

National Curriculum Disciplinary Knowledge Coverage Overview – Working Scientifically

<u>Working Scientifically Skills:</u>	<u>EYFS: The Natural World</u>	<u>KS1</u>	<u>LKS2</u>	<u>UKS2</u>
Asking Questions and Being Curious 	2-3: Exploring materials and natural phenomena. 3-4: Talk about what they see, using a wide vocabulary. -Explore how things work. 4-5: Explore the natural world around them.	Explore the world and raise questions. Asking simple questions and recognising that they can be answered in different ways.	Raise questions about the world. Asking relevant questions and using different types of scientific enquiries to answer them.	Use science experiences to explore ideas and raise different kinds of questions.
Practical Skills: Making Observations and Taking Measurements   	2-3: Exploring and responding to natural phenomena. ELG: Explore the natural world around them, making observations and drawing pictures of animals and plants.	Observing closely Using simple equipment Performing simple tests. Make simple measurements using equipment.	Setting up simple practical enquiries. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used.	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Make decisions about their own measurements (what equipment to use, what measurements to take, how long to make them for, whether to repeat them,
Enquiry Types      	Simple Tests Observations Over Time Identifying, Grouping and Classifying Problem Solving	Comparative Tests (simple tests) Identifying, Grouping and Classifying Observations Over Time Researching (ask people questions and use simple secondary sources to find answers).	Comparative/Fair Tests (deciding how to set one up) Grouping, Sorting and Classifying (deciding which criteria needed) Pattern Seeking (deciding what data to collect when identifying relationships) Researching (recognise when and how to use secondary sources to help answer questions)	Comparative/Fair Tests Problem Solving Grouping, Sorting and Classifying (use and develop keys) Pattern Seeking (in the natural environment) Researching (recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact).
Enquiry Types (ALL)	Problem Solving; Identifying, Grouping and Classifying; Pattern Seeking; Observations Over Time; Researching; Comparative/Fair Tests			

Recording Findings, Collecting Data and Results 	4-5: Describe what they see, hear and feel whilst outside. ELG: Explore the natural world around them, making observations and drawing pictures of animals and plants.	Gathering and recording data to help in answering questions. E.g: -Tally Charts -Tables -Labelled Drawings Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them. E.g: - <i>Carroll diagrams</i> - <i>Venn Diagrams</i>	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Recording findings using: -Simple scientific language, -Tables -Bar Charts -Identification Keys -Labelled Diagrams -Drawings - <i>Standard units</i> <i>Make decisions about how to record and analyse data.</i>	Recording data and results of increasing complexity using: -Bar and Line Graphs -Scatter Graphs -Tables -Classification Keys -Labels -Scientific diagrams
Reporting and Presenting Finding 		Using scientific language to describe findings in: -Posters -Fact Files -Oral Presentations	Reporting on findings from enquiries, including: -Visual Displays -Written explanations -Oral Presentations -Presentations of results and conclusions Use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences.	Reporting and presenting findings from enquiries using: -Visual Displays -Written explanations -Oral Presentations Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time.
Drawing Conclusions 		Using observations and ideas to suggest answers to questions.	Draw simple conclusions Using straightforward scientific evidence to answer questions or to support their findings.	Presenting findings from enquiries with: -Conclusions -Causal relationships -Explanations -Degree of trust in results drawing conclusions
Evaluating 	ELG: 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.	<i>Noticing patterns and relationships in observations over time.</i>	Using results to: -Draw simple conclusions -Make predictions for new values -Suggest improvements -Raise further questions Identifying differences, similarities or changes related to simple scientific ideas and processes.	Using test results to make predictions to set up further comparative and fair tests. Identifying scientific evidence that has been used to support or refute ideas or arguments.
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