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| **Parklands Primary School - Science** | |
| **Topic: Electricity** | **Year 6** |

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| **What should I already know?** | What I should know by the end of the unit. |
| * **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**.** * Where **electricity** comes from * Which **appliances** need **electricity** * What a **circuit** is, the **components** of a circuit and how it works. * What **electrical conductors** and **insulators** are. * What happens when a **switch** is added to a circuit. * What **forces** and **resistance** are. | * How adding more cells affects the brightness of a bulb or the sound of a buzzer. * How to draw circuit diagrams. * How to explain why circuits do or don’t work.   **Diagrams** |
| Scientific Learning and Enquiry | |
|  | * Match **circuit** symbols to their meanings and their words. * Predict, then investigate what happens when more batteries are added to a circuit. Explain why this happens. * Predict, then investigate what happens when more bulbs, motors are added to a circuit. Explain why this happens. * Systematically identify the effect of changing one component at a time in a circuit. * Use **circuit** symbols when representing a simple **circuit** in a diagram. * Design and make a set of traffic lights, a burglar alarm or some other useful **circuit**. * Investigate what happens when the **voltage** of the battery changes. * Investigate what happens when the length of the wires changes. * Investigate what happens when you add a **resistor** to a **circuit.** * Use **ammeters** to measure the **current** in a **circuit.** |
| ammeter measures the **current** in a **circuit**  appliance a **device** or machine in your [home](https://www.collinsdictionary.com/dictionary/english/home) that you use to do a [job](https://www.collinsdictionary.com/dictionary/english/job) such as cleaning or [cooking.](https://www.collinsdictionary.com/dictionary/english/cook) **Appliances** are often **electrical**.  battery small **devices** that provide the **power** for [**electrical**](https://www.collinsdictionary.com/dictionary/english/electrical) [items](https://www.collinsdictionary.com/dictionary/english/item) such as [torches](https://www.collinsdictionary.com/dictionary/english/torch)  bulb the [glass](https://www.collinsdictionary.com/dictionary/english/glass) part of an [**electric**](https://www.collinsdictionary.com/dictionary/english/electric) [lamp,](https://www.collinsdictionary.com/dictionary/english/lamp) which gives out light when **electricity** passes through it.  buzzer an [**electrical**](https://www.collinsdictionary.com/dictionary/english/electrical) **device** that is used to make a buzzing sound  cell a synonym for **battery**  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**](https://www.collinsdictionary.com/dictionary/english/electricity) through a **wire** or [**circuit**](https://www.collinsdictionary.com/dictionary/english/circuit)  device an object that has been [invented](https://www.collinsdictionary.com/dictionary/english/invent) for a particular [purpose](https://www.collinsdictionary.com/dictionary/english/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,](https://www.collinsdictionary.com/dictionary/english/oil) or petrol that is burned to [provide](https://www.collinsdictionary.com/dictionary/english/provide) heat or **power**  generate cause it to begin and develop  insulator a non-**conductor** of **electricity** or heat  mains where the [supply](https://www.collinsdictionary.com/dictionary/english/supply) of water, **electricity**, or gas [enters](https://www.collinsdictionary.com/dictionary/english/enter) a building  motor a **device** that uses [**electricity**](https://www.collinsdictionary.com/dictionary/english/electricity) or [fuel](https://www.collinsdictionary.com/dictionary/english/fuel) to produce  power **power** is **energy**, [especially](https://www.collinsdictionary.com/dictionary/english/especially) [**electricity**,](https://www.collinsdictionary.com/dictionary/english/electricity) that is obtained in large quantities from a [fuel](https://www.collinsdictionary.com/dictionary/english/fuel) **source** and used to operate lights, heating, and machinery  resistance a force which slows down a moving object or vehicle  source where something comes from  switch a small control for an **electrical device** which you use to turn the **device** on or off  voltage the force of an electric current as measured in **volts**  wires a long thin piece of metal that is used to fasten things or to carry **electric current** |

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| Question 4: Explain what will happen if another bulb is added to a working  circuit. | Start of unit: | End of unit: |
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| Question 5: Shorter wires will make bulbs brighter. True or False? | Start of unit: | End of unit: |
| true |  |  |
| false |  |  |

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| Question 6: Explain what a conductor will do when added to a circuit. | Start of unit: | End of unit: |
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| Question 3: Explain what will happen if another battery is added to a circuit  with a bulb. | Start of unit: | End of unit: |
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| Question 7: A circuit will not work if…. (tick three): | Start of unit: | End of unit: |
| there is no battery |  |  |
| the switch is off |  |  |
| there is a break in the circuit |  |  |
| there is no switch |  |  |

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| Question 2: Which of these circuits will light? | Start of unit: | End of unit: |
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| Question 1: Write the name for the component that each of these symbols represent. | Start of unit: | End of unit: |
| battery symbol |  |  |
| lamp (indicator) symbol |  |  |
| buzzer symbol |  |  |
| cell symbol |  |  |
| motor symbol |  |  |
| SPST on-off switch symbol |  |  |

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| Question 8: What is the function of an ammeter in a circuit? | Start of unit: | End of unit: |
| measures the length of the wires in a circuit |  |  |
| measures the current in a circuit |  |  |
| measures how heavy the components are |  |  |

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| Question 8: Imagine you only have this equipment. Draw a circuit using circuit symbols featuring this equipment. | Start of unit: | End of unit: |
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| Question 9: Look at this circuit. The buzzer is currently not very loud. What could you do to make it louder? | Start of unit: | End of unit: |
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