Electricity KNOWLEDGE ORGANISER

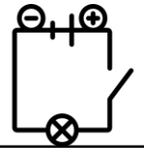
ESSENTIAL ELECTRICITY VOCABULARY

electricity	The flow of electric current through a material
cell	A device (e.g. a battery) used to generate electricity
switch	A device for making or breaking the connection in an electric circuit
wire	A conductor that carries an electrical current through a circuit
motor	A device that moves when an electrical current is run to it
ammeter	An instrument for measuring electrical currents in amperes
voltmeter	An instrument for measuring electrical currents in volts
conductor	A material that conducts or transmits heat, electricity or sound
insulator	A material that does not conduct or transmit heat, electricity or sound
voltage	A force expressed in volts
circuit	An electrical device that provides a path for electrical current to flow
lamp	A device for giving light, often consisting of an electric bulb and its holder
materials	The matter something is made from
insulate	Protect something by preventing heart, electricity or sound from travelling
symbol	A mark that represents something else.

Series Circuits

A series circuit only has one routs for the current to take. When more buzzers or bulbs are added, they share the electricity. If any parts of the series circuit is broken, the flow of current stops.

When drawing circuit diagrams, the wires are always drawn using straight lines. Both of these diagrams show a series circuit, but the bottom one shows the diagram using symbols.



Different types of electric current

Battery electricity: chemicals stored in batteries produce an electric current.

Mains electricity: electric charges are sent from power stations through wires to transformers. After that, wires carry the electricity into hours through underground wires.

Conductors and Insulators

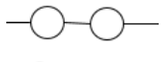
A conductor is a material that allows electricity to flow through it. Some examples of electrical conductors are silver, gold, copper, steel and sea water.

An insulator is a material that does now allow electricity to flow through it. Some examples of electrical insulators are rubber, glass, oil, diamond and dry wood.

Switches

In circuits, switches can either be open or closed. If a switch is open, the circuit is broken and electr cannot travel through it.

If a switch is closed, the circuit is complete and electricity can travel through it. Buzzers, motors and bulbs will only turn on when the switches are closed.



Conductors and Insulators

Many appliances we use in our everyday lives need electricity in order to work. Some appliances (like fridges, washing machines and televisions) use mains electricity and others (like cameras, mobile phones and laptops) use batteries to make them work. Some batteries can only be used ones but others can be regularly charged and re-used.

How to make a bulb brighter or a buzzer louder

- Add more batteries or a higher voltage
- Use shorter wires
- Remove any other buzzers or bulbs

How to make a bulb dimmer or a buzzer quieter

- Use fewer batteries or a lower voltage
- Use longer wires
- Add more buzzers or bulbs to share the power

MAKING LINKS TO PREVIOUS LEARNING
GOLDEN VOCABULARY

Lighthouses	Lighthouses have large **lamps** which provide light to guide ships
Materials	Some **materials** conduct electricity and others don't.
Arctic and Antarctic	Animals that live in the polar regions have adapted to be **insulated**
World religions	Each religion has special **symbols** representing different things.

Symbols

lamp/ bulb (indicator)	lamp/ bulb (lighting)	motor
buzzer	switch (open)	switch (closed)
cell	battery	wire