

Working Scientifically progression of the seven science disciplinary skills

Disciplinary skill	Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Answering and answering questions	To begin to use everyday language to describe the world they see and live within. Ask and answer simple questions.	Use everyday language/begin to use simple scientific words to ask or answer a scientific question	Suggest ideas, ask simple questions and know that they can be answered/investigated in different ways including simple secondary sources such as books/video clips	Use ideas to pose questions, independently about the world around them	Suggest relevant questions and know that they could be answered in a variety of ways including using secondary sources such as ICT Answer questions using straight forward scientific evidence	Raise different types of scientific questions and hypotheses	Pose/select the most appropriate line of enquiry to investigate scientific questions
Investigating	To begin to follow instructions / start to explain individual exploring of the outdoors.	Follow instructions to complete a simple test individually or in a group	Do things in the correct order when performing a simple test and begin to recognise when something is unfair	Discuss enquiry methods and describe a fair test	Make decisions about different enquiries including recognising when a fair test is necessary and begin to identify variables	Plan a range of science enquiries including comparative and fair tests	Select and plan the most suitable line of enquiry, explaining which variables need to be controlled and why in a variety of comparative and fair tests
Observing	Begin to Observe objects materials and living things using simple equipment and describe	Observe objects materials and living things using simple equipment and describe what they see	Observe something closely and describe changes over time.	Make decisions about what to observe during an investigate	Make systematic and careful observations	Plan and carry out comparative and fair tests making systematic and careful observations	Make their own decisions about which observations to make using test results and observations to make predictions or set up further comparative or fair tests

	what they see						
Equipment and measuring	Use simple, everyday equipment to begin to understand size.	Use simple, non- standard measurements in a practical task	Use simple equipment such as hand lenses or egg timer to take measurements, make observations and carry out simple tests	Take accurate measurements using standard units	Take accurate measurements using standard units and a range of equipment, including thermometers and dataloggers	Take measurements using a range of scientific equipment with increasing accuracy and precision	Choose the most appropriate equipment in order to take measurements, explaining how to use it accurately. Decide how long to take measurements for, checking results with additional readings
Identifying and classifying	Begin to describe and identify some basic features.	Sort and group objects, materials and living things with help, according to simple observational features	Decide, with help, how to group materials, living things and objects, noticing changes over time and beginning to see patterns	Talk about criteria for grouping, sorting and categorising, beginning to see patterns and relationships	Identify similarities/differences/ changes when talking about scientific processes. Use and begin to create simple keys	Use and develop keys to identify classify and describe living things and materials	Identify and explain patterns seen in the natural environment
Recording and reporting on findings	Begin to discuss and explain things they have found/created.	Talk about their findings and explain what they have found out	Gather data, record and talk about their findings in a range of ways using simple scientific vocabulary	Record their findings using scientific language and present in note form, writing frame, diagrams, tables and charts.	Choose appropriate ways to record and present information, findings and conclusions for different audiences e.g. displays, oral or written explanations	Record data and results of increasing complexity using scientific diagrams, labels, classification keys, tables, bar and line graphs and model	Choose the most effective approach to record and report results linking to mathematical knowledge
Analysing data	Begin to answer some of their own questions about the world	Use every day or simple scientific language to ask and or answer a question on given data	Identify simple patterns and/or relationships using simple comparative language	Gather record and use data in a variety of ways to answer a simple question	Identify, with help, changes, patterns, similarities and differences in data to help form conclusions. Use scientific evidence to support their findings	Use relevant scientific language and illustrations to discuss communicate and justify their scientific ideas	Identify and explain causal relationships in data and identify evidence that supports or refutes their findings, selecting fact from opinion

	around them.						
Drawing conclusions	Begin to talk about their world around them.	Explain with help what they think they have found out	Use simple scientific language to explain what they have found out	Draw, with help, a simple conclusion based on evidence from an enquiry or observation	Use recorded data to make predictions, pose new questions and suggest improvements for further enquiries	Use simple mode of communication to justify their conclusions on a hypothesis. Begin to recognise how scientific ideas change over time	Identify validity of conclusion and required improvement to methodology. Discuss how scientific ideas develop over time