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. **Disciplinary Knowledge:** • Use recognised symbols when representing a simple circuit in a diagram. **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. **Disciplinary Knowledge:** • Use recognised symbols when representing a simple circuit in a diagram. **Aim:** Develop scientific knowledge and conceptual understanding through the specific disciplines of physics.	**Observing and Measuring** **LEARNING INTENTION:** To know that the volume of a buzzer will change when the wire length is altered. **Disciplinary Knowledge:** • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate **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:	**Key Knowledge:**	**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.	**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.	**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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LESSON 4	LESSON 5	LESSON 6
Using Scientific Evidence **LEARNING INTENTION:** To know that a switch can open and close a series circuit. **Disciplinary Knowledge:** • Identify scientific evidence that has been used to support or refute ideas or arguments. **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.	**Observing and Measuring** **LEARNING INTENTION:** To know that the voltage of a cell in a circuit affects the brightness of a lamp. **Disciplinary Knowledge:** • 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.	**Observing and Measuring** **LEARNING INTENTION:** To know that the speed of a motor can be increased and decreased. **Disciplinary Knowledge:** • 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.		