


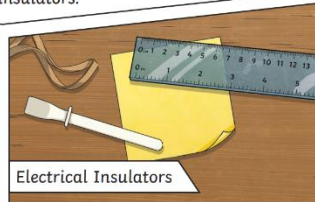







Leamington Primary Science Knowledge Organiser Year 4 – Electricity –

Investigating circuits Strand – physics



What I should already know	What I will learn	Important words to help me. (vocabulary)	Ideas for Scientific Enquiry																								
<ul style="list-style-type: none"> • That electricity is a source of power • That electrical appliance need power to be functional • That electricity is used in many everyday objects 	<div data-bbox="405 416 712 751"> <p>Key Knowledge</p>  <p>Electricity can only flow around a complete circuit that has no gaps. There must be wires connected to both the positive and negative end of the power supply/battery.</p> </div> <div data-bbox="719 416 1032 751"> <p>Switches can be used to open or close the circuit. When off, a switch 'breaks' the circuit to stop the flow of electrons. When the switch is on, the circuit is complete and the electrons are able to flow around the circuit.</p>  </div> <div data-bbox="405 762 1032 863"> <p>A conductor of electricity is a material that is made up of free electrons which can be made to move in one direction, creating an electric current. 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.</p> </div> <div data-bbox="405 868 712 1070"> <p>Electrical Conductors</p>  </div> <div data-bbox="719 868 1032 1070"> <p>Electrical Insulators</p>  </div> <div data-bbox="338 1082 674 1302"> <p>There are two types of electric current.</p> <p>Mains electricity: power stations send an electric charge through wires to transformers and pylons. Then, underground wires carry the electricity into our homes via wires in the walls and out through plug sockets.</p>  </div> <div data-bbox="680 1082 1093 1302"> <p>Battery electricity: batteries store chemicals which produce an electric current. Eventually, even rechargeable batteries will stop producing an electric current.</p>  </div>	<table border="1"> <tr> <td>Electricity</td> <td>The flow of an electric current or charge through a material e.g. from a power sources through wires to an appliance.</td> </tr> <tr> <td>Generate</td> <td>To make or produce</td> </tr> <tr> <td>Renewable</td> <td>A source of energy that does not run out. These include solar, hydro, nuclear, wind and geothermal.</td> </tr> <tr> <td>Non-renewable</td> <td>A source of energy that will eventually run out and so will no longer be able to be used to make electricity. These include fossil fuels - oil, coal and natural gas.</td> </tr> <tr> <td>Appliance</td> <td>A piece of equipment or device designed to perform a particular job, such as a washing machine or mobile phone.</td> </tr> <tr> <td>Battery</td> <td>A device that stores electrical energy as a chemical.</td> </tr> <tr> <td>Cell</td> <td>The scientific name for a battery.</td> </tr> <tr> <td>Switch</td> <td>Switches can be used to open or close a circuit.</td> </tr> <tr> <td>Circuit</td> <td>A pathway that electricity can flow around. It includes wires, a battery and may include bulbs, buzzers or switches.</td> </tr> <tr> <td>Wire</td> <td>Metal cable through which electricity can flow.</td> </tr> <tr> <td>Insulator</td> <td>An insulator of electricity has no free electrons and so no electrical current can be made.</td> </tr> <tr> <td>Conductor</td> <td>A conductor of electricity is a material that is made up of free electrons, which can be made to move in one direction, creating an electrical current.</td> </tr> </table>	Electricity	The flow of an electric current or charge through a material e.g. from a power sources through wires to an appliance.	Generate	To make or produce	Renewable	A source of energy that does not run out. These include solar, hydro, nuclear, wind and geothermal.	Non-renewable	A source of energy that will eventually run out and so will no longer be able to be used to make electricity. These include fossil fuels - oil, coal and natural gas.	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.	Cell	The scientific name for a battery.	Switch	Switches can be used to open or close a circuit.	Circuit	A pathway that electricity can flow around. It includes wires, a battery and may include bulbs, buzzers or switches.	Wire	Metal cable through which electricity can flow.	Insulator	An insulator of electricity has no free electrons and so no electrical current can be made.	Conductor	A conductor of electricity is a material that is made up of free electrons, which can be made to move in one direction, creating an electrical current.	<ul style="list-style-type: none"> • Investigate which objects around your home conduct electricity. • Did you know playdough is an electrical conductor? Test it and see! <div data-bbox="1850 624 2186 1066">  </div> <ul style="list-style-type: none"> • Check out this website for more fun experiments https://frugalfun4boys.com/easy-static-electricity-science-experiments/
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<p>Interesting Facts</p>																											
<ul style="list-style-type: none"> • Electricity travels at the speed of light • Lightning is the discharge of electricity in the atmosphere • Electricity was discovered in 600BC • The first electric car was developed in 1932 																											