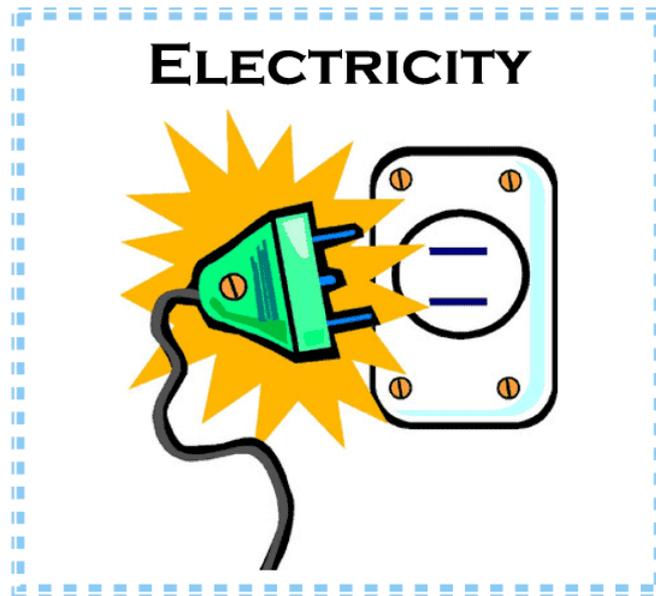




## Sacred Heart Primary School Curriculum Theme Plan

# Electricity: Year 4 -Term 2



**Rationale:** In order to address the skills and knowledge as outlined in the national curriculum. The topic of sound is age appropriate for Year 4. There are opportunities for investigative work to engage the children. Children will learn about what electricity is and how it was discovered. They will identify which appliances use electricity in their homes and how to keep themselves safe. Children will construct circuits, start to create pictorial circuits and conduct an investigation into how easily different types of switches can break and reconnect a circuit.

**Pre-Unit task:** Class brainstorming session - "What we know about electricity"

### Learning Objectives:

1. To explain ways that electricity is generated.
2. To identify electrical appliances and the types of electricity they use.
3. To identify complete and incomplete circuits.
4. To identify and sort materials into electrical conductors or insulators.
5. To explain how a switch works and why they are needed.
6. To record and report on an investigation.

**Curriculum Links:**

**PSHE** Children investigate their own use of electricity for a day and consider if their use of electricity is essential or non-essential. Linked to Eco Warriors

**1. Exciting Electricity**

- To report on findings, including oral and written explanations in the context of preparing a presentation on how electricity is generated.

**2. Electrical Appliances**

- Identify common appliances that run on electricity by learning to distinguish between appliances that use and do not use electricity, the different types of electricity and identify how to stay safe when using electricity

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**3. Electrical Circuits**

- Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
- Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.
- Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery by visualising and testing circuits to see if the circuit is complete.

**4. Conductors and Insulators**

- Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.
- Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.
- Recognise some common conductors and insulators, and associate metals with being good conductors by testing different materials as part of a circuit to see whether or not they conduct electricity.

**5. Splendid Switches**

- Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.
- Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit by creating circuits which contain a switch.

**6. Investigating Switches**

- Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.
- Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.
- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions in the context of making and investigating different switches

**Resources**

- Electrical wires with crocodile clips
- Bulbs
- Bulb Holders
- Batteries (cells)
- Battery (cell) Holders
- Buzzers
- Motors
- Selection of switches

### Opportunities for enrichment:

**SMSVC Links** Spiritual – Reflection on the natural world. Environment and human achievement. Vocational – Develop them as independent thinkers and learners. Social – provide a range of opportunities and activities for pupils to engage cooperatively and courteously with one another Curious about everything; and active in their engagement with the world, changing what they can for the better.

### Impact/Assessment

#### Most Children will:

- *Sort appliances based on whether they use mains or batteries.*
- *They will be able to explain how a switch turns the electric current on and off.*
- *Children will be able to report their findings and conclusions orally.*

#### Less Able Children will:

- *They will learn to identify electrical and nonelectrical appliances.*
- *They will be able to explain, with support, how a circuit works.*
- *Children will be able to name at least two electrical conductors and insulators.*
- *They will be able to create a simple series circuit both with and without a switch.*
- *They will be able to accurately record their findings in a table.*

#### More Able Children will:

- *Explain why a circuit is incomplete.*
- *Generalise about types of materials that conduct electricity.*
- *Explain the conclusions they draw in investigations.*