



# Progression Document - Science



## West Rise Curriculum

**At West Rise, we grow scientists who...**

*Know how to use scientific language effectively to explain the scientific processes that they have learnt.*

*Are able to embrace their natural curiosity and, 'thinking like scientists', work scientifically to investigate questions that they have.*

*Understand that science is happening in the world around them and beyond - both naturally and through human intervention.*

West Rise Aims and Purpose		
Intent	Aims	Character Traits
<p>To develop a lifelong curiosity and interest in the sciences. When planning for the science curriculum, we intend for children to have the opportunity, wherever possible, to learn through varied systematic investigations, leading to them being equipped for life to ask and answer scientific questions about the world around them. As children progress through the year groups, they build on their skills in working scientifically, as well as on their scientific knowledge, as they develop greater independence in planning and carrying out fair and comparative tests to answer a range of scientific questions. Opportunities are planned for children to consolidate and retain the science knowledge they have learnt and to reinforce key scientific vocabulary from previous learning. To provide the children with a varied, progressive and well-mapped-out science curriculum that provides the opportunity for progression across the full breadth of the science national curriculum for KS2.</p>	<ul style="list-style-type: none"> <li>• develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics</li> <li>• 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</li> <li>• <i>seize opportunities for children to engage in hands-on learning and encourage them to suggest investigations</i></li> <li>• learn the scientific knowledge required to understand the uses and implications of science, today and for the future</li> </ul>	<ul style="list-style-type: none"> <li>• Perseverance / resilience               <ul style="list-style-type: none"> <li>- Understands that failure can be an integral part of scientific activities.</li> </ul> </li> <li>• Teamwork               <ul style="list-style-type: none"> <li>- Works collaboratively to plan, hypothesise, carry out, and review scientific investigations.</li> </ul> </li> <li>• Love of Learning               <ul style="list-style-type: none"> <li>- Develops a love of the sciences that equips them with the confidence and curiosity to ask, <i>investigate</i> and answer scientific questions about the world around them.</li> </ul> </li> <li>• Gratitude               <ul style="list-style-type: none"> <li>- Looks in awe and wonder at the world, and asks and attempts to answer questions about how it works.</li> </ul> </li> <li>• Respect               <ul style="list-style-type: none"> <li>- Listens to and respecting the theories and hypotheses of others</li> </ul> </li> </ul>

## National Curriculum

National Curriculum Aims and Purpose		
Purpose of Study	Aims	Attainment Targets
<p>A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.</p>	<p>The national curriculum for science aims to ensure that all pupils:</p> <ul style="list-style-type: none"> <li>➤ develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics</li> <li>➤ 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</li> <li>➤ are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future</li> </ul>	<p>The principal focus of science teaching in <b>lower key stage 2</b> is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.</p> <p>'Working scientifically' must always be taught through and clearly related to substantive science content in the programme of study.</p> <p>Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word-reading and spelling knowledge.</p> <p>The principal focus of science teaching in <b>upper key stage 2</b> is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they</p>

should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

'Working and thinking scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read, spell and pronounce scientific vocabulary correctly.

## Progression - Knowledge and Skills

Subject Content	Knowledge and Skills			
<b>Forces and Magnets</b>	Year 3 Knowledge	Year 4 Knowledge	Year 5 Knowledge	Year 6 Knowledge
	<ul style="list-style-type: none"> <li>• compare how things move on different surfaces;</li> <li>• notice that some forces need contact between 2 objects, but magnetic forces can act at a distance;</li> <li>• observe how magnets attract or repel each other and attract some materials and not others;</li> <li>• compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials;</li> <li>• describe magnets as having 2 poles; predict whether 2 magnets will attract or repel each other, depending on which poles are facing.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object;</li> <li>• identify the effects of air resistance, water resistance and friction, that act between moving surfaces;</li> <li>• recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
	Year 3 Skills	Year 4 Skills	Year 5 Skills	Year 6 Skills
	<ul style="list-style-type: none"> <li>○ asking relevant questions and using different types of scientific enquiries to answer them;</li> <li>○ setting up simple practical enquiries, comparative and fair tests;</li> <li>○ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers;</li> <li>○ gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;</li> <li>○ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables;</li> <li>○ reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions;</li> <li>○ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further</li> </ul>	<ul style="list-style-type: none"> <li>○</li> </ul>	<ul style="list-style-type: none"> <li>○ planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary;</li> <li>○ taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate;</li> <li>○ recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs;</li> <li>○ using test results to make predictions to set up further comparative and fair tests;</li> <li>○ reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations;</li> <li>○ identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>	<ul style="list-style-type: none"> <li>○</li> </ul>

	<p>questions;</p> <ul style="list-style-type: none"> <li>○ identifying differences, similarities or changes related to simple scientific ideas and processes;</li> <li>○ using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>			
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Subject Content	Knowledge and Skills			
<b>Light</b>	Year 3 Knowledge	Year 4 Knowledge	Year 5 Knowledge	Year 6 Knowledge
	<ul style="list-style-type: none"> <li>• recognise that they need light in order to see things and that dark is the absence of light;</li> <li>• notice that light is reflected from surfaces;</li> <li>• recognise that light from the sun can be dangerous and that there are ways to protect their eyes;</li> <li>• recognise that shadows are formed when the light from a light source is blocked by an opaque object;</li> <li>• find patterns in the way that the size of shadows change.</li> </ul>	•	•	<ul style="list-style-type: none"> <li>• recognise that light appears to travel in straight lines;</li> <li>• use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye;</li> <li>• explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes;</li> <li>• use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> </ul>
	Year 3 Skills	Year 4 Skills	Year 5 Skills	Year 6 Skills
	<ul style="list-style-type: none"> <li>○ asking relevant questions and using different types of scientific enquiries to answer them;</li> <li>○ setting up simple practical enquiries, comparative and fair tests;</li> <li>○ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers;</li> <li>○ gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;</li> <li>○ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables;</li> <li>○ reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and</li> </ul>	○	○	<ul style="list-style-type: none"> <li>○ planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary;</li> <li>○ taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate;</li> <li>○ recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs;</li> <li>○ using test results to make predictions to set up further comparative and fair tests;</li> <li>○ reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other</li> </ul>

	conclusions; <ul style="list-style-type: none"> <li>○ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;</li> <li>○ identifying differences, similarities or changes related to simple scientific ideas and processes;</li> <li>○ using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>			presentations; <ul style="list-style-type: none"> <li>○ identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>
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Subject Content	Knowledge and Skills			
<b>Rocks</b>	Year 3 Knowledge	Year 4 Knowledge	Year 5 Knowledge	Year 6 Knowledge
	<ul style="list-style-type: none"> <li>• compare and group together different kinds of rocks on the basis of their appearance and simple physical properties;</li> <li>• describe in simple terms how fossils are formed when things that have lived are trapped within rock;</li> <li>• recognise that soils are made from rocks and organic matter.</li> <li>• To understand the life of Mary Leakey and her work about fossils.</li> </ul>	•	•	•
	Year 3 Skills	Year 4 Skills	Year 5 Skills	Year 6 Skills
	<ul style="list-style-type: none"> <li>○ asking relevant questions and using different types of scientific enquiries to answer them;</li> <li>○ setting up simple practical enquiries, comparative and fair tests;</li> <li>○ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers;</li> <li>○ gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;</li> <li>○ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables;</li> <li>○ reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions;</li> </ul>	○	○	○

	<ul style="list-style-type: none"> <li>○ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;</li> <li>○ identifying differences, similarities or changes related to simple scientific ideas and processes;</li> <li>○ using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>			
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Subject Content	Knowledge and Skills			
<b>Animals including humans</b>	Year 3 Knowledge	Year 4 Knowledge	Year 5 Knowledge	Year 6 Knowledge
	<ul style="list-style-type: none"> <li>• identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat;</li> <li>• identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul>	<ul style="list-style-type: none"> <li>• describe the simple functions of the basic parts of the digestive system in humans;</li> <li>• identify the different types of teeth in humans and their simple functions;</li> <li>• construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• describe the changes as humans develop to old age.</li> <li>• identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood;</li> <li>• recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function;</li> <li>• describe the ways in which nutrients and water are transported within animals, including humans.</li> <li>• To label the parts and functions of the heart.</li> <li>• To explain Dr Daniel Hale Williams' accomplishments</li> </ul>
	Year 3 Skills	Year 4 Skills	Year 5 Skills	Year 6 Skills
	<ul style="list-style-type: none"> <li>○ asking relevant questions and using different types of scientific enquiries to answer them;</li> <li>○ setting up simple practical enquiries, comparative and fair tests;</li> <li>○ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers;</li> <li>○ gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;</li> <li>○ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables;</li> <li>○ reporting on findings from enquiries,</li> </ul>	<ul style="list-style-type: none"> <li>○ asking relevant questions and using different types of scientific enquiries to answer them;</li> <li>○ setting up simple practical enquiries, comparative and fair tests;</li> <li>○ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers;</li> <li>○ gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;</li> <li>○ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables;</li> <li>○ reporting on findings from enquiries,</li> </ul>	<ul style="list-style-type: none"> <li>○</li> </ul>	<ul style="list-style-type: none"> <li>○ planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary;</li> <li>○ taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate;</li> <li>○ recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs;</li> <li>○ using test results to make predictions to set up further comparative and fair tests;</li> <li>○ reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a</li> </ul>

	<p>including oral and written explanations, displays or presentations of results and conclusions;</p> <ul style="list-style-type: none"> <li>○ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;</li> <li>○ identifying differences, similarities or changes related to simple scientific ideas and processes;</li> <li>○ using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>	<p>including oral and written explanations, displays or presentations of results and conclusions;</p> <ul style="list-style-type: none"> <li>○ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;</li> <li>○ identifying differences, similarities or changes related to simple scientific ideas and processes;</li> <li>○ using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>		<p>degree of trust in results, in oral and written forms such as displays and other presentations;</p> <ul style="list-style-type: none"> <li>○ identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>
<b>Subject Content</b>	<b>Knowledge and Skills</b>			
<b>Plants</b>	<b>Year 3 Knowledge</b>	<b>Year 4 Knowledge</b>	<b>Year 5 Knowledge</b>	<b>Year 6 Knowledge</b>
	<ul style="list-style-type: none"> <li>• identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers;</li> <li>• explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant;</li> <li>• investigate the way in which water is transported within plants;</li> <li>• explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul>	•	•	•
	<b>Year 3 Skills</b>	<b>Year 4 Skills</b>	<b>Year 5 Skills</b>	<b>Year 6 Skills</b>
	<ul style="list-style-type: none"> <li>○ asking relevant questions and using different types of scientific enquiries to answer them;</li> <li>○ setting up simple practical enquiries, comparative and fair tests;</li> <li>○ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers;</li> <li>○ gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;</li> <li>○ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables;</li> <li>○ reporting on findings from enquiries,</li> </ul>	○	○	○



	<p>including oral and written explanations, displays or presentations of results and conclusions;</p> <ul style="list-style-type: none"> <li>○ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;</li> <li>○ identifying differences, similarities or changes related to simple scientific ideas and processes;</li> <li>○ using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>			
<b>Subject Content</b>	<b>Knowledge and Skills</b>			
<b>States of Matter</b>	<b>Year 3 Knowledge</b>	<b>Year 4 Knowledge</b>	<b>Year 5 Knowledge</b>	<b>Year 6 Knowledge</b>
		<ul style="list-style-type: none"> <li>• compare and group materials together, according to whether they are solids, liquids or gases;</li> <li>• observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C);</li> <li>• identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul>	•	•
	<b>Year 3 Skills</b>	<b>Year 4 Skills</b>	<b>Year 5 Skills</b>	<b>Year 6 Skills</b>
	○	<ul style="list-style-type: none"> <li>○ asking relevant questions and using different types of scientific enquiries to answer them;</li> <li>○ setting up simple practical enquiries, comparative and fair tests;</li> <li>○ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers;</li> <li>○ gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;</li> <li>○ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables;</li> <li>○ reporting on findings from enquiries, including oral and written explanations,</li> </ul>	○	○

		<p>displays or presentations of results and conclusions;</p> <ul style="list-style-type: none"> <li>○ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;</li> <li>○ identifying differences, similarities or changes related to simple scientific ideas and processes;</li> <li>○ using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>		
<b>Subject Content</b>	<b>Knowledge and Skills</b>			
<b>Sound</b>	<b>Year 3 Knowledge</b>	<b>Year 4 Knowledge</b>	<b>Year 5 Knowledge</b>	<b>Year 6 Knowledge</b>
		<ul style="list-style-type: none"> <li>• identify how sounds are made, associating some of them with something vibrating;</li> <li>• recognise that vibrations from sounds travel through a medium to the ear;</li> <li>• find patterns between the pitch of a sound and features of the object that produced it;</li> <li>• find patterns between the volume of a sound and the strength of the vibrations that produced it;</li> <li>• recognise that sounds get fainter as the distance from the sound source increases.</li> </ul>	•	•
	<b>Year 3 Skills</b>	<b>Year 4 Skills</b>	<b>Year 5 Skills</b>	<b>Year 6 Skills</b>
	○	<ul style="list-style-type: none"> <li>○ asking relevant questions and using different types of scientific enquiries to answer them;</li> <li>○ setting up simple practical enquiries, comparative and fair tests;</li> <li>○ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers;</li> <li>○ gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;</li> <li>○ recording findings using simple scientific</li> </ul>	○	○

		<p>language, drawings, labelled diagrams, keys, bar charts, and tables;</p> <ul style="list-style-type: none"> <li>○ reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions;</li> <li>○ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;</li> <li>○ identifying differences, similarities or changes related to simple scientific ideas and processes;</li> <li>○ using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>		
<b>Electricity</b>	<b>Year 3 Knowledge</b>	<b>Year 4 Knowledge</b>	<b>Year 5 Knowledge</b>	<b>Year 6 Knowledge</b>
		<ul style="list-style-type: none"> <li>● identify common appliances that run on electricity;</li> <li>● construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers;</li> <li>● 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;</li> <li>● recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit;</li> <li>● recognise some common conductors and insulators associate metals with being good conductors.</li> </ul>	<ul style="list-style-type: none"> <li>●</li> </ul>	<ul style="list-style-type: none"> <li>● associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit;</li> <li>● 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;</li> <li>● use recognised symbols when representing a simple circuit in a diagram.</li> <li>● explain how Steve Jobs used electronics to design computers.</li> <li>● answer questions about Steve Jobs' life and work.</li> </ul>
	<b>Year 3 Skills</b>	<b>Year 4 Skills</b>	<b>Year 5 Skills</b>	<b>Year 6 Skills</b>
	<ul style="list-style-type: none"> <li>○ asking relevant questions and using different types of scientific enquiries to answer them;</li> <li>○ setting up simple practical enquiries, comparative and fair tests;</li> <li>○ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers;</li> <li>○ gathering, recording, classifying and</li> </ul>	<ul style="list-style-type: none"> <li>○</li> </ul>	<ul style="list-style-type: none"> <li>○ planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary;</li> <li>○ taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate;</li> <li>○ recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs;</li> </ul>	

		<p>presenting data in a variety of ways to help in answering questions;</p> <ul style="list-style-type: none"> <li>○ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables;</li> <li>○ reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions;</li> <li>○ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;</li> <li>○ identifying differences, similarities or changes related to simple scientific ideas and processes;</li> <li>○ using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>		<ul style="list-style-type: none"> <li>○ using test results to make predictions to set up further comparative and fair tests;</li> <li>○ reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations;</li> <li>○ identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>
<b>Living things and their habitats</b>	<b>Year 3 Knowledge</b>	<b>Year 4 Knowledge</b>	<b>Year 5 Knowledge</b>	<b>Year 6 Knowledge</b>
		<ul style="list-style-type: none"> <li>• recognise that living things can be grouped in a variety of ways;</li> <li>• explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment;</li> <li>• recognise that environments can change and that this can sometimes pose dangers to living things.</li> </ul>	•	<ul style="list-style-type: none"> <li>• describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird;</li> <li>• describe the life process of reproduction in some plants and animals.</li> </ul>
	<b>Year 3 Skills</b>	<b>Year 4 Skills</b>	<b>Year 5 Skills</b>	<b>Year 6 Skills</b>
	○	<ul style="list-style-type: none"> <li>○ asking relevant questions and using different types of scientific enquiries to answer them;</li> <li>○ setting up simple practical enquiries, comparative and fair tests;</li> <li>○ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers;</li> <li>○ gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;</li> <li>○ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables;</li> <li>○ reporting on findings from enquiries,</li> </ul>	○	<ul style="list-style-type: none"> <li>○ planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary;</li> <li>○ taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate;</li> <li>○ recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs;</li> <li>○ using test results to make predictions to set up further comparative and fair tests;</li> <li>○ reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a</li> </ul>

		<p>including oral and written explanations, displays or presentations of results and conclusions;</p> <ul style="list-style-type: none"> <li>○ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;</li> <li>○ identifying differences, similarities or changes related to simple scientific ideas and processes;</li> <li>○ using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>		<p>degree of trust in results, in oral and written forms such as displays and other presentations;</p> <ul style="list-style-type: none"> <li>○ identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>
<b>Evolution and Inheritance</b>	<b>Year 3 Knowledge</b>	<b>Year 4 Knowledge</b>	<b>Year 5 Knowledge</b>	<b>Year 6 Knowledge</b>
		•	<ul style="list-style-type: none"> <li>• recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago;</li> <li>• recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents;</li> <li>• identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul>	•
	<b>Year 3 Skills</b>	<b>Year 4 Skills</b>	<b>Year 5 Skills</b>	<b>Year 6 Skills</b>
	○	○	<ul style="list-style-type: none"> <li>○ planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary;</li> <li>○ taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate;</li> <li>○ recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs;</li> <li>○ using test results to make predictions to set up further comparative and fair tests;</li> <li>○ reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations;</li> </ul>	○

			<ul style="list-style-type: none"> <li>○ identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>	
Earth and Space	<b>Year 3 Knowledge</b>	<b>Year 4 Knowledge</b>	<b>Year 5 Knowledge</b>	<b>Year 6 Knowledge</b>
		•	<ul style="list-style-type: none"> <li>• describe the movement of the Earth and other planets relative to the sun in the solar system;</li> <li>• describe the movement of the moon relative to the Earth;</li> <li>• describe the sun, Earth and moon as approximately spherical bodies;</li> <li>• use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</li> <li>• Understand Stephen Hawking's theories about black holes and report my findings.</li> </ul>	•
	<b>Year 3 Skills</b>	<b>Year 4 Skills</b>	<b>Year 5 Skills</b>	<b>Year 6 Skills</b>
	○	○	<ul style="list-style-type: none"> <li>○ planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary;</li> <li>○ taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate;</li> <li>○ recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs;</li> <li>○ using test results to make predictions to set up further comparative and fair tests;</li> <li>○ reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations;</li> <li>○ identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>	○
Properties and Changes of Materials	<b>Year 3 Knowledge</b>	<b>Year 4 Knowledge</b>	<b>Year 5 Knowledge</b>	<b>Year 6 Knowledge</b>
		•	<ul style="list-style-type: none"> <li>• compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets;</li> </ul>	•

			<ul style="list-style-type: none"> <li>• know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution;</li> <li>• use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating;</li> <li>• give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic;</li> <li>• demonstrate that dissolving, mixing and changes of state are reversible changes;</li> <li>• explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.</li> </ul>	
	<b>Year 3 Skills</b>	<b>Year 4 Skills</b>	<b>Year 5 Skills</b>	<b>Year 6 Skills</b>
	○	○	<ul style="list-style-type: none"> <li>○ planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary;</li> <li>○ taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate;</li> <li>○ recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs;</li> <li>○ using test results to make predictions to set up further comparative and fair tests;</li> <li>○ reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations;</li> <li>○ identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>	○

## Progression - Vocabulary

Subject Content	Vocabulary			
	Year 3	Year 4	Year 5	Year 6
	<ul style="list-style-type: none"> <li>• forces, friction, surface</li> <li>• magnet, magnetic, magnetic field, poles, repel, attract</li> <li>• light, light source, dark, reflection, reflect, reflective, ray</li> <li>• pupil, retina, shadow, opaque, translucent, transparent</li> <li>• igneous rock, sedimentary rock, metamorphic rock, magma, lava, sediment, permeable, impermeable, fossilisation, palaeontology, erosion</li> <li>• healthy, nutrients, energy, saturated fats, unsaturated fats</li> <li>• vertebrate, invertebrate, muscles, tendons, joints</li> <li>• roots, stem, leaves, flowers, fertilisation, petal, stamen, carpel, sepal, pollination, pollinator, germination, seed dispersal</li> </ul>	<ul style="list-style-type: none"> <li>• digest, oesophagus, stomach, small intestine, large intestine, stomach</li> <li>• herbivore, omnivore, carnivore, producer, predator, prey</li> <li>• states of matter, solids, liquids, gases, water vapour, melt, freeze, evaporate, condense, precipitation</li> <li>• vibration, sound wave, volume, amplitude, pitch, ear, particles, distance, sound proof, absorb sound, vacuum, eardrum</li> <li>• electricity, generate, renewable, non-renewable, appliances, battery, circuit</li> <li>• organisms, life processes, sensitivity, reproduction, excretion, nutrition, habitat, environment, endangered species, extinct</li> <li>• classification, vertebrates, invertebrates, specimen, characteristics</li> </ul>	<ul style="list-style-type: none"> <li>• forces, gravity, earth's gravitational pull, weight, mass</li> <li>• friction, air resistance, water resistance, buoyancy, streamlined, mechanism, upthrust,</li> <li>• offspring, inheritance, variations, characteristics, adaptation, habitat, environment</li> <li>• evolution, natural selection, fossil, adapted traits, inherited traits</li> <li>• sun, star, moon, planet, sphere, spherical bodies, satellite</li> <li>• orbit, rotate, axis, geocentric model, heliocentric model, astronomer</li> <li>• materials, solids, liquids, gases, melting, freezing, evaporating, condensing</li> <li>• conductor, conductor, transparency</li> </ul>	<ul style="list-style-type: none"> <li>• light, light source, reflection, incident ray, reflected ray, the law of reflection</li> <li>• refraction, visible spectrum, prism, shadow, transparent, translucent, opaque</li> <li>• circuit, symbol, cell, battery, current, amp, voltage, resistance, electrons</li> <li>• characteristics, classify, taxonomist, key</li> <li>• bacteria, microorganism, microscope, species</li> <li>• circulatory system, heart, blood vessels, oxygenated blood, deoxygenated blood</li> <li>• drug, alcohol, nutrients</li> </ul>

## Progression - Curriculum Links

Subject Content	Curriculum Links			
	Year 3	Year 4	Year 5	Year 6
Computing	<ul style="list-style-type: none"> <li>• collecting, analysing, evaluating and presenting data and information</li> </ul>	<ul style="list-style-type: none"> <li>➤ collecting, analysing, evaluating and presenting data and information</li> </ul>	<ul style="list-style-type: none"> <li>➤ collecting, analysing, evaluating and presenting data and information</li> <li>➤ Data Logging - Use data gathered over time to find information. Draw conclusions from the data.</li> </ul>	<ul style="list-style-type: none"> <li>➤ collecting, analysing, evaluating and presenting data and information</li> </ul>
Design Technology	<ul style="list-style-type: none"> <li>○ Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</li> <li>○ Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>○ Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> <li>○ Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> <li>○ Understand and apply the principles of a healthy and varied diet</li> </ul>	<ul style="list-style-type: none"> <li>○ Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</li> <li>○ Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>○ Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> <li>○ Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> <li>○ Understand and apply the principles of a healthy and varied diet</li> </ul>	<ul style="list-style-type: none"> <li>○ Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</li> <li>○ Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>○ Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> <li>○ Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> <li>○ Understand and apply the principles of a healthy and varied diet</li> </ul>	<ul style="list-style-type: none"> <li>○ Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</li> <li>○ Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>○ Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> <li>○ Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> <li>○ Understand and apply the principles of a healthy and varied diet</li> </ul>



English	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
	<ul style="list-style-type: none"> <li>➤ To demonstrate an increasing understanding of purpose and audience by discussing writing similar to that which they are planning to write in order to understand and learn from its structure, vocabulary and grammar.</li> <li>➤ To begin to use the structure of a wider range of text types (including the use of simple layout devices in non-fiction).</li> </ul>	<ul style="list-style-type: none"> <li>➤ To demonstrate an increasing understanding of purpose and audience by discussing writing similar to that which they are planning to write in order to understand and learn from its structure, vocabulary and grammar.</li> <li>➤ To begin to use the structure of a wider range of text types (including the use of simple layout devices in non-fiction).</li> </ul>	<ul style="list-style-type: none"> <li>➤ To consistently produce sustained and accurate writing from different narrative and non-fiction genres with appropriate structure, organisation and layout devices for a range of audiences and purposes.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To write effectively for a range of purposes and audiences, selecting the appropriate form and drawing independently on what they have read as models for their own writing (including literary language, characterisation, structure, etc.).</li> <li>➤ To distinguish between the language of speech and writing and to choose the appropriate level of formality.</li> <li>➤ To select vocabulary and grammatical structures that reflect what the writing requires (e.g. using contracted forms in dialogues in narrative; using passive verbs to affect how information is presented; using modal verbs to suggest degrees of possibility).</li> </ul>
Geography	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
	<ul style="list-style-type: none"> <li>➤ Collect, analyse and communicate with a range of data gathered through experiences of fieldwork that deepen their understanding of geographical processes</li> </ul>	<ul style="list-style-type: none"> <li>➤ Collect, analyse and communicate with a range of data gathered through experiences of fieldwork that deepen their understanding of geographical processes</li> </ul>	<ul style="list-style-type: none"> <li>➤ Collect, analyse and communicate with a range of data gathered through experiences of fieldwork that deepen their understanding of geographical processes</li> </ul>	<ul style="list-style-type: none"> <li>➤ Collect, analyse and communicate with a range of data gathered through experiences of fieldwork that deepen their understanding of geographical processes</li> </ul>
History	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
	<p><a href="#">Feeding Stonehenge (diet)</a> Working with Rocks</p> <ul style="list-style-type: none"> <li>➤ Learn about famous scientists and inventors</li> </ul>	<ul style="list-style-type: none"> <li>➤ Learn about famous scientists and inventors</li> </ul>	<ul style="list-style-type: none"> <li>➤ Learn about famous scientists and inventors</li> </ul>	<ul style="list-style-type: none"> <li>➤ Learn about famous scientists and inventors</li> </ul>
Mathematics	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
	<ul style="list-style-type: none"> <li>• Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>• Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</li> <li>• Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>• Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat</li> <li>• Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials</li> </ul>	<ul style="list-style-type: none"> <li>• Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>• Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</li> <li>• Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>• measure or research the temperature at which this happens in degrees Celsius (°C)</li> <li>• Recognise that sounds get fainter as the distance from the sound source increases.</li> </ul>	<ul style="list-style-type: none"> <li>• Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>• Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>• Using test results to make predictions to set up further comparative and fair tests</li> <li>• Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> </ul>	<ul style="list-style-type: none"> <li>• Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>• Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>• Using test results to make predictions to set up further comparative and fair tests</li> </ul>
Music	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
	<ul style="list-style-type: none"> <li>➤</li> </ul>	<ul style="list-style-type: none"> <li>➤ Understand and explore how music is created, produced and communicated, including through the inter-related dimensions: pitch, duration, dynamics, tempo, timbre, texture, structure and appropriate musical notations.</li> </ul>		

