

## Year 5 – Knowledge Organiser

### Spring Term Topic – Electricity (Science)

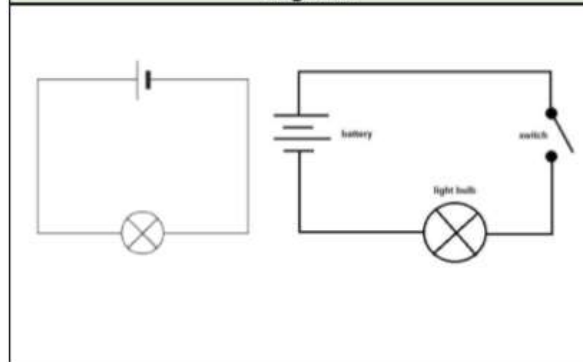
#### What should I already know?

- Electricity is a form of energy that can be carried by wires and is used for heating and lighting, and to provide power for devices.
- Sources of light and sound may need electricity to work.
- Where electricity comes from
- Which appliances need electricity
- What a circuit is, the components of a circuit and how it works.
- What electrical conductors and insulators are.
- What happens when a switch is added to a circuit.
- What forces and resistance are.

#### Diagrams

Circuit Symbols	
Symbol	Component
	ammeter
	battery
	bulb
	buzzer
	cell
	motor
	resistor
	switch (open)
	switch (closed)

#### Diagrams



#### Vocabulary

**Ammeter** - measures the current in a circuit

**Appliances** - a device or machine in your home that you use to do a job such as cleaning or cooking. Appliances are often electrical.

**Battery** - small devices that provide the power for electrical items such as torches

**Bulb** - the glass part of an electric lamp, which gives out light when electricity passes through it.

**Buzzer** - an electrical device that is used to make a buzzing sound

**Cell** - a synonym for battery

**Circuit** - a complete route which an electric current can flow around

**Component** - the parts that something is made of

**Conductor** - a substance that heat or electricity can pass through or along

**Current** - a flow of electricity through a wire or circuit

**Device** - an object that has been invented for a particular purpose

**Electricity** - a form of energy that can be carried by wires and is used for heating and lighting, and to provide power for devices

**Energy** - the power from sources such as electricity that makes machines work or provides heat

**Fuel** - a substance such as coal, oil, or petrol that is burned to provide heat or power

**Generate** - cause it to begin and develop

**Insulator** - a non-conductor of electricity or heat

**Mains** - where the supply of water, electricity, or gas enters a building

**Motor** - a device that uses electricity or fuel to produce movement

**Power** - Power is energy, especially electricity that is obtained in large quantities from a fuel source and used to operate lights, heating, and machinery.

**Resistance** - a force which slows down a moving object or vehicle

**Resistor** - a part of an electric circuit that provides resistance to some of the current

**Source** - where something comes from

**Switch** - a small control for an electrical device which you use to turn the device on or off

**Voltage** - the force of an electric current as measured in volts

**Wires** - a long thin piece of metal that is used to fasten things or to carry electric current

### Scientific enquiry

- Match circuit symbols to their meanings and their words.
- Predict, then investigate what happens when more batteries are added to a circuit. Explain why this happens.
- Predict, then investigate what happens when more bulbs,            motors are added to a circuit. Explain why this happens.
- Systematically identify the effect of changing one component at a time in a circuit.
- Use circuit symbols when representing a simple circuit in a diagram.
- Design and make a set of traffic lights, a burglar alarm or some other useful circuit.
- Investigate what happens when the voltage of the battery changes.
- Investigate what happens when the length of the wires changes.
- Investigate what happens when you add a resistor to a circuit.
- Use ammeters to measure the current in a circuit.

### What will I know by the end of the unit?

- associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
- 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
- use recognised symbols when representing a simple circuit in a diagram