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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.
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| **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.
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| **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.
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| **Assessment**  Cumulative quiz. Retrieval practice. |