1867)
Invented the first electrical generator.

Contemporary
Henry Snaith (1978-)
Working on making solar cells more efficient.