



Subject: Science (Electricity)

Year Group	What knowledge would we like to know?	What skills would we like to know?	How else could we challenge the pupils?	Vocabulary
R				
Y1	<p><i>Not on the NC for this year group.</i></p> <p><i>Know that electricity is needed to make somethings work.</i></p>	<ul style="list-style-type: none"> • Ask simple questions and recognise that they can be answered in different ways • Use simple equipment to observe closely • Perform simple tests • Identify and classify • Use his/her observations and ideas to suggest answers to questions • Gather and record data to help in answering questions 		
Y2	<p><i>Not on NC for this year group.</i></p> <p><i>Know that electricity is needed to make somethings work.</i></p> <p><i>Know that some appliances need batteries and some use mains electricity to work.</i></p>	<ul style="list-style-type: none"> • Ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum • Use simple equipment to observe closely including changes over time • Perform simple comparative tests • Identify, group, and classify • Use his/her observations and ideas to suggest answers to questions noticing similarities, differences, and patterns 		

Settrington All Saints' Long Term Planning - Skills and Knowledge ladder



		<ul style="list-style-type: none"> • Gather and record data to help in answering questions including from secondary sources of information 		
Y3	Not on NC for this year group, though some teaching will happen.	<ul style="list-style-type: none"> • Ask relevant questions and use different types of scientific enquiries to answer them • Set up simple practical enquiries, comparative and fair tests • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Gather, record, classify and present data in a variety of ways to help in answering questions • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Identify differences, similarities or changes related to simple scientific ideas and processes • Use straightforward scientific evidence to answer questions or to support his/her findings 		
Y4		<ul style="list-style-type: none"> • Ask relevant questions and use different types of scientific enquiries to answer them 	What does a kettle need to work? How do you know?	Y4 Electricity batteries mains electricity

Settrington All Saints' Long Term Planning - Skills and Knowledge ladder



	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Set up simple practical enquiries, comparative and fair tests • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Gather, record, classify and present data in a variety of ways to help in answering questions • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Identify differences, similarities or changes related to simple scientific ideas and processes • Use straightforward scientific evidence to answer questions or to support his/her findings 	<p>Design and make a circuit that has a bulb which lights up. What do you need to make sure the bulb works?</p> <p>Can you use a switch in your circuit? What does it do?</p> <p>Why do we need conductors and insulators? Why do we have plastic around the wires on our circuits?</p>	<p>appliance circuit series circuit component cell voltage current power battery wire bulb conductor insulator metal copper rubber switch current control complete circuit incomplete circuit non-renewable energy renewable energy wind turbines solar panels hydropower</p>
<p>Y5</p>	<p>Not on NC for this year group, though some teaching will happen.</p>	<ul style="list-style-type: none"> • Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate 		



		<ul style="list-style-type: none"> Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Use test results to make predictions to set up further comparative and fair tests Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations Identify scientific evidence that has been used to support or refute ideas or arguments 		
Y6	<ul style="list-style-type: none"> Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches Use recognised symbols when representing a simple circuit in a diagram 	<ul style="list-style-type: none"> Plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variables where necessary Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Use test results to make predictions to set up further comparative and fair tests Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in 	What happens to the brightness of a bulb when you add extra cells to a circuit?	Y6 symbol circuit diagram battery wires electricity current voltage voltmeter brightness blown resistor variable resistor LED dimmer switch output variable fair test control test systematically synchronised traffic light signal sensor timer-based closed electric circuit indicating conductor insulator resistor

Settrington All Saints' Long Term Planning - Skills and Knowledge ladder



		<p>results, in oral and written forms such as displays and other presentations</p> <ul style="list-style-type: none">• Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations• Describe and evaluate their own and other people's scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources• Group and classify things and recognise patterns		
--	--	---	--	--