



**The Science Curriculum at Crowthorne – Key Stage 1 Working scientifically**

During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

NC Programme of Study	EYFS	Progression of enquiry skills KS1	Reception	Year 1	Year 2
<ul style="list-style-type: none"> <li>asking simple questions and recognising that they can be answered in different ways</li> </ul>	<p>Show curiosity about objects, events and people (Playing and Exploring)</p> <p>Questions why things happen (Speaking: 30-50 months)</p> <p>Take a risk, engage in new experiences and learn by trial and error (Playing and exploring)</p>	<p>Explore the world around them and raise their own simple questions</p> <p>Experience different types of science enquiries, including practical activities</p> <p>Begin to recognise different ways in which they might answer scientific questions.</p> <p>Write opportunities about where children are exploring and encouraged to ask questions.</p>	<p>Children have opportunities to ask questions and make comments about the world around them.</p> <p>At the beginning of most topics, children have an opportunity to ask questions about what they would like to find out.</p> <p>Children observe how these questions can be answered in different ways, for example: first hand observations, information books or the internet/videos.</p> <p>In the summer term this is supported with a 'Wonder Box', where children record their own questions which are revisited as a class to find out the answers</p> <p>The topics are supported with real life resources, small world play, construction toys and role play activities to facilitate and encourage children to play, explore and make links in their learning.</p> <p>Questions are modelled to them through our Understanding of the World curriculum.</p>	<p>Animals: Classification (AU1) Using our Senses (AU2) Materials: labelling and classifying, comparing and grouping (SPR) Seasonal Changes (SUM1) Plants: Labelling and Classifying (SUM2)</p> <p>Ask and answer questions about animals and recognise how we can answer them e.g. Are all birds the same? What makes an animal a mammal? (AUT1)</p> <p>Ask and answer questions about our senses e.g. how do our ears hear sounds? How do our eyes use light to see? (AUT2)</p> <p>Ask and answer questions about the properties of everyday materials and recognise how we can answer them e.g. Which material would be most suitable for an umbrella? Is all paper the same? Why does a material sometimes float and sometimes sink? (SPR)</p> <p>Ask and answer questions about the changing seasons e.g. what is the weather like in different seasons? If I looked out the window in different seasons, what would be different? (SUM1)</p> <p>Ask and answer questions about plants e.g. which plants grow in our local area? Are all plants the same? (SUM2)</p>	<p>Taking Care of Ourselves (AUT1) Materials – Changing shapes (AUT2) Animals and Habitats (SPR1) Materials – Properties and Uses (SPR2) Plants – (SUM1) Growing up (SUM2)</p> <p><b>Taking Care of Ourselves</b> Children ask and answer questions about what happens to our bodies when we exercise. (AUT1)</p> <p><b>Materials – Changing shapes</b> Children plan how to find out whether the shapes of solid objects made from different materials can be changed. (AUT2) Children plan an experiment to test which type of elastic would make the best catapult. (AUT2)</p> <p><b>Materials – Properties and Uses</b> Children ask and answer questions about how far their rocket mice might travel and whether different bottles make a difference to the distance. (SPR2)</p> <p><b>Plants</b> Children ask questions about seeds and select one to plan a growing investigation. (SUM1) Children devise an experiment to find out what mature plants need in order to stay healthy. (SUM2)</p>
<ul style="list-style-type: none"> <li>observing closely, using simple equipment</li> </ul>		<p>Observe closely using simple equipment with help, observe changes over time</p>	<p>Using magnifying glasses to observe the life cycle of a butterfly and a frog.</p>	<p>Use magnifying glasses to look closely at a real example of a fish, including their scales and gills (AUT1)</p> <p>Look closely at the structure of an eye and observe pupil dilation (AUT2)</p>	<p><b>Taking Care of Ourselves</b> Notice what happens to different parts of their body after vigorous exercise. (AUT1)</p> <p><b>Materials – Changing shapes</b></p>

				<p>Look closely at everyday materials to identify their properties (SPR)</p> <p>Visit the school grounds or locality at different seasons of the year, making observations of the changing natural world as they carry out seasonal 'scavenger hunts'. (This lesson is carried out in Autumn, Spring and Summer terms)</p> <p>Look closely at a variety of familiar wild and garden and the structure of a plant (SUM2)</p>	<p>Children observe what happens when solid objects made from different materials are squashed, bent, twisted and stretched. (AUT2)</p> <p>Children use a ruler to measure how far different types of elastic will stretch. (AU2)</p> <p><b>Animals and Habitats</b> Children notice and record the living things which make up different habitats around the school. (SPR1)</p> <p><b>Materials – Properties and Uses</b> Children observe what happens when hot water is poured onto teabags made from different materials. (SPR2)</p> <p><b>Plants</b> Children make detailed observations of pea seeds over a number of weeks and record these in a seed diary. (SUM1)</p> <p>Children use a ruler to measure the length of the roots and shoots as their peas germinate. (SUM1)</p> <p><b>Growing up</b> Children use a tape measure to measure head sizes of different aged children. (SUM2)</p>
<ul style="list-style-type: none"> <li>performing simple tests</li> </ul>	Find ways to solve problems/ find new ways to do things/ test their ideas (Creating and Thinking Critically)	Carry out simple tests	<p><b>Objects and Materials</b> Floating and Sinking – Children predict which objects will float or sink, they test their ideas and record their results. (TAPS)</p> <p>Children test the effects of making materials hotter or colder (Freezing &amp; melting) TAPS Frozen balloons &amp; What Melts? (SS)</p> <p>Children test different materials to sort by waterproofness. They use and test a chosen material to build a shelter. (Incy Wincy Shelter TAPS)</p>	<p>Perform a simple test to investigate how many layers of material it will take to stop them feeling a pea through those layers. (AUT2)</p> <p>Perform a simple test to investigate the waterproof properties of different materials. (SPR)</p> <p>Perform simple tests to investigate if all paper is the same (SPR)</p> <p>Perform a simple test to investigate why foil can sometimes sink and sometimes float (SPR)</p>	<p><b>Materials – Changing shapes</b> Children test objects according to whether they can be squashed, bent, twisted or stretched. (AUT2)</p> <p>Children test different types of elastic to find out which is the stretchiest. (AU2)</p> <p><b>Materials – Properties and Uses</b> Children devise and carry out a test to decide which material would make the best teabag. (SPR2)</p> <p>Children organise their own test to see whose rocket mouse will travel the furthest. (SPR2)</p> <p><b>Plants</b> Children devise and carry out a test to determine what mature plants need in order to stay healthy. (SUM1)</p> <p><b>Humans – Growing up</b> Children carry out a pattern-seeking investigation to find out if older children have bigger heads. (SUM2)</p>
<ul style="list-style-type: none"> <li>identifying and classifying</li> </ul>		Use simple features to compare objects materials and living things and, with help, decide how to sort and group them	<p><b>Animals</b> Identify and classify a variety of animals into the following categories: Arctic Animals, Farm Animals, Jungle Animals, Sea Animals &amp; Insects</p>	Identify and classify a variety of common animals into the following categories: fish, amphibians, reptiles, birds and mammals. (AUT1)	<p><b>Taking Care of Ourselves</b> Sort foods according to their own criteria. (AUT1)</p> <p>Sort foods into different food groups. (AUT1)</p> <p><b>Materials – Changing shapes</b></p>

			<p>Minibeast Hunt – How many legs do they have? How do they move?</p> <p>Dinosaurs Compare the features of different dinosaurs and talk about their diets and classify into carnivores and herbivores.</p> <p><b>Objects and materials</b> Group together foods that melt and do not melt.</p> <p>Group objects that float or sink.</p> <p><b>Light, Space, Electricity &amp; Movement</b> Categorise toys and everyday objects that you push or pull.</p>	<p>Identify and classify animals as herbivores, carnivores and omnivores based on what they eat. (AUT1)</p> <p>Group together a variety of everyday materials on the basis of their simple physical properties (SPR)</p> <p>Classify and group flowers according to given, or their own, criteria. (SUM)</p>	<p>Children sort objects according to whether they can be squashed, bent, twisted or stretched. (AUT2)</p> <p><b>Animals and Habitats (SPR1)</b> Children play a sorting game to group plants and animals into food chains. (SPR1)</p> <p><b>Materials – Properties and Uses</b> Children identify and group objects made from wood, metal, plastic, fabric, rock and rubber. (SPR2)</p> <p><b>Plants</b> Children describe different seeds then sort them using a classification chart. (SUM1)</p>
<ul style="list-style-type: none"> <li>using their observations and ideas to suggest answers to questions</li> </ul>		<p>With guidance, they should begin to notice patterns and relationships</p> <p>Use their observations and ideas to suggest answers to questions</p> <p>Talk about what they have found out and how they found it out</p>	<p><b>Animals &amp; Plants</b> First hand observations of the life cycle of a butterfly and a frog.</p> <p>Class trip to Bucklebury Farm to observe farm animals first-hand and answer questions they may have about these animals.</p> <p><b>Objects and Materials</b> Use observations to suggest which materials would be suitable to build a shelter based on its waterproof properties.</p>	<p>Use observations to suggest which material would be most suitable for an umbrella based on its waterproof properties. (SPR)</p> <p>Use observations to suggest which type of paper would be most suitable for different uses. (SPR)</p> <p>Use observations to suggest why foil will sometimes sink or float (SPR) Consider the evidence that they have collected during a seasonal scavenger hunt, including weather, plants, animals. (SUM1)</p>	<p><b>Materials – Changing shapes</b> Children make links between the properties of different materials and which actions can be used to change their shapes. (AUT2) Children look at the data they have collected about different types of elastic and how far they stretch, and make a decision about which would be best for a catapult. (AUT2)</p> <p><b>Animals and Habitats</b> Children consider how living things are suited to different habitats. (SPR1)</p> <p><b>Materials – Properties and Uses</b> Children decide which materials are appropriate for certain objects and which are not. (SPR2) Children observe how far their rocket mice travel and decide whether different bottles make a difference to the distance. (SPR2)</p> <p><b>Plants</b> Children look at the results of tests which deprive healthy plants of soil, water warmth and light to decide what mature plants need in order to stay healthy. (SUM1)</p> <p><b>Growing up</b> Children compare the head circumferences of different aged children to find out if older children have bigger heads. (SUM2)</p>
<ul style="list-style-type: none"> <li>gathering and recording data to help in answering questions</li> </ul>	<p>Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world (The World: 30-50 months)</p>	<p>Ask people questions and use simple secondary sources to find answers</p> <p>Use simple measurements and equipment (e.g. hand lenses egg timers) to gather data</p>	<p><b>Animals and Plants</b> Take photographs of the growth and changes they observe of their cress seeds over a period of time.</p>	<p>Gather and record data in the form of a bar chart to show how many layers of different materials stop them feeling a pea. (AUT2)</p>	<p><b>Taking Care of Ourselves</b> Children use secondary sources to find out about different food groups. (AUT1)</p> <p><b>Materials – Changing shapes</b></p>

		<p>Record simple data</p> <p>With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language</p>	<p><b>Objects and Materials</b> Record observations about which objects float or sink.</p> <p>Record observations about different material's waterproof properties in order to answer which would be the most suitable for a shelter.</p> <p><b>Our Changing World</b> Season Walks – How do the seasons change? Children observe the changes and take photographs.</p>	<p>Gather data in order to answer questions about the properties and uses of everyday materials (SPR)</p> <p>Record observations about different material's waterproof properties in order to answer which would be most suitable for an umbrella (SPR)</p> <p>Collect daily records of the weather for a period of two weeks, and use their completed records to look for patterns and link these to seasonal change. (SUM1)</p>	<p>Children use a ruler to measure how far different types of elastic will stretch and use this information to help them decide which is most suitable for a catapult. (AUT2)</p> <p><b>Animals and Habitats</b> Children learn how to represent a simple food chain as a series of living things linked by arrows. (SPR1)</p> <p><b>Plants</b> Children record observations over a period of time in their seed diaries to help them answer questions about how seeds germinate. (SUM1)</p> <p><b>Growing up</b> Children record data about children's head size and age in a table. (SUM2)</p>
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