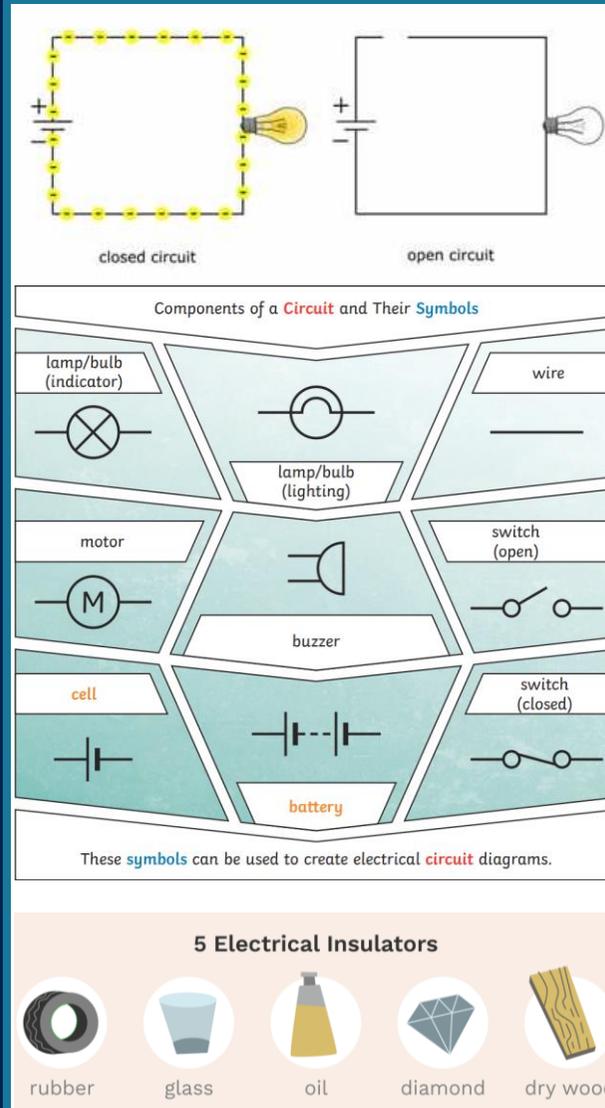


Key Vocabulary:

electricity	The flow of an electric current or charge through a material, e.g. from a power source through wires to an appliance.
generate	To make or produce electricity.
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.
appliance	A piece of equipment or device designed to perform a particular job, such as a washing machine or mobile phone.
battery	A device that stores electrical energy as a chemical.
circuit	A complete route which an electric current can flow around.
conductor	A material or device which allows heat or electricity to flow through it.
wire	A long thin piece of metal that carries an electrical current often covered in plastic for safety.
bulb	A bulb (or lamp) will light up when the circuit is connected correctly.
insulator	Any material that electricity cannot pass through or along.
component	Parts that make up a circuit.
voltage	Electrical force that makes electricity move, measured in volts (V).
switch	A device for making and breaking the connection in a circuit

Diagrams/Images:



The diagrams show a closed circuit with a battery, a bulb, and connecting wires, and an open circuit where the bulb does not light. Below these are symbols for various components: lamp/bulb (indicator), lamp/bulb (lighting), wire, motor, buzzer, switch (open), switch (closed), cell, and battery.

These symbols can be used to create electrical circuit diagrams.

5 Electrical Conductors

- silver
- gold
- copper
- steel
- sea water

5 Electrical Insulators

- rubber
- glass
- oil
- diamond
- dry wood

Key Facts:

- Electricity can only flow around a complete **circuit** that has no gaps. A complete **circuit** is needed for electricity to flow and objects to work.
- Electricity is 'pushed' around a circuit by its source.
- There must be **wires** connected to both the positive and negative end of the power source.
- Switches** can be used to open or close the circuit. When off (**open**), a switch 'breaks' the circuit to stop the flow of electricity. When the switch is on (**closed**) the circuit is complete and the electricity is able to flow around the circuit.
- Metals are good **conductors**. Electrical **insulators** have no free electrons and so no electric current can be made. Wood, plastic and glass are good insulators.
- There are two sources of electricity; mains electricity and battery electricity. One of these is needed for electricity to flow round a circuit.
- More batteries will push the electricity faster around the circuit. **Components** work harder when more electricity goes through them. A **bulb** will get brighter until it receives too much power and breaks the circuit.
- Adding more bulbs with the same amount of power will reduce the brightness as it has to share the electricity.



What should I already know:

- Objects need electricity to work.
- A switch turns something on and off.