Trinity Primary School - Science

Topic: Danger! Low Voltage		Year: 6	Strand: Electricity

Enquiry Questions

How many simple circuits can you make?

What does a switch do?

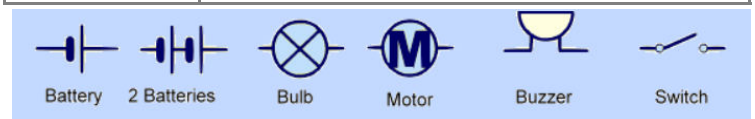
How strong is your resistance?

Can you interpret circuit diagrams?

Will the lights stay on?

Can you protect the crown jewels?

	Key Vocabulary
(Series) Circuit	A path that an electrical current can flow around in order
Current	The flow of electrons around a circuit (measured in amps)
Electron	A very small particle that travels around an electrical circuit
Voltage	The force that makes and electrical current move. The greater the voltage, the more current flows
Cell / battery	A device that stores electrical energy. A battery is a collection of cells.
Components	Devices in an electrical circuit
Wire	A metal pathway that allows electrical flow
Bulb	A device that converts electricity into light
Switch	A device that controls the flow of electricity (includes toggle, push, slide, tilt, trembler, pressure, reed types)
Buzzer	A device that converts electricity into sound
Motor	A device that converts electricity into movement
Symbol	A picture that represents something else
Fuse	A safety device that prevents too much current flowing in a circuit.
Electrical insulator	An electrical insulator is a material that does not easily allow flow of electricity through an electric current.
Electrical conductor	Conductors are substances that an electric charge can pass through without difficulty.
Resistor	The electrical resistance of an electrical conductor is a measure of the difficulty of passing an electric current through a substance.



What do I need to know?

Electrical components are the working parts of any electrical circuit, including cells, switches, bulbs, buzzers and the connecting wires. They are the parts that electricity can flow through, so are said to conduct electricity. Any material that does not conduct electricity is said to be an insulator.

Electricity can occur in nature (static electricity; lightning) or can be generated, often by burning fossil fuels to create steam. There are renewable sources of electricity, such as solar, wave or wind generators. Once generated, electricity is stored in cells (a group of cells is called a battery). A fuse is a device that shuts off the voltage when there is too much electrical current flowing and is used to protect the components and keep property safe—too much electricity flowing can cause a fire.

An electrical current is the flow of electrons through a conductor and is measured in amps. The amount of 'push' that is provided to propel the current (electron flow) around a circuit is called the voltage. The more 'push' that is supplied, the faster the flow of electrons, the more 'work' that the electricity can perform.

Science: Retrieval Quiz

1) What is an electrical component?

2) What is an insulator?

3) Name a source of electricity.

4) What might happen if your house did not have a fuse box?

5) What is an electrical current?

6) What is a cell? Draw its symbol.

7) What is a bulb? Draw its symbol.

8) What happens when the voltage in a circuit is increased?

9) Draw a simple circuit using symbols.

10) What happens to a circuit when a switch is turned off?

Significant Scientists

Nicholas Tesla was a Serbian-American engineer and physicist. He invented the first alternating current (AC) motor and developed AC generation and transmission technology. He worked for Thomas Edison when he first moved to New York.

Peter Rawlinson is a British engineer based in California. He is working on the development of electric vehicles, providing clear vision for a next-generation product.

Useful Websites

- https://www.bbc.co.uk/bitesize/topics/zj44jxs
- http://www.primaryhomeworkhelp.co.uk/revision/Science/electricity.htm