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| **ADVENT TERM  2**  **SCIENCE – Year 6 - Medium Term Planning – PHYSICS: ELECTRICITY** | | |
| **LESSON  1** | **LESSON  2** | **LESSON  3** |
| **LEARNING INTENTION:**  To know that a circuit is made up of different components. (Y4 recap).  To know that there are recognised symbols for different components of circuits.  Skills:  Recognise and name electrical components.  Aim:  Develop scientific knowledge and conceptual understanding through the specific disciplines of physics. | **LEARNING INTENTION:**  To know that series circuits can be recorded using recognised symbols for different components.  Skills:  Create circuits using a range of components and record diagrammatically using the recognised symbols for electrical components.  Aim:  Develop scientific knowledge and conceptual understanding through the specific disciplines of physics. | **LEARNING INTENTION:**  To know that the volume of a buzzer will change when the wire length is altered.  Skills:  Make systematic and careful observations, using them to make comparisons, identify changes, classify and make links between cause and effect.  Aim:   Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them. |
| **Key Vocabulary:**  materials, electrical conductors, electrical insulators, flow. symbol, component, cell, lamp, motor, open switch, closed switch, wire, buzzer, LED, battery, voltmeter | **Key Vocabulary:**  Symbol, component, cell, lamp, motor, open switch, closed switch, wire, buzzer, LED, battery, voltmeter, series circuit | **Key Vocabulary:**  Wire, resistance, volume, buzzer, sound quality, circuit, length |
| **Recap & retrieval:**   * Electricity is a form of energy that makes things work. (Recap on Y4 Electricity) | **Recall & retrieval:**   * There are recognised symbols for different components of circuits. | **Recall & retrieval:**   * There are recognised symbols for different components of circuits. * A collection of components connected by wires in a loop is called a series circuit. |
| **Key Knowledge:**  **Child:**   * Materials that allow electricity to flow through them are called electrical conductors. * Materials that do not allow electricity to flow through them are called electrical insulators. * There are recognised symbols for different components of circuits.   **Teacher:**   * Electricity is a form of energy that makes things work. (Y4 Recap) * Circuit components include cells, buzzers, switches, wires, lamps and motors. | **Key Knowledge:**  **Child:**   * A collection of components connected by wires in a loop is called a series circuit. * When electricity flows through all the components of a circuit, it is called a complete circuit. * When electricity cannot flow through all the components of a circuit, it is called an incomplete circuit. * Symbols allow for universal identification.   **Teacher:**   * Circuit symbols are used in circuit diagrams showing how a circuit is connected together. * A circuit diagram is a simplified drawing that represents a real electrical circuit. | **Key Knowledge:**  **Child:**   * The greater the length of wire, the greater the resistance. * The greater the resistance, the lesser the volume.   **Teacher:**   * Resistance measures how well a material or object conducts electricity. * Low resistance means the object conducts electricity well. * High resistance means the object does not conduct electricity well. |

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| **ADVENT TERM  2**  **SCIENCE – Year 6 - Medium Term Planning – PHYSICS: ELECTRICITY** | | |
| **LESSON  4** | **LESSON  5** | **LESSON  6** |
| **LEARNING INTENTION:**  To know that a switch can open and close a series circuit.  Skills:  Compare and give reasons for variations in how components in electrical circuits function.  Aim:   Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them. | **LEARNING INTENTION:**  To know that the voltage of a cell in a circuit affects the brightness of a lamp.  Skills:  Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.  Aim:  Develop scientific knowledge and conceptual understanding through the specific disciplines of physics. | **LEARNING INTENTION:**  To know that the speed of a motor can be increased and decreased.  Skills:  Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.  Aim:  Develop scientific knowledge and conceptual understanding through the specific disciplines of physics. |
| **Key Vocabulary:**  Switch, open, closed, circuit, current, flow, travel | **Key Vocabulary:**  Current, volt, voltage, brightness, bulb, cell, electrons, electrical energy. | **Key Vocabulary:**  Speed, motor, increase, decrease, electric current, slower, faster |
| **Recall & retrieval:**   * There are recognised symbols for different components of circuits. * A collection of components connected by wires in a loop is called a series circuit. * The greater the resistance, the lesser the volume. | **Recall & retrieval:**   * There are recognised symbols for different components of circuits. * A collection of components connected by wires in a loop is called a series circuit. * The greater the resistance, the lesser the volume. * When a switch is closed, it completes the circuit and allows a current to flow all the way around it. | **Recall & retrieval:**   * There are recognised symbols for different components of circuits. * A collection of components connected by wires in a loop is called a series circuit. * The greater the resistance, the lesser the volume. * When a switch is closed, it completes the circuit and allows a current to flow all the way around it. * The higher the current, the higher the brightness. |
| **Key Knowledge:**  **Child:**   * When a switch is closed, it completes the circuit and allows a current to flow all the way around it. * When a switch is open, it creates a gap and the current cannot travel around the circuit.   **Teacher:** | **Key Knowledge:**  **Child:**   * The higher the voltage, the higher is the current. * The higher the current, the higher the brightness. * The more voltage flowing through a lamp, buzzer or motor, the brighter the lamp, the louder the buzzer and the faster the motor.   **Teacher:**   * Voltage is measured in volts (V) and is a measure of the difference in electrical energy between two parts of a circuit. * The bigger the voltage, the more electrons are pushed through the circuit. | **Key Knowledge:**  **Child:**   * The speed of a motor can be increased and decreased by changing the electric current.   **Teacher:**   * A small current means a slower speed. * A large current means a faster speed. |
| **Assessment**   Cumulative quiz. Retrieval practice. | | |