





## Progression of science

Subject content	<b>EYFS:</b> <b>Development matters: Understanding the world (the natural world)</b> <ul style="list-style-type: none"><li>Explore the natural world around them.</li><li>Describe what they see, hear and feel whilst outside.</li><li>Recognise some environments that are different to the one in which they live.</li><li>Understand the effect of changing seasons on the natural world around them.</li></ul> <b>ELG: The Natural World - Explore the natural world around them, making observations and drawing pictures of animals and plants. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</b> <u>Year 1 Pupils should be taught to:</u> Plants <ul style="list-style-type: none"><li>identify and name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen</li><li>identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers.</li></ul> Animals, including humans <ul style="list-style-type: none"><li>identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</li><li>identify and name a variety of common animals that are carnivores, herbivores and omnivores.</li><li>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds, mammals, including pets).</li><li>identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li></ul> Materials <ul style="list-style-type: none"><li>distinguish between an object and the material from which it is made.</li><li>identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.</li><li>describe the simple physical properties of everyday materials.</li><li>compare and group together a variety of everyday materials on the basis of their simple physical properties.</li></ul> Seasonal change <ul style="list-style-type: none"><li>observe changes across the four seasons</li><li>observe and describe weather associated with the seasons and how day length varies.</li></ul>	<b>Year 2 Pupils should be taught to:</b> Living things and their habitats <ul style="list-style-type: none"><li>explore and compare the differences between things that are living, dead, and things that have never been alive</li><li>identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</li><li>identify and name a variety of plants and animals in their habitats, including micro-habitats</li><li>describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</li></ul> Plants <ul style="list-style-type: none"><li>observe and describe how seeds and bulbs grow into mature plants</li><li>find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li></ul> Animals, including humans <ul style="list-style-type: none"><li>notice that animals, including humans, have offspring which grow into adults</li><li>find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li><li>describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</li></ul> Use of everyday materials <ul style="list-style-type: none"><li>identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li><li>find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li></ul> KS1 Working Scientifically: <ul style="list-style-type: none"><li>asking simple questions and recognising that they can be answered in different ways</li><li>observing closely, using simple equipment</li><li>performing simple tests</li><li>identifying and classifying</li><li>using their observations and ideas to suggest answers to questions</li><li>gathering and recording data to help in answering questions.</li></ul>		
	Substantive Knowledge			
	Materials		Humans	
	Plants		Animals/Habitats	
	Disciplinary Knowledge			
	Skills	Reception	Year 1	Year 2
	Asking questions 	To explore the natural world around them and ask questions.	To explore the world around them and ask questions using sentence stems such as how and why with support.	To explore the world around them and raise their own questions using scientific language.

<p>Setting up tests</p> 	<p>To experience different ways of finding out</p> <p>To make a suggestion about what to do.</p> <p>To experiment with given apparatus.</p>	<p>To begin to recognise questions can be answered in different ways.</p> <p>To make suggestions about what to do and what to look for.</p> <p>Carry out simple tests supported/scaffolded by adults.</p>	<p>To respond to suggestions about how to find out and communicate this to others.</p> <p>To recognise the different ways in which they might answer scientific questions.</p> <p>To plan simply what to do, what observations or measurements to take. Recognise some hazards.</p>
<p>Making predictions</p> 	<p>To make a simple statement referring to something they have already encountered.</p>	<p>To predict what might happen.</p>	<p>To sometimes predict the outcome of an investigation.</p>
<p>Observing and measuring</p> 	<p>Describe what they see, hear and feel whilst outside.</p> <p>To observe changes in something.</p> <p>To know that information can be gathered from books.</p>	<p>With help, to observe closely using simple equipment.</p> <p>To observe changes over time with adult modelling.</p> <p>To talk about results in everyday terms (e.g. this one is bigger).</p> <p>With support, to use simple equipment to gather data.</p>	<p>To observe closely using simple equipment.</p> <p>Observe changes over time.</p> <p>To measure using standard units.</p> <p>To learn how to use simple equipment (e.g. hand lenses, egg timer) to gather data.</p>
<p>Recording data</p> 	<p>To observe teacher putting results in a table.</p> <p>With help, explore the use of charts prepared by the teacher. E.g. cut and stick objects, tick or draw</p>	<p>With support, to answer questions by using secondary sources of information.</p> <p>To record results through drawing and or a simple table prepared by the teacher.</p> <p>To draw on a pictogram or other chart prepared by the teacher and create class bar charts.</p>	<p>To use secondary sources of information to answer questions.</p> <p>To present results in a simple table with headings initially provided by the teacher.</p> <p>To use pictograms to display results, draw bar charts with help.</p>
<p>Interpretating and communicating results</p> 	<p>To identify what is the same and what is different.</p> <p>To describe or show what they did and what happened.</p>	<p>To make simple comparisons and groupings that relate to differences and similarities between objects, materials and living things.</p> <p>To draw or simply state what happened.</p> <p>To begin to group and classify.</p>	<p>To use simple features to compare objects, materials and living things and decide how to sort and group them.</p> <p>To compare results, look for similarities and differences. With guidance, begin to notice patterns and relationships</p> <p>To group and classify in different ways</p>

<p>Evaluating</p> 	<p>To talk about what happened.</p> <p>To listen to the teacher using scientific vocabulary.</p>	<p>To say what their observations show. Draw simple conclusions and explain what they did.</p> <p>To begin to use simple scientific vocabulary with prompting from the teacher.</p>	<p>To use their observations and ideas to suggest answers to questions. Talk about what they have found out and how they found it out.</p> <p>To use scientific vocabulary competently and appropriately.</p>
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### How will we implement science in our school?

- Use our HIPS vision and principles of practice for science.
- Planned teaching of science each **half term** through enquiry lessons in EYFS, which is progressive, and provide purpose and meaning for children. For KS1 this is a weekly discrete science lesson.
- Our termly '**sparky starts**' provide opportunity to explore the natural world, our local community and focus on natural curiosity and questioning. It allows opportunity to learn through first hand experiences and practical tasks.
- Children will use science in their **classrooms** as part of their daily life at school to apply skills taught. For example, continuous provision, independent selection in **COOL time**.
- Weekly **Forest School** sessions ensures additional coverage of seasonal change, plants and habitats across the school.
- **Evidence** of science can be seen in individual pupil science books [in KS1], on Tapestry [YR], Seesaw [KS1] class learning journey displays and on enquiry medium term planning and enquiry organisers.
- Each half term, children have opportunity to develop their working scientifically skills. This is usually in the form of a **science investigation** and fair testing, but also provides opportunity to observe over time, research, sort/classify and noticing patterns.
- Children are encouraged regularly to ask and answer their own questions through **investigations** designed by their class/teacher/group.
- Our school **research centre**, including IT and books, is also used as secondary sources of information.
- Our whole school annual **healthy week** also provides opportunity to embed knowledge and skills linked to the human body.
- Our **daily class routine** includes teaching of seasonal change and weather, including reading scales for temperature as appropriate.
- Each half term we aim to offer **enrichment opportunities** to build on our children's **science capital**. These may include: Raptor foundation visit, trip to Botanic Gardens [Cambridge], Woodgreen assembly and workshops, Sublime Science day, Blue Cross Webinar on living things and habitats, British Science Week assembly.
- Termly scientists studied.

# TAPS Working Scientifically Cycle

