Science Unit Planner Year: 4 Title: Electricity

Unit Overview	**The children will recognise appliances that run on electricity as well as recognise a range of conductors and insulators. They will be able to create simple circuits and identify whether the circuit will work and know the use of switches.**	
Prior Learning/ Links	Y3 Light and shadow, making a fairground ride work using a motor and circuit	
Unit Title:	**Substantive Knowledge**	**Disciplinary Knowledge**
Key Questions: **What is electricity and what do we use if for?** **How does electricity work?** **Can you create a circuit that is not complete and explain why it will not work.**	• Children know we generate electricity in different ways: Gas, nuclear, solar, wind and through coal or oil. • Common things that we use everyday that run off electricity: lights, TV, washing machine, kettle, vacuum cleaner, iron, tools • Electricity runs through a circuit: - The circuit has to be complete for the electricity to pass through – there can be no gaps. - It always needs a power source – this can be mains or battery. - Circuits can have different components such as a bulb, motor, buzzer. - You can use a switch in a circuit so that a component can be switched off without disconnecting the power source. A switch creates a gap in the circuit when it is open so electricity cannot pass through. When it is closed electricity can pass through again. - Children will recognise why a bulb will not light up in an incomplete circuit. • Children can name common symbols of an electric circuit: battery/ power source, bulb, buzzer, switch, motor • Children know which materials will pass electricity through and which ones will not and sort them as conductors and insulators. Children will know that metal is a good conductor. • Children will be able to create circuits and draw an accurate representation. • Children know that you can set up tests for conductors. CHidlren explain what this looks like and how results are collected. • Children can explain why a fair test is needed.	**Questioning and Planning** To be able to plan and set up a simple test. Ask questions and make statements about why something will or will not happen (hypothesising and predicting). Be able to choose the correct equipment to conduct a test. **Observation and Measurement** To make careful observations. To use a data logger to collect results **Recording and Presenting** Record measurements using a simple chart. Talk about what has been found using scientific language **Analysing and Evaluating** Use evidence to support findings and relate to predictions.
Vocabulary	**Trips/ Visits/Useful Websites/ Resources**	**Key Misconceptions:**
Substantive: Volts Generator	Year 4: Electricity | STEM	

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Fossil fuel Component Circuit Current Connected. Appliance Complete Conductor Insulator Bulb Motor Switch Buzzer Wires clips switch **Disciplinary:** Plan Observe Predict Equipment Safety Evidence Record Data logger	Electricity - Year 3-4 / P4-5 Science Collection - Home Learning with BBC Bitesize - BBC Bitesize **T:\Subject Leader File\Science 2022\all-11088518.zip**	