<table>
<tr><th colspan="2">Year 4 – Electricity</th></tr>
<tr><td>Links made with other subjects</td><td>-Design technology – electrical systems torches</td></tr>
<tr><td>The BIG Question</td><td>Can we control electricity?</td></tr>
<tr><td>The BIG Outcome</td><td>Children write instructions for how to build a circuit including how to troubleshoot any issues</td></tr>
<tr><td>Science objectives
(link to NC)</td><td>- -identify common appliances that run on electricity
- 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
-recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
-recognise some common conductors and insulators, and associate metals with being good conductors</td></tr>
<tr><td>Prior knowledge
What prior knowledge is needed for children to be successful in this unit?</td><td>Children already know:
EYFS – Understanding the world - Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes.</td></tr>
<tr><td>Future learning
Consider the conceptual knowledge within a subject that pupils need for future learning not just the recall of facts but the importance of concepts</td><td>This unit gives prior knowledge to:

Yr 6 - Changing Circuits</td></tr>
<tr><td>Science strands</td><td><u>Related Enquiry Questions</u>
<table>
<tr><td>Classifying</td></tr>
<tr><td>-Based on the children’s own criteria, classify household appliances and/or toys (leading to electrical/not electrical, batteries/mains).
-Test materials to classify into insulators and conductors.</td></tr>
<tr><td>Observing over time</td></tr>
<tr><td>Not relevant</td></tr>
<tr><td>Pattern Seeking</td></tr>
<tr><td>Not relevant</td></tr>
<tr><td>Comparative testing</td></tr>
<tr><td>Not relevant</td></tr>
<tr><td>Researching</td></tr>
<tr><td>Not relevant</td></tr>
</table></td></tr>
<tr><td>Vocabulary/ Glossary</td><td>Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol N.B.</td></tr>
<tr><td>Knowledge
(see italics for knowledge to remember)</td><td>The knowledge that children will learn and remember:
Children in Year 4 do not need to use standard symbols for electrical components, as this is taught in Year 6
1. Many household devices and appliances run on electricity.
2. Children can name some
3. Some plug in to the mains and others run on batteries.</td></tr>
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	4. An electrical circuit consists of a cell or battery (a container consisting of one or more cells, in which chemical energy is converted into electricity and used as a source of power) connected to a component using wires. 5. If there is a break in the circuit, a loose connection or a short circuit, the component will not work. 6. A switch can be added to the circuit to turn the component on and off. 7. Metals are good conductors so they can be used as wires in a circuit. 8. Non-metallic solids are insulators except for graphite (pencil lead). 9. Water, if not completely pure, also conducts electricity.
SEND expectations	1. Many household devices and appliances run on electricity 2. Some plug in to the mains and others run on batteries. 3. An electrical circuit consists of a cell or battery connected to a component using wires. 4. If there is a break in the circuit, a loose connection or a short circuit, the component will not work. 5. A switch can be added to the circuit to turn the component on and off. 6. Metals are good conductors so they can be used as wires in a circuit.
Common misconceptions	Some children may think: -electricity flows to bulbs, not through them - electricity flows out of both ends of a battery -electricity works by simply coming out of one end of a battery into the component.