

Senacre Wood Primary- Scientific Enquiry Skills Progression

In the Primary Science curriculum, five types of enquiry are explicitly named in all year groups

- ✓ Observing changes over time
- ✓ Noticing patterns
- ✓ Grouping and classifying things (noticing similarities and differences)
- ✓ Comparative and fair testing
- ✓ Finding things out using secondary sources of information (researching)

Modelling is not explicitly mentioned but will be used. These types of enquiry will be used by children from year 1 to year 6 across the different subject areas as appropriate

EYFS Areas of Study

Understanding the World – The World

ELG: Look closely at similarities, differences, pattern and change. Children know about similarities and differences in relation to places, objects, materials and living things.

- Skills progression: They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.

Characteristics of Effective Learning: A Unique Child- Having their own ideas – links to scientific enquiry

- Thinking of ideas
- Finding ways to solve problems
- Finding new ways to do things
- Use the language of thinking and learning: think, know, remember, forget, idea, makes sense, plan, learn, find out, confused, figure out, trying to do
- Encourage open-ended thinking by not settling on the first ideas: What else is possible?

Strand of Scientific Enquiry	Skill	1	2		3	4	5	6
Recording findings or observing changes over time.	Remember	Use their own senses to describe	Observe closely, using simple equipment.	LOWER KEYSTAGE TWO: PUPILS SHOULD BE GIVEN A RANGE OF SCIENTIFIC EXPERIENCES TO ENABLE THEM TO RAISE THEIR OWN QUESTIONS ABOUT THE WORLD AROUND THEM.	Write about what has been found out	Help to make decisions about the type of simple equipment that might be used.	Use a range of scientific equipment with increasing accuracy and precision.	Record data and results of increasing complexity using scientific diagrams and labels, tables and bar and line graphs.
Grouping and classifying		Talk about what they have found out and how they found out	Record in a range of ways and begin to use simple scientific language.		Form decisions about what observations to make and how long to make them for	Learn how to use new equipment appropriately.	Make decisions about what observations to make, what measurements to use, and how long make them for.	
		Observe closely with support and scaffolding, using simple equipment.	Identifying and classifying groups of biological/chemical/physical materials independently		Discuss the criteria for grouping, sorting and classifying.	Use and design simple keys	Use simple models to describe scientific ideas	Use and design classification keys.

Noticing patterns and asking questions.	Understand	Ask simple questions and recognise that they can be answered in different ways.	Make tables and charts to help display data.		Ask unprompted questions about what is observed	Raise questions independently	Independently suggest reasons for similarities and differences.	Recognise how abstract ideas help them to understand and predict how the world operates
		With help, record in a range of ways and begin to use simple scientific language.	Secondary sources.		Decide which types of scientific enquiry are likely to be the best ways of answering questions posed	Record in notes, drawings, labelled diagrams, bar charts and simple tables so that patterns are clear.		
Using secondary sources of information to research	Apply	Use observations to compare and contrast at first hand or through videos and photographs	Gather and record data to suggest answers to their questions		Identify how these properties make a scientific concept useful			
		Suggest answers to questions from own knowledge.	Research simple secondary sources to find answers. Take measurements.		Testing and develop ideas about everyday phenomena and the relationships between living things and familiar environments with the use of secondary resources	Recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations.	Use a wide range of secondary sources of information Recognise when secondary sources will be most useful to research ideas.	Recognise that scientific ideas change and develop over time Begin to separate opinion from fact.
Comparative and fair testing	Analysis	Notice patterns and relationships in their observations.	Undertake simple tests where they have been given the opportunity to select factors to change Answer questions using data		Use standard units in testing to keep outcomes in the same measure.	Recognise when a simple fair test is necessary	Draw conclusions based on data and observations. Plan different types of enquiry to answer questions.	Use evidence to justify ideas.
		Make predictions around 'what might happen next.'	Communicate what they have found out and how they found out. Evaluate their enquiry- do they know the answer?		Explore the strengths of their own enquiry	Collect data from their own observations and measurements and consider whether it is useful or right. Identify new questions arising from the data, making predictions for new values within or beyond the data collected	Use scientific knowledge and understanding to explain any findings. Recognise and control variables where necessary.	Use test results to make predictions to set up further comparative and fair test.
Analysing observations	Create	Notice patterns and relationships in observations independently	Notice patterns and relationships in their observations independently and use these to create a new enquiry		Identify how a scientific concept's properties could be used creatively.	Find ways of improving what they have already done to solve an enquiry.	Report and present findings from enquires, including conclusions, causal relationships and explanations of results.	Analyse functions, relationships and interactions