



Skills and Knowledge Organiser Year 4 Summer Term Science – Circuits

Key Knowledge and Skills	Working scientifically	Key Vocabulary	Key Questions
<p>To identify common appliances that run on electricity</p> <p>To identify mains operated and battery operated devices</p> <p>To describe some of the dangers associated with mains electricity</p> <p>To name some components of a simple electrical circuit</p> <p>To know that batteries are sources of electricity</p> <p>To recognise that for a circuit to work it must be complete</p> <p>To construct a working circuit</p> <p>To construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>To make drawings of simple working circuits (pictorial only circuit symbols covered in year 6)</p> <p>To make circuits from drawings provided</p> <p>To 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 are methodical in tracing faults in simple circuits</p> <p>To describe the effect of making and breaking one of the contacts on a circuit</p> <p>To explain why some circuits work and others do not</p> <p>To recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>To describe how switches work</p>	<p>asking relevant questions and using different types of scientific enquiries to answer them</p> <p>setting up simple practical enquiries, comparative and fair tests</p> <p>making systematic and careful observations and, where appropriate, taking accurate measurements using standard units,</p> <p>using a range of equipment, including thermometers and data loggers</p> <p>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p> <p>recording findings using simple scientific language, drawings, labelled diagrams,</p>	<p>Circuit- a route for electricity to flow around</p> <p>Electricity- energy caused by the movement of electrons through matter.</p> <p>Battery- a device that makes electricity by using chemical reactions. Batteries are used to power many things, including cars, flashlights, toys, and watches.</p> <p>Wires- a thin rod or thread of metal. The line or cable used in a telephone, telegraph, or electric power system.</p> <p>Switch- a device that opens and closes an electrical circuit.</p> <p>Buzzer- an electrical device that signals by buzzing.</p> <p>Bulb- a device made of rounded glass used to create electric light.</p> <p>Symbol- an object or picture that represents something else.</p> <p>Insulator- a material or device that does not conduct electricity, such as an object of glass or</p>	<p>What is electricity and how do we use it?</p> <p>Which appliances run on electricity?</p> <p>How does a circuit work? What would prevent a circuit from working?</p> <p>What are electrical conductors and insulators?</p> <p>Identify and name some electrical symbols.</p>



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<p>To construct a home-made switch</p> <p>To identify materials as conductors or insulators</p> <p>To construct simple circuits and use them to test whether materials are electrical conductors or insulators</p> <p>To recognise some common conductors and insulators, and associate metals with being good conductors</p>	<p>keys, bar charts, and tables</p> <p>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> <p>using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>identifying differences, similarities or changes related to simple scientific ideas and processes</p> <p>using straightforward scientific evidence to answer questions or to support their findings.</p>	<p>porcelain that is used to insulate and support electric wires.</p> <p>Conductor- anything that carries or allows passage of heat, electricity, or sound.</p> <p>Appliance- a device used for a particular purpose. Stoves, refrigerators, toasters, vacuum cleaners, and room heaters are some appliances used in the home. Most appliances use electricity.</p> <p>Component- a part of something.</p>	
<p style="text-align: center;">Activities/Investigations</p> <p style="text-align: center;">Conductors and Insulators- Will your circuit work? Design and carry out an investigation- https://sigmascience.co.uk/resources/y4-conductor-or-insulator/ https://www.stem.org.uk/resources/elibrary/resource/26720/electricity-its-electric</p>			



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Making circuits for a purpose

<https://sigmascience.co.uk/resources/making-circuits-for-a-purpose/>

Electricity-<https://www.bbc.co.uk/bitesize/topics/zq99q6f/resources/1>