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| Science Focus | Electricity | Year 4 | Autumn 1 |

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| Key Knowledge | |
| **What is electricity?** | ** Electricity is created by generators which can be powered by gas, coal, oil, wind or solar.  The electrical energy can be converted into other types of energy such as light, heat, movement or sound.**  ** Electricity is dangerous, so be careful when using electrical appliances.** |
| **What are common appliances that run on electricity?** | **Any appliances that need to be plugged in run on electricity.**  **For example: Television, Computer, Microwave, Lights** |
| **A series circuit** | ** Electricity can flow through the components in a complete electrical circuit.**  ** A circuit always needs a power source, such as a battery, with wires connected to both the positive (+) and negative (-) ends. (A battery is made from a collection of cells connected together).**  ** A circuit can also contain other electrical components, such as bulbs, buzzers or motors, which allow electricity to pass through.**  ** Electricity will only travel around a circuit that is complete. That means it has no gaps** |
| **What is a switch?** | ** You can use a switch in a circuit to create a gap in a circuit. This can be used to switch it on and off.  When a switch is open (off), there is a gap in the circuit. Electricity cannot travel around the circuit.  When a switch is closed (on), it makes the circuit complete. Electricity can travel around the circuit** |
| **Conductors** | ** Many metals, such as iron, copper and steel, are good electrical conductors.** |
| **Insulators** | ** Wood, glass, plastic and rubber are good electrical insulators. That is why they are used to cover materials that carry electricity.** |

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| Key Vocabulary | |
| **Generator** | **A machine that make electrical energy** |
| **Component** | **A part of something** |
| **Circuit** | **A path through which an electrical current flows** |
| **Current** | **The flow of electrical charge** |
| **Connected** | **Something that is joined** |

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| Possible Experiences |
| **- Set up circuits and predict whether the bulb will light or not.**  **- Set up circuits and experiment with ways to make the bulbs brighter.**  **- Set up a circuit to test materials that are conductors or insulators.** |

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| Diagrams and Symbols |
| **Greater Depth Thinking** |