Working scientifically Milestones 2023-2024

			Year 1 and 2	Year 3 and 4	Year 5 and 6
Asking questions	Understand 'why' questions, like: "Why do you think the caterpillar got so fat?"	Ask questions to find out more and to check they understand what has been said to them.	Ask simple questions and recognise that they can be answered in different ways.	Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests.	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
Measuring and recording	Use all their senses in hands-on exploration of natural materials. (Understanding the world) Explore how things work. (Understanding the world) Use one-handed tools and equipment. (Physical development) Choose the right resources to carry out their own plan. For example, choosing a spade to enlarge a small hole they dug with a trowel. (Physical development) Make comparisons between objects relating to size, length, weight and capacity. (Mathematics) Compare quantities using language: 'more	Explore the natural world around them. (Understanding the world) Describe what they see, hear and feel whilst outside. (Understanding the world) Develop their small motor skills so that they can use a range of tools competently, safely and confidently. (Physical development) Count objects, actions and sounds. (Mathematics) Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen.	Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests.	make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Gather, record, classify and present data in a variety of ways to help in answering questions.	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.

	than', 'fewer than'. (Mathematics) Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen, or one which is suggested to them. Talk about what they see, using a wide vocabulary. (Understanding the world) Create closed shapes with continuous lines, and begin to use these shapes to represent objects. (Understanding the world) Draw with increasing complexity and detail, such as representing a face with a circle and including details. (	(Communication and language) Show resilience and perseverance in the face of challenge. Connect one idea or action to another using a range of connectives. (Communication and language) Describe events in some detail			
Concluding	Make comparisons between objects relating to size, length, weight and capacity. (Mathematics) Compare quantities using language: 'more than', 'fewer than'	Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary. (Communication and language) Connect one idea or action to another using a range of connectives. (Communication and language) Describe events in some detail. (Communication and language) Compare	Identify and classify. Use their observations and ideas to suggest answers to questions	Identify differences, similarities or changes related to simple scientific ideas and processes. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Use straightforward scientific evidence to answer questions or to support their findings.	Identify scientific evidence that has been used to support or refute ideas or arguments. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.

		length, weight and capacity. (Mathematics) • The children t			
Evaluating				Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	Use test results to make predictions to set up further comparative and fair tests.