

Working Scientifically Progression Map

EYFS	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
<i>Show curiosity about objects, events and people.</i>	<i>Explore the world around them and raise simple questions.</i>	<i>Raise their own relevant questions about the world around them.</i>	<i>Use their science experiences to explore ideas and raise different kinds of questions.</i>
<i>Engage in open ended activities.</i>	<i>Experience different types of science enquiries, including practical activities.</i>	<i>Should be given a range of scientific experiences including different types of science enquiries to answer questions</i>	<i>Talk about how scientific ideas have developed over time.</i>
<i>Take a risk, engage in new experiences and learn by trial and error.</i>	<i>Begin to recognise different ways in which they might answer scientific questions.</i>	<i>Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions.</i>	<i>Select and plan the most appropriate type of scientific enquiry to use to answer scientific questions</i>
<i>Find ways to solve problems/find new ways to do things.</i>	<i>Carry out simple tests.</i>	<i>Set up simple practical enquiries, comparative and fair tests Recognise when a simple fair test is necessary and help to decide how to set it up.</i>	<i>Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why.</i>
<i>Develop ideas of grouping, sequences, cause and effect. Know about similarities and differences in relation to places, objects, materials and living things.</i>	<i>Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them (identifying and classifying).</i>	<i>Talk about criteria for grouping, sorting and classifying; and use simple keys.</i>	<i>Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment.</i>
<i>Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.</i>	<i>Ask people questions and use simple secondary sources to find answers</i>	<i>Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations</i>	<i>Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.</i>
<i>Closely observes what animals, people and vehicles do. Use senses to explore the world around them</i>	<i>Observe closely using simple equipment With help, observe changes over time</i>	<i>Make systematic and careful observations Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used</i>	<i>Make their own decisions about what observations to make, what measurements to use and how long to make them for.</i>

<i>Make links and notice patterns in their experience.</i>	<i>With guidance, they should begin to notice patterns and relationships</i>	<i>Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them</i>	<i>Look for different causal relationships in their data and identify evidence that refutes or supports their ideas.</i>
<i>Choose the resources they need for their chosen activities. Handle equipment and tools effectively.</i>	<i>Use simple measurements and equipment (e.g. hand lenses, egg timers) to gather data</i>	<i>Take accurate measurements using standard units learn how to use a range of (new) equipment, such as data loggers / thermometers appropriately.</i>	<i>Choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately. Take repeat measurements where appropriate.</i>
<i>Create simple representations of events, people and objects.</i>	<i>Record simple data</i>	<i>Collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse this data.</i>	<i>Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</i>
<i>Answer how and why questions about their experiences. Make observations of animals and plants and explain why some things occur, and talk about changes.</i>	<i>Use their observations and ideas to suggest answers to questions Talk about what they have found out and how they found it out</i>	<i>With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions</i>	<i>Identify scientific evidence that has been used to support or refute ideas or arguments.</i>
<i>Develop their own narratives and explanations by connecting ideas or events.</i>	<i>With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language</i>	<i>Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions</i>	<i>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas, use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results.</i>
		<i>With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of</i>	<i>Use their results to make predictions and identify when further observations, comparative and fair tests might be needed.</i>

improving what they have already done.

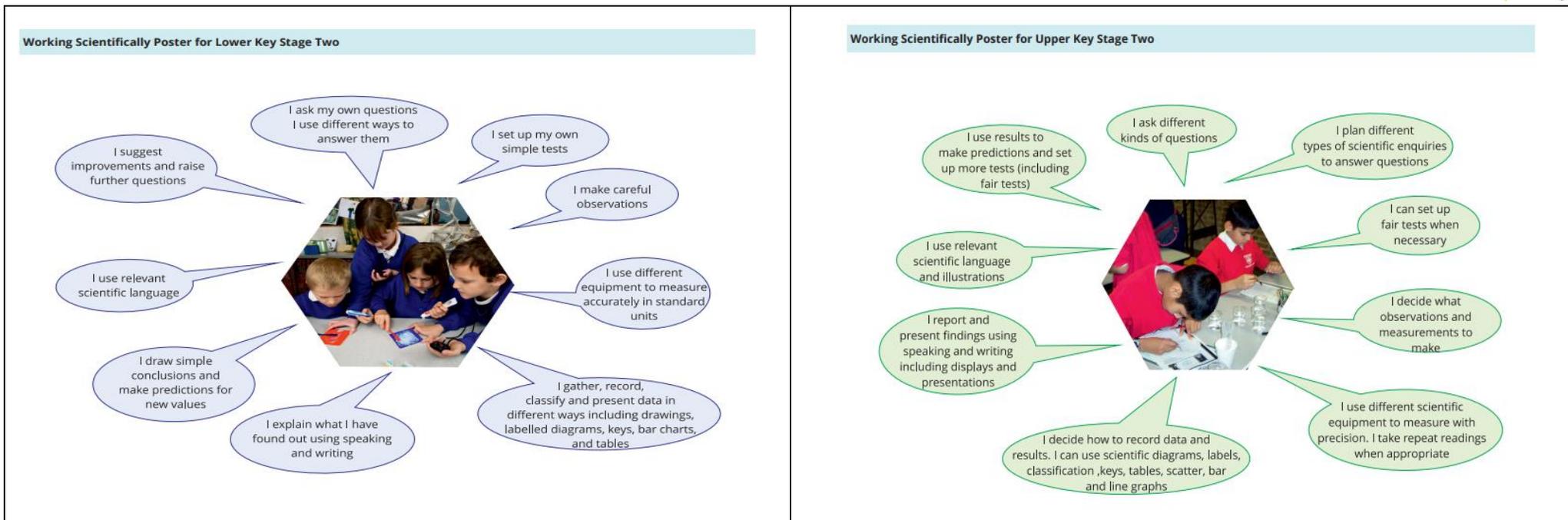
What this looks like-

Working Scientifically Poster for Early Years Foundation Stage



Working Scientifically Poster for Key Stage One





From: Working Scientifically in the Primary Classroom: Progression of Enquiry, CIEC

Our Science Topics follow the National Curriculum where learning builds on previous year group knowledge.

<p>EYFS</p>	<p>Autumn 1 Seasons-Autumn: Observe the changes in the season, the seeds that we discover on different trees, why some leaves change colour and fall and other don't.</p> <p>Exploring with magnets:</p>	<p>Autumn 2 Hibernation: Hedgehogs – discover why hedgehogs hibernate. (Hedgehog house in Forest School)</p>	<p>Spring 1 Teeth Cleaning/Oral Hygiene: *Sorting Activity – healthy/not healthy? *Healthy lunchbox *Visit: Dental hygienist & Nurse</p> <p>PANTS (Linked with PSHE): *Body awareness *Design own pants</p>	<p>Spring 2 Seasons-Spring: Observe the changes in the season: buds on trees, bulbs growing, changes in the weather etc.</p> <p>Life Education Bus: All about my body.</p>	<p>Summer 2 Mini-Beats: *Class trip to Hinchingsbrooke Park *The lifecycle of tadpoles (frog spawn brought into EYFS). *Mini-beast hunting in Forest School (and creation of clay models).</p>	<p>Summer 2 Outdoor Water Play: Floating and sinking</p> <p>Holiday: Clothing you'd wear for a summer holiday. What fabric would you choose?</p> <p>Year 4 – Science Experiment: link with EYFS</p>
--------------------	---	--	--	---	--	--

<p>What's magnetic and what's not?</p> <p>Little Red Hen: Baking Bread and watching the change in state. Talking about the texture of the ingredients used.</p>			<p>Looking after our bodies – the effect of exercise: *Linked to Jo Wicks and creating our own Joe Wicks workouts.</p> <p>Ice: Sea Creatures What is ice?</p>		<p>*The importance of Bees and which bees produce honey? *Creation of bug hotel (sustainable, safe place for mini-beasts).</p> <p>Sowing & Growing: Observing the changes over time.</p>	
---	--	--	---	--	---	--

The Year Group Curriculum Overviews will show the sequence in which the different topics are taught in KS1 and KS2.

<p>Year 1</p>	<p>Plants <i>Identifying and naming common plants and describing their basic structure</i></p>	<p>Animals, including Humans <i>Identifying and naming common animals and their diets</i></p>		<p>Everyday Materials <i>Identifying and naming everyday materials, describing properties and grouping materials</i></p>	<p>Seasonal Changes <i>Observing changes and describing weather in each season</i></p>	
<p>Year 2</p>	<p>Growing Plants <i>Plant life cycles, what plants eat</i></p>	<p>Animals, including Humans <i>Life cycles, basic needs of animals, diet, exercise and hygiene</i></p>	<p>Living Things and their Habitats <i>Exploring and comparing differences between living, dead and things that have never lived, studying habitats, simple food chains</i></p>	<p>Uses of Everyday Materials <i>Identifying and comparing everyday materials, finding out how some materials can be changed</i></p>		

Year 3	Plants <i>Identifying and describing the functions of the parts of a flowering plant, exploring what plants need for growth, investigating how water is transported in plants, life cycles including pollination, seed formation and dispersal</i>	Animals, including Humans <i>Nutrition and skeletons</i>		Rocks <i>Comparing and grouping rocks, describing how fossils are made, recognising how soils are made</i>	Forces and magnets <i>Comparing how things move, how magnets repel and attract, describing magnets as having two poles</i>	Light <i>Recognise that light is needed to see, notice that light is reflected from surfaces, protecting our eyes from light, recognise how shadows are formed and change</i>
Year 4		Animals, including Humans <i>Digestive system, teeth, food chains</i>	Living Things and their Habitats <i>Grouping and classifying living things, changing habitats</i>	States of Matter <i>Solids, liquids and gases, changing states, water cycle</i>	Electricity <i>Constructing circuits with switches and buzzers, recognising common conductors and insulators</i>	Sound <i>How sounds are made, how sounds travel, pitch, volume</i>

Year 5		Animals, including Humans <i>Changes in the human life cycle, puberty, gestation periods</i>	Living Things and their Habitats <i>Differences in life cycles between mammals, amphibians, insects and birds, reproduction in some plants and animals</i>	Properties and Changes of Materials <i>Comparing and grouping materials, dissolving, separating materials, reversible and irreversible changes</i>	Forces <i>Gravity, air resistance, friction, mechanisms (levers, pulleys and gears)</i>	Earth and Space <i>The solar system, movement of the planets, day and night</i>
Year 6	Evolution and Inheritance <i>Recognise changes over time, adaptation, evolution</i>	Animals, including Humans <i>The circulatory system, diet, exercise</i>	Living Things and their Habitats <i>Describe how living things are classified into broad groups including micro-organisms, plants and animals</i>		Electricity <i>Electrical symbols, changing the brightness of a lamp in a circuit, comparing circuits,</i>	Light <i>How light travels, how we see, shadows</i>

Currently Year 1 & 2 are operating a two year programme as there are mixed Year 1 and 2 classes.

Cycle	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
A	Materials	Animals and their Habitats	Animals- Classification	Plants	The Human Body	

B	Seasons and weather patterns in the UK	Human Body Senses	Naming wild plants and trees	Materials	Life Cycle of an animal	Exercise and Diet
---	--	-------------------	------------------------------	-----------	-------------------------	-------------------