Sithney C.P. School Knowledge Organisers

Science. Physics: Electricity

What you should already know:

- 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, and associate metals with being good conductors.

Key learning:

- Adding more cells to a complete circuit will make a bulb brighter, a motor spin faster or a buzzer make a louder sound.
- If you use a battery with a higher voltage, the same thing happens.
- Adding more bulbs to a circuit will make each bulb less bright.
- Using more motors or buzzers, each motor will spin more slowly and each buzzer will be quieter.
- Turning a switch off (open) breaks a circuit so the circuit is not complete and electricity cannot flow. Any bulbs, motors or buzzers will then turn off as well.
- You can use recognised circuit symbols to draw simple circuit diagrams.

Key Vocabulary:

Battery/cell: A stored source of electricity.

Bulb/lamp: A glass bulb which provides light by passing an electrical current through a filament.

Buzzer: An electrical device that makes a buzzing noise and is used for signalling (for example, in a burglar alarm).

Circuit diagram: see example provided.

Complete circuit: A complete and closed path around which a circulating current can flow.

Conductor: an object that allows electricity to flow through it easily (objects made of metal are good conductors.

Current: A flow of electricity which results from the ordered directional movement of electrically charged particles.

Electricity: A form of energy caused by electrons moving.

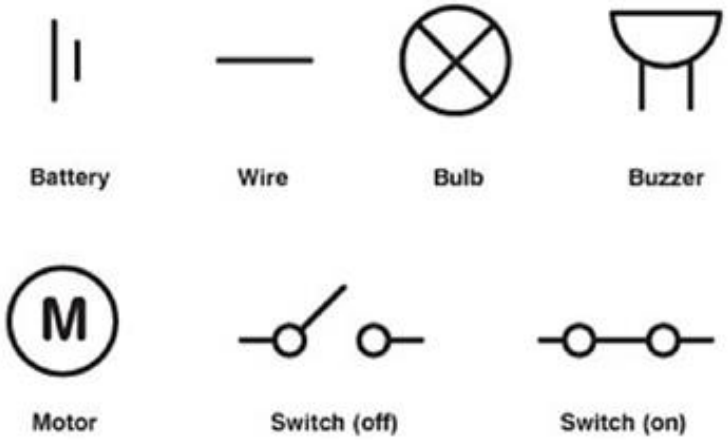
Insulator: An object that does not allow electricity to flow through it easily.

Motor: A machine that turns electrical energy into Movement.

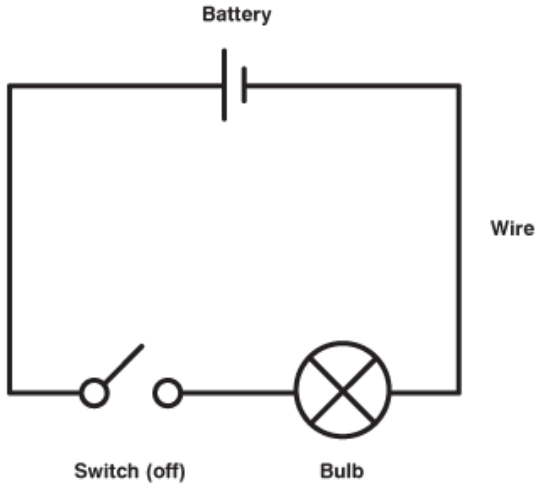
Switch: A switch turns an electrical circuit on or off by completing or breaking the circuit.

Voltage: The force that makes electricity move through a wire.

Circuit Diagram Symbols



Circuit Diagram



Scientific Method: planning an investigation

Variables

Choose your **independent variable** (what you will change) and your **dependent variable** (what you will measure)

Question

Create your question: what is the effect of changing the (**independent variable**) on the (**dependent variable**).

Prediction

Make a prediction of what you think will happen based on what you already know.

Equipment

List all of the equipment you will use.

Method

Describe the method using numbered bullet points.

Risks

Identify any risks you must be aware of to ensure safety.