



Hockliffe Lower School Progression of Knowledge and Skills – **Working Scientifically**

Early Years Foundation Stage	
<p>Understanding the World – The Natural World</p> <ul style="list-style-type: none"> • 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. 	
Working Scientifically	
Key Stage 1	Key Stage 2
<p>During years 1 and 2, pupils are taught to use practical scientific methods, processes and skills using the Science National Curriculum programme of study. Specifically, they are taught to:</p> <ul style="list-style-type: none"> • ask simple questions and recognise that they can be answered in different ways; • observe closely, using simple equipment; • perform simple tests; • identify and classify; • use their observations and ideas to suggest answers to questions; • gather and record data to help in answering questions. 	<p>During years 3 and 4, pupils continue to be taught practical scientific methods, processes and skills using the Science National Curriculum programme of study. Specifically, they are taught to:</p> <ul style="list-style-type: none"> • ask relevant questions and use different types of enquiries to answer them; • set up simple practical enquiries, comparative and fair tests; • make systematic and careful observations and take accurate measurements using standard units, using a range of equipment; • gather, record, classify and present data in a variety of ways to help in answering questions; • record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables; • report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions; • use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions; • identify differences, similarities or changes related to simple scientific ideas and processes; • use straightforward scientific evidence to answer questions or to support their findings.

Scientific Knowledge and understanding				
Theme	Year 1	Year 2	Year 3	Year 4
Asking Questions and Carrying Out Fair and Comparative Tests	<p><u>KS1 Science National Curriculum</u> Ask simple questions and recognise that they can be answered in different ways. Performing simple tests.</p> <ul style="list-style-type: none"> a I can ask simple questions. b I can perform simple tasks with some support. c I can explore the world around me to answer given scientific questions. d I can begin to recognise ways in which I might answer scientific questions. e I take part in different types of scientific enquiries including practical activities. f I can talk about scientific tests I am working on. 	<ul style="list-style-type: none"> a I can carry out simple practical tests with help. b I can ask simple questions and recognise that they can be answered in different ways. c I can perform tasks with increasing independence. d I can explore the world around me and ask simple scientific questions about how and why things happen. e I can use simple secondary sources to find out answers. f I can carry out simple practical tests using simple practical equipment. g I take part in a range of scientific enquiries including practical activities. h I can talk about the aim of scientific tests I am working on. i With support, I am beginning to recognise a fair test. 	<p><u>LKS2 Science National Curriculum</u> Ask relevant questions and use different types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests.</p> <ul style="list-style-type: none"> a With some support, I can start to raise my own relevant questions about the world around me in response to a range of scientific experiences. b With some support, I can start to make my own decisions about the most appropriate type of scientific enquiry I could use to answer questions. c With support, I can decide when a fair test is necessary. d I can, with some support, set up and carry out simple comparative and fair tests. 	<ul style="list-style-type: none"> a I can raise my own relevant questions about the world around me in response to a wider range of scientific experiences. b I can make my own decisions about the most appropriate type of scientific enquiry I could use to answer questions. c I can decide when a fair test is necessary. d I can decide how to set up a fair test, making decisions about what observations to make, how long to make them for and the type of simple equipment that I might use. e I can set up and carry out simple comparative and fair tests.

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Observing and Measuring Changes</p>	<p>KS1 Science National Curriculum Observing closely, using simple equipment.</p> <ul style="list-style-type: none"> a I can observe the natural world around me, with support. b I can observe changes over time, with support. c I can use simple measurements and equipment, with support. d With guidance, I can make careful observations, sometimes using scientific equipment. 	<ul style="list-style-type: none"> a I can observe the natural and humanly constructed world around me. b I can observe changes over time. c I can use simple measurements and equipment. d I can make careful observations, sometimes using scientific equipment to help me observe carefully. 	<p>LKS2 Science National Curriculum Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p> <ul style="list-style-type: none"> a I can make careful observations; b I can observe changes over time; c I can use a range of equipment, including thermometers and data loggers; d I can ask my own questions about what I observe; 	<ul style="list-style-type: none"> a I can make systematic and detailed observations. b I can independently observe changes over time and record my findings. c I can independently use a range of scientific equipment. d I can ask thoughtful questions about what I observe and predict a reasonable answer. e Where appropriate, I can take accurate measurements using standard units using a range of equipment.
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Identifying, Classifying, Recording and Presenting Data	<p>KS1 Science National Curriculum Identifying and classifying. Gathering and recording data to help in answering questions.</p> <ul style="list-style-type: none"> a I can use simple features to compare objects, materials and living things. b I can decide how to sort and classify objects into simple groups with some help. c I can record and communicate findings in a range of ways with support. d sort, group, gather and record data to help in answering questions, recording in simple pictograms and tally charts, 	<ul style="list-style-type: none"> a I can use simple features to compare objects, materials and living things. b I can decide how to sort and classify objects into simple groups. c I can record and communicate findings in a range of ways. d I can sort, group, gather and record data in a variety of ways to help in answering questions such as in simple sorting diagrams, pictograms, tally charts, block diagrams and simple tables. 	<p>Lower KS2 Science National Curriculum</p> <p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p> <ul style="list-style-type: none"> a I can talk about criteria for grouping, sorting and classifying objects with support. b I can group and classify things with support. c I can collect data from my own observations d I can present my data in a variety of ways to help answer given questions. e I can read an increasing number of scientific words accurately. f I can use scientific language already learned to record my findings. 	<ul style="list-style-type: none"> a I can talk about criteria for grouping, sorting and classifying objects more independently. b I can group and classify objects more independently. c I can collect detailed data from my own observations. d I can present my data in an increasing range of ways to answer my own and given questions. e I can use, read and spell scientific vocabulary correctly and with confidence, using my growing word reading and spelling knowledge f I can record my findings using scientific language, drawings labelled diagrams, keys, bar charts and tables.
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Drawing conclusions, Noticing Patterns and Presenting Findings</p>	<p>KS1 Science National Curriculum Using their observations and ideas to suggest answers to questions.</p> <ul style="list-style-type: none"> a I can see links between cause and effect with support. b I can begin to notice patterns and relationships with support. c I can begin to draw simple conclusions with support. d I can use simple and scientific language. e talk about their findings to my friends and my teacher. 	<ul style="list-style-type: none"> a I can see links between cause and effect. b I can notice patterns and relationships. c I can draw simple conclusions with support. d I can use simple scientific language. e I can identify and discuss differences between their results. f I can read and spell scientific vocabulary at a level consistent with my increasing word reading and spelling knowledge at key stage 1; g I can talk about my findings to a variety of audiences in a variety of ways. 	<p>Lower KS2 Science National Curriculum Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p> <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <ul style="list-style-type: none"> a I can draw simple conclusions from my results, with some support. b I can make predictions sometimes with some support. c I can raise further questions which could be investigated. d I can talk about, and then go on to write about, what I have found out. e I can share my findings with others in my class and my teacher. 	<ul style="list-style-type: none"> a I can draw conclusions from my results. b I can suggest improvements to my investigations. c I can suggest further questions to extend my investigations. d I can write in increasing depth about what I have done and what I have found out. e I can report and present my results and conclusions to others in written and oral forms with increasing confidence.
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Using Scientific Evidence and Secondary Sources of information			<p>Lower KS2 Science National Curriculum Identifying differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Using straightforward scientific evidence to answer questions or to support their findings.</p> <ul style="list-style-type: none">a I can make links between my own science results and other scientific evidence with support where necessary.b I can use straightforward scientific evidence to answer questions or support my findings.c I can identify similarities, differences, patterns and changes relating to simple scientific ideas and processes.d I can recognise when and how secondary sources might help me to answer questions that cannot be answered through practical investigations.
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