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| **Creech St Michael Primary School** | | |
| **Science:**  **Physics** | **Electricity** | **Year**  **3 / 4** |

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| **Background understanding (what I should already know)…** |
| * **Electricity is a form of energy that can be carried by wires and is used for heating and lighting, and to provide power for devices.** * **Sources of light and sound may need electricity to work.** |

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| **What I will know by the end of the unit…** | |
| **Identify common appliances that run on electricity** |  |
| **Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers** | . |
| **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** |  |
| **Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit** |  |
| **Recognise some common conductors and insulators, and associate metals with being good conductors** |  |

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| **Key vocabulary** | |
| **Appliance** | A **device** or machine in your home used to do a job such as cleaning or cooking. **Appliances** are often **electrical**. |
| **Battery** | Small **device**s that provide **power** for **electrica**l items such as torches. A battery is one or more **cells, connected**. |
| **Bulb** | The glass part of an **electric** lamp, which gives out light when **electricity** **passes** through it. |
| **Buzzer** | An **electrical device** that is used to make a buzzing sound |
| **Cell** | An electrical cell is **a device used to generate electricity, or to make chemical reactions by applying electricity**. |
| **Circuit** | A complete route which an electric current can flow around |
| **Component** | The parts that something is made of |
| **Conductor** | A substance that heat or electricity can pass through or along |
| **Current** | A flow of electricity through a wire or circuit |
| **Device** | **A**n object that has been invented for a particular purpose |
| **Electricity** | A form of **energy** that can be carried by wires and is used for heating and lighting, and to provide power for devices |
| **Energy** | The **power** from **sources** such as **electricity** that makes machines work or provides **heat** |
| **Fuel** | A substance such as coal, oil, or petrol that is burned to provide heat or power |
| **Generate** | **cause it to begin and develop** |
| **Insulator** | A **non-conductor** of **electricity** or **heat** |
| **Mains** | Where the supply of water, electricity, or How does a gas enters a building |
| **Motor** | A **device** that uses **electricity** or fuel to produce movement |
| **Power** | **Power** is **energy**, especially **electricity**, that is obtained in large quantities from a fuel source and used to operate lights, heating, and machinery |
| **Source** | Where something comes from |
| **Switch** | A small control for an **electrical device** which you use to turn the **device on** or **off** |
| **Wires** | A long thin piece of metal that is used to fasten things or to carry **electric current** |

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| **Possible Scientific Enquiry Questions…** | |
| **Observing Patterns** | * Notice that the bulbs get brighter if more cells are added that metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit. |
| **Identifying, classifying and grouping** | * Investigate and sort which materials are electrical conductors and which are insulators. * Transfer results from tables to a Venn diagram containing 2 intersecting sets ('electrical conductors' and 'made of metal') and try to identify a relationship. |

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| **Who: (famous people)** | |
| **Thomas Alva Edison**  **1847-1931** | **Edison** was a famous American inventor.  He’s best known for inventing **domestic lightbulbs** for use in houses, and the electric power system that allows them to work. He invented **over 1000 successful inventions in his lifetime**. |
| **James Watt**  **1736-1819** | Watt was born in Scotland. While working as an instrument maker at the [University of Glasgow](https://kids.kiddle.co/University_of_Glasgow), Watt became interested in the technology **of**[**steam engines**](https://kids.kiddle.co/Steam_engine). He’s known as an inventor, mechanical engineer, and [chemist](https://kids.kiddle.co/Chemist) who created the Watt steam engine in 1781, which was fundamental to the changes brought by the[**Industrial Revolution**](https://kids.kiddle.co/Industrial_Revolution)**.** |
| **Nikola Tesla**  **1856–1943** | Tesla was a Serbian inventor, electrical engineer, mechanical engineer, and physicist. Tesla was best known for his part in the design of the **modern alternating current (AC) electricity supply system.** His most famous invention was an electric **motor** that could run well on AC power |

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| **Circuit Symbols and Diagrams** |
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**Scientific skills and enquiry (Year 3 and 4)**

* Ask relevant questions and use different types of scientific enquiries to answer them.
* Set up simple practical enquiries, comparative and fair tests.
* Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.
* Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.
* Gather, record, classify and present data in a variety of ways to help in answering questions.
* Identify differences, similarities or changes related to simple scientific ideas and processes.
* Report on findings from enquiries including oral and written explanations, displays or presentations of results and conclusions.
* Use straightforward scientific evidence to answer questions or to support their findings.
* Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.