

Working Scientifically - National Curriculum Skills Progression

In EYFS, children learn about the world through the Early Learning Goals as follows:

Understanding the World: The World
<ul style="list-style-type: none">- Children know about similarities and differences in relation to objects and materials.- Children know about similarities and differences in relation to living things.- They make observations of animals and explain why some things occur.- They make observations of plants and explain why some things occur.- They talk about changes.

They also begin to develop the characteristics of Effective Learning as follows:

Playing and Exploring Engagement <ul style="list-style-type: none">- Finding out and exploring- Playing with what they know- Being willing to have a go	Active Learning Motivation <ul style="list-style-type: none">- Being involved and concentrating- Keeping trying- Enjoying achieving what they set out to do	Creative and Critical Thinking Thinking <ul style="list-style-type: none">- Having their own ideas- Making links- Choosing ways to do things
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For Key Stage 1 and 2, the requirements of the National Curriculum are as follows:

At end of Year 2	At end of Year 4	At end of Year 6
<ul style="list-style-type: none"> • I can ask simple <u>questions</u> and recognise that they can be answered in different ways. • I can <u>observe</u> closely, using simple equipment. • I can perform simple <u>tests</u>. • I can <u>identify</u> and <u>classify</u> • I can use my <u>observations</u> and ideas to suggest answers to questions. • I can <u>gather and record data</u> to help in answering questions. 	<ul style="list-style-type: none"> • I can ask relevant scientific <u>questions</u>. • I can use <u>observations</u> and knowledge to answer scientific <u>questions</u>. • I can set up a simple <u>enquiry</u> to explore a scientific question. • I can set up a <u>test</u> to compare two things. • I can set up a <u>fair test</u> and explain why it is fair. • I can make careful and accurate <u>observations</u>, including the use of <u>standard units</u>. • I can use <u>equipment</u>, including thermometers and data loggers to make <u>measurements</u>. • I can <u>gather, record, classify and present</u> data in different ways to answer scientific questions. • I can use <u>diagrams, keys, bar charts and tables</u>; using scientific language. • I can use <u>findings</u> to report in different ways, including oral and written explanations, presentation. • I can draw <u>conclusions</u> and suggest improvements. • I can make a <u>prediction</u> with a reason. • I can identify <u>differences, similarities and changes</u> related to an enquiry. 	<ul style="list-style-type: none"> • I can plan different types of scientific <u>enquiry</u>. • I can control <u>variables</u> in an enquiry. • I can measure accurately and precisely using a range of <u>equipment</u>. • I can record <u>data and results</u> using scientific diagrams and labels, <u>classification keys, tables, scatter graphs, bar and line graphs</u>. • I can use the outcome of test results to make <u>predictions</u> and set up a further <u>comparative fair test</u>. • I can report findings from <u>enquiries</u> in a range of ways. • I can explain a <u>conclusion</u> from an enquiry. • I can explain <u>causal relationships</u> in an enquiry. • I can relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an <u>argument or theory</u>. • I can read, spell and pronounce scientific vocabulary accurately.
<p><i>Cross curricular links: English, Maths, D&T</i></p>		

Source: National Curriculum Statutory Guidance

Science in The Acorn Federation

Within our mixed age classes, units of work are taught to mixed year groups, e.g. EYFS, Year 1 and 2; Year 3 and 4 and Year 5 and 6. We have shown below the skills progression by year group. Work is differentiated for each of the four Year groups.

Group of Skills	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Communication (written and verbal)	Draw simple pictures of animals and plants. Talk about what they see and do. Learn the meaning of question words, e.g. What, Where, How, Why. Ask simple questions using these question words.	Draw simple pictures. Talk about what they see and do. Use simple charts to communicate findings. Identify key features of the topic. Ask questions.	Describe their observations using some scientific vocabulary. Use a range of simple texts to find information. Suggest how to find things out. Identify key features of the topic. Ask questions.	Use pictures, writing and diagrams as directed by the teacher. Use simple texts to find information, directed by an adult. Record their observations in writing, diagrams and pictures as directed by an adult.	Record observations, comparisons and measurements. Using tables and bar charts, begin to plot points on a simple graph. Use graphs to point out and interpret patterns in their data. Select information from a range of given sources.	Record observations systematically. Use suitable scientific language and formats to communicate numerical and written data. Select from appropriate sources of information from books and the internet. Select the appropriate format to record observations.	Choose scales for graphs which show data and features effectively. Identify measurements and observations which do not fit into a pattern. Use appropriate ways to communicate quantitative data using scientific language.

Enquiring and investigating to obtain evidence	Test out ideas suggested to them. Say what they think will happen. Begin to make simple comparisons.	Test ideas suggested to them. Say what they think will happen. Use first hand experiences to answer questions. Begin to make comparisons, e.g. living things.	Use simple equipment provided to help observation. Accurately compare objects, living things or events. Make observations relevant to their task. Begin to recognise when a test or comparison is unfair. Use first hand experiences to answer questions.	Put forward own ideas about how to find the answers to scientific questions. Recognise the need to collect data to answer questions. Carry out their own fair test with support. Recognise and explain why it is a fair test. With support, begin to realise that scientific ideas are based on evidence.	Understand that scientific ideas are based on evidence. Know how to vary one factor while keeping others the same. Set up their own approach to an investigation to answer questions. Describe which factors will change and which will remain the same and say why.	Use previous knowledge and experience combined with evidence to provide scientific explanations. Recognise the key factors to be considered in carrying out a fair test.	Describe evidence for a scientific idea. Use scientific knowledge to identify an approach for their own investigation. Explain how the investigation leads to new ideas and questions.
Observing and Recording	Make simple observations using appropriate senses. Record observations	Record observations using appropriate senses. Communicate	Respond to questions asked by an adult. Ask questions about what you see.	Make relevant observations. Measure using given equipment. Select equipment	Carry out measurement accurately using equipment. Make a number of	Make a series of observations, comparisons & measurements with increasing precision.	Independently measure quantities with precision using different and fine-scale divisions.

	<p>using pictures, photos or video. Communicate observations orally. Comment on things which are the same and different, e.g. in the natural world.</p>	<p>observations orally, or by drawing, labelling, or simple writing.</p>	<p>Collect and record data (supported by an adult) Suggest how they could collect data to answer questions. Begin to select equipment from limited choices.</p>	<p>from a wider choice.</p>	<p>observations, comparisons and measurements. Select and use suitable equipment. Sometimes as a group, make a series of observations and measurements to achieve a task.</p>	<p>Select apparatus for a range of tasks. Plan to use different apparatus effectively. Begin to make repeat observations and measurements systematically.</p>	<p>Select and use information effectively and efficiently. Independently make enough measurements or observations for the required task.</p>
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