



St Andrew's C of E Maghull

Science Knowledge Organiser

Year 4 – Spring 2 - Electricity



Knowledge

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.

Vocabulary

Electricity - a form of energy resulting from the existence of charged particles (such as electrons or protons)

electrical appliance/device - piece of electrical equipment designed to perform a specific task.

Mains - the source of electricity supply through cables

Plug - a device for making an electrical connection between an appliance and the mains, consisting of an insulated casing with metal pins that fit into holes in a socket.

electrical circuit - a complete and closed path around which a circulating electric current can flow.

Component - a part or element of a larger whole, especially a part of a machine

Cell - used for generating current

Battery - a container consisting of one or more cells, in which chemical energy is converted into electricity and used as a source of power.

Positive - containing, producing, or denoting an electric charge opposite to that carried by electrons.

Negative - the part of an electric circuit that is at a lower electrical potential

connect/connections - joined

loose connection - when the circuit is not complete

short circuit - an electrical circuit in a device of lower resistance than that of a normal circuit

crocodile clip - a sprung metal clip with long, serrated jaws, used attached to an electric cable for making a temporary connection to a battery or other component.

Bulb - a light bulb

Switch - a device for making and breaking the connection in an electric circuit

Buzzer - an electrical device that makes a buzzing noise and is used for signalling.

Motor - a machine, especially one powered by electricity or internal combustion, that supplies motive power for a vehicle or for another device with moving parts.

Conductor - a material or device that conducts or transmits heat or electricity

Insulator - a material or device that does not conduct or transmit heat or electricity

Metal - a solid material with good electrical and thermal conductivity

non-metal - an element or substance that is not a metal

symbol - a mark or character used as a conventional representation of an object, function, or process

Lesson Sequence

Lesson 1 - I can explore Electrical appliances and electrical safety.

Lesson 2 - I know the electrical components in a series circuit.

Lesson 3 - I can investigate electrical circuits.

Lesson 4 - I can explore insulators and conductors.

Lesson 5 - I know about electrical switches.
End of unit quiz.