

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	<p><b>Rocks and soils</b></p> <ul style="list-style-type: none"> <li>Compare and group rocks based on appearance and simple physical properties</li> <li>Know that solids are made from rocks and organic matter</li> <li>Set up simple fair tests</li> <li>Collect and present data from scientific experiments</li> <li>Uses results from experiments to draw simple conclusions</li> </ul>	<p><b>Plants and animals - Skeletons</b></p> <p>Explain the functions of skeletons and muscles in humans and animals</p>	<p><b>Forces and magnets</b></p> <ul style="list-style-type: none"> <li>Notice that some forces need contact between 2 objects but magnetic forces can act at a distance</li> <li>Know that magnets can attract or repel each other and attract some materials</li> <li>Group materials according to their magnetic properties</li> <li>Describe magnets having north and south poles</li> <li>Set up simple fair tests</li> <li>Collect and present data from scientific experiments</li> <li>Uses results from experiments to draw simple conclusions or suggest improvements</li> <li>Present findings using tables, graphs and charts appropriately</li> <li>Take accurate measurements using a range of scientific apparatus</li> <li>Identify differences, similarities or changes linked to simple scientific ideas and processes</li> <li>Use straightforward scientific evidence in support of ideas</li> </ul>	<p><b>Light</b></p> <ul style="list-style-type: none"> <li>Know that you need light to see things and that dark is the absence of light</li> <li>Notice that you need light to see things and that dark is an absence of light</li> <li>Know how shadows are formed</li> <li>Find patterns in the way shadows change</li> <li>Set up simple fair tests</li> <li>Collect and present data from scientific experiments</li> <li>Present findings using tables, graphs and charts appropriately</li> <li>Take accurate measurements using a range of scientific apparatus</li> <li>Uses results from experiments to draw simple conclusions or suggest improvements</li> <li>Identify differences, similarities or changes linked to simple scientific ideas and processes</li> <li>Use straightforward scientific evidence in support of ideas</li> </ul>	<p><b>States of matter</b></p> <ul style="list-style-type: none"> <li>Compare and group materials together as solids, liquids and gases</li> <li>Know that some materials change state when they are heated or cooled</li> <li>Explain the main stages of the water cycle</li> <li>Know that temperature affects the rate of evaporation</li> <li>Set up simple fair test</li> <li>Collect and present data from scientific experiments</li> <li>Uses results from experiments to draw simple conclusions or suggest improvements</li> <li>Take accurate measurements using a range of scientific apparatus</li> <li>Present findings using tables, graphs and charts appropriately</li> <li>Identify differences, similarities or changes linked to simple scientific ideas and processes</li> <li>Use straightforward scientific evidence in support of ideas</li> </ul>	<p><b>Plants and animals - Plants and how they make their food</b></p> <ul style="list-style-type: none"> <li>Describe the main requirements of plants for light and growth</li> <li>Describe the functions of different parts of flowering plants</li> </ul>
Year 4	<p><b>Electricity</b></p> <ul style="list-style-type: none"> <li>Construct a simple series electrical circuit, identifying and naming its basic parts</li> <li>Know that a lamp in a circuit can only be on if the switch is closed</li> <li>Know some common conductors and insulators, and know metals make good conductors</li> <li>Collect and present data from scientific experiments</li> <li>Uses results from experiments to draw simple conclusions or suggest improvements</li> </ul>	<p><b>Plants and animals - Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>Use classification keys to identify plants or animals in their local or wider environment</li> <li>Know that environments can change and this sometimes can pose dangers to living things</li> <li>Construct and interpret a variety of food chains, identifying producers, predator and prey</li> </ul>	<p><b>Plants and animals - Teeth and digestive system</b></p> <ul style="list-style-type: none"> <li>Describe the simple function of basic parts of the digestive system in humans</li> <li>Know the different types of teeth, and their functions, in humans</li> <li>Uses results from experiments to draw simple conclusions or suggest improvements</li> <li>Identify differences, similarities or changes linked to simple scientific ideas and processes</li> <li>Use straightforward scientific evidence in support of ideas</li> </ul>	<p><b>Plants and animals - Life cycle</b></p> <ul style="list-style-type: none"> <li>Describe the differences in life cycle of a Mammal, an Amphibian, and Insect and a Bird</li> <li>Describe the life process of reproduction in some plants and animals</li> <li>Describe changes of humans as they grow old</li> <li>Plan scientific investigation</li> </ul>	<p><b>Mixtures and separating them</b></p> <ul style="list-style-type: none"> <li>Compare and group every day materials based on their properties</li> <li>Give reasons, based on comparative and fair test evidence, for particular uses of everyday materials</li> <li>Know how a (Liquid) solution can be created and describe how this change can be reversed</li> <li>Demonstrate that dissolving, mixing and changes of state are all reversible changes</li> <li>Explain how mixtures can be separated through filtering, sieving and evaporation</li> <li>Plan scientific investigation, including controlling variables where appropriate</li> <li>Can use scientific equipment to take accurate measurement (repeating when appropriate)</li> <li>Record data using diagrams, keys, tables and a range of graphs</li> <li>Identify differences, similarities or changes linked to simple scientific ideas and processes</li> <li>Repeat conclusions and explanations (written or oral) from scientific investigations</li> </ul>	
Year 5	<p><b>Winchester Science Centre - Climate tracker project</b></p> <p>Revision and pre-teach of the following unit KPIs:</p> <ul style="list-style-type: none"> <li>Making new substances</li> </ul>	<p><b>Fossils</b></p> <ul style="list-style-type: none"> <li>Describe in simple terms how fossils are formed</li> </ul>	<p><b>Making new substances</b></p> <ul style="list-style-type: none"> <li>Explain that some changes form new materials and that these changes are usually irreversible</li> </ul>	<p><b>Forces</b></p> <ul style="list-style-type: none"> <li>Identify effects of air resistance, water resistance and friction between moving surfaces</li> </ul>	<p><b>Earth and Space</b></p> <ul style="list-style-type: none"> <li>Describe the movement of the earth, and other planets, relative to the sun</li> </ul>	<p><b>Sound</b></p> <ul style="list-style-type: none"> <li>Recognise that vibrations from sound travel through the medium of the ear</li> </ul>



	<ul style="list-style-type: none"> <li>- Forces</li> <li>- Light</li> <li>• Plan scientific investigation , including controlling variables where appropriate</li> <li>• Can use scientific equipment to take accurate measurement (repeating when appropriate)</li> <li>• Record data using diagrams, keys, tables and a range of graphs</li> <li>• Identify differences, similarities or changes linked to simple scientific ideas and processes</li> <li>• Repeat conclusions and explanations (written or oral) from scientific investigations</li> </ul>		<ul style="list-style-type: none"> <li>• Plan scientific investigation , including controlling variables where appropriate</li> <li>• Can use scientific equipment to take accurate measurement (repeating when appropriate)</li> <li>• Record data using diagrams, keys, tables and a range of graphs</li> <li>• Identify differences, similarities or changes linked to simple scientific ideas and processes</li> <li>• Repeat conclusions and explanations (written or oral) from scientific investigations</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise that some of mechanisms (L, P &amp; G) allow a smaller force to have a greater effect</li> <li>• Plan scientific investigation , including controlling variables where appropriate</li> <li>• Can use scientific equipment to take accurate measurement (repeating when appropriate)</li> </ul>	<ul style="list-style-type: none"> <li>• Describe the movement of the moon, relative to the earth</li> <li>• Use an ideas of the Earth's rotation to explain day and night and the apparent movement of the sun</li> <li>• Explain that gravity causes unsupported objects to fall towards the Earth</li> <li>• Can use scientific equipment to take accurate measurement (repeating when appropriate)</li> <li>• Record data using diagrams, keys, tables and a range of graphs</li> <li>• Repeat conclusions and explanations (written or oral) from scientific investigations</li> </ul>	<ul style="list-style-type: none"> <li>• Can find patterns between the pitch of sound and the features of the objects that produce it</li> <li>• Can find patterns between the volume of a sound and the features of the object that produced it</li> <li>• Know that sounds get fainter as the distance from the sound increases</li> <li>• Set up simple fair test</li> <li>• Collect and present data from scientific experiments</li> <li>• Uses results from experiments to draw simple conclusions or suggest improvements</li> </ul>
<p>Year 6</p>	<p><b>Light</b></p> <ul style="list-style-type: none"> <li>• Recognise that light appears 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 a light source to our eyes or from a light source to objects and the to our eyes</li> <li>• Use the idea that light travels in straight lines to explain why shadows have the same shape as the object that cast them</li> <li>• Plan scientific investigation , including controlling variable where appropriate</li> <li>• Taking measurement , using a range of scientific equipment, with increasing accuracy and precision</li> <li>• Using test results to make predictions to set up further comparative and fair tests</li> <li>• Recording data and results of increasing complexity using scientific diagrams and tables, classification keys, tables, and bar and line graphs</li> <li>• Identify differences, similarities or changes linked to simple scientific ideas and processes</li> <li>• Report conclusions and explanations (written or oral) from scientific investigations</li> </ul>	<p><b>Electricity</b></p> <ul style="list-style-type: none"> <li>• Associate the brightness of a lamp or the volume of a buzzer with the number of voltage of cells used in a circuit</li> <li>• Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of the buzzers and on/off position of switches</li> <li>• Use recognised symbols when representing a simple circuit</li> <li>• Plan scientific investigation , including controlling variable where appropriate</li> <li>• Taking measurement , using a range of scientific equipment, with increasing accuracy and precision</li> <li>• Using test results to make predictions to set up further comparative and fair tests</li> <li>• Recording data and results of increasing complexity using scientific diagrams and tables, classification keys, tables, and bar and line graphs</li> <li>• Identify differences, similarities or changes linked to simple scientific ideas and processes</li> <li>• Report conclusions and explanations (written or oral) from scientific investigations</li> </ul>	<p><b>Evolution and inheritance</b></p> <ul style="list-style-type: none"> <li>• Recognise that living things have changed over time and that fossil 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>	<p><b>All living things (Circulation)</b></p> <ul style="list-style-type: none"> <li>• Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals</li> <li>• Give reasons for classifying plants and animals based on specific characteristics</li> <li>• Identify and name the main parts of the human circulatory system, and explain 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>• Plan scientific investigation , including controlling variable where appropriate</li> </ul>		

Year 3	Year 4	Year 5	Year 6
<p><b>Set up simple fair tests</b> Verbally suggest ways to test the scientific question given and the type of investigation needed. Begin to verbally discuss what must change and what must remain the same in an investigation. Begin to discuss and understand why a simple fair test is needed.</p>	<p><b>Set up simple fair tests</b> Develop their confidence in identifying and making some decisions about which type of investigation is most suited to answer a scientific question. Plan by discussing and recording the parts of an investigation that remain the same and those that change. Understand why and when a simple fair test is needed.</p>	<p><b>Plan scientific investigation , including controlling variables where appropriate</b> Begin to use their previous experiences of the world around them to explore ideas and raise scientific questions. Begin to select and plan the most appropriate type of investigation. Begin to recognise and record when and how to set up comparative and fair tests. Begin to identify the variables that must change or remain the same by explaining why.</p>	<p><b>Plan scientific investigation , including controlling variable where appropriate</b> Confidently use their previous experiences of the world around them to explore ideas and raise scientific questions. Develop their ability to select and plan the most appropriate type of investigation. Develop their ability to recognise and record when and how to set up comparative and fair tests. Independently identify the variables that must change or remain the same by explaining why and how this would impact the investigation.</p>
<p><b>Collect and present data from scientific experiments</b> Begin to verbally discuss ways for grouping, sorting and classifying. Begin to discuss and record a simple key if necessary Begin to discuss verbally any observations that need to be made, how long to observe for and any equipment they may need for this. Begin to look for naturally occurring patterns and decide what data to collect to identify them.</p>	<p><b>Collect and present data from scientific experiments</b> Develop their ability to verbally discuss ways for grouping, sorting and classifying. Develop their ability to discuss and record a simple key if necessary Develop their ability to discuss verbally any observations that need to be made, how long to observe for and any equipment they may need for this.</p>	<p><b>Can use scientific equipment to take accurate measurement (repeating when appropriate)</b> Develop their independence in making decisions about what observations to make, what measurements to use, how long to make them for and whether they need repeating Develop their independence in choosing the most appropriate equipment and begin to explain how to use it accurately. Begins to question when repeated readings are necessary.</p>	<p><b>Taking measurement , using a range of scientific equipment, with increasing accuracy and precision</b> Independently make decisions about what observations to make, what measurements to use, how long to make them for and whether they need repeating Independently choose the most appropriate equipment and explain how to use it accurately. Uses a wide range of scientific equipment accurately and precisely. Understand when to take repeated readings</p>
<p><b>Uses results from experiments to draw simple conclusions or suggest improvements</b> Begin to verbally draw simple conclusions from findings. Are able to suggest basic improvements to their investigation. Begin to raise further questions based on results.</p>	<p><b>Uses results from experiments to draw simple conclusions or suggest improvements</b> Verbally draw simple conclusions and record key ideas. Can suggest improvements to their investigations including some predictions of results. Creates further scientific enquiry based on results.</p>	<p><b>Record data using diagrams, keys, tables and a range of graphs</b> Further develop their ability to develop and record keys and other forms of information to identify, classify and describe living things and materials. Begins to decide on how to record data from a choice of familiar approaches.</p>	<p><b>Using test results to make predictions to set up further comparative and fair tests</b> Use results to identify when further test and observations might be needed.</p>
<p><b>Take accurate measurements using a range of scientific apparatus</b> Develop their ability to take accurate measurements using standards units in a range of equipment. Develop their ability to make careful observations.</p>	<p><b>Take accurate measurements using a range of scientific apparatus</b> Independently makes systematic and careful observations. Able to independently take accurate measurements using standard units on a range of relevant equipment.</p>	<p><b>Identify differences, similarities or changes linked to simple scientific ideas and processes</b> Begin to look for different causal relationships in their data. Begin to identify patterns that might be found in the natural environment. Begin to use their scientific understanding to explore changes that occur in investigations.</p>	<p><b>Recording data and results of increasing complexity using scientific diagrams and tables, classification keys, tables, and bar and line graphs</b> Securely record keys and other forms of information to identify, classify and describe living things and materials by identifying patterns that might be found in their natural environment. Securely chooses appropriate way to record data from a choice of familiar approaches. Uses appropriate scientific diagrams and labels, classification keys, tables and a variety of graphs to record results.</p>
<p><b>Present findings using tables, graphs and charts appropriately</b> Begin to record findings using simple scientific language using drawings, labelled diagrams, keys, bar charts and tables</p>	<p><b>Present findings using tables, graphs and charts appropriately</b> Records findings using simple scientific language using drawing, labelled diagrams, keys, bar charts and tables. Begins to make some decisions on appropriate ways to record findings. Classifies and presents data in a variety of ways to help answer scientific questions.</p>	<p><b>Repeat conclusions and explanations (written or oral) from scientific investigations</b> Develop their ability to use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.</p>	<p><b>Identify differences, similarities or changes linked to simple scientific ideas and processes</b> Develop their independence to look for different causal relationships in their data. Can identify patterns that might be found in the natural environment. Securely use their scientific understanding to explore changes that occur in investigations.</p>
<p><b>Identify differences, similarities or changes linked to simple scientific ideas and processes</b> Begin to use taught scientific knowledge to explain their results and findings.</p>	<p><b>Identify differences, similarities or changes linked to simple scientific ideas and processes</b> Develops their ability to apply scientific knowledge taught to explain results and findings.</p>		<p><b>Report conclusions and explanations (written or oral) from scientific investigations</b> Confidently use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. Report findings from enquiries including the degree of trust they hold in their results.</p>
<p><b>Use straightforward scientific evidence in support of ideas</b> Begin to read and spell scientific vocabulary correctly</p>	<p><b>Use straightforward scientific evidence in support of ideas</b> Confidently read and spell scientific vocabulary correctly</p>		<p><b>Identify scientific evidence that has been used to support ideas</b> Can recognise when secondary sources will be most useful to research their idea.</p>



## Science MTP

Begin to draw simple conclusions and apply some simple scientific language to talk about what they have found out.	Draw simple conclusions and apply some scientific language first to talk about and later write about what they have found out. Begins to find things out using secondary sources of information.		Begins to separate opinion from fact when researching their ideas. Begin to identify evidence that refutes or supports their ideas, Understand how scientific ideas have developed over time.
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