

Science Curriculum at Soudley School

'Respect for Ourselves, Each Other and The Environment'

Key Drivers

Our Forest, Communication, Knowledge and Understanding of the World

KS1 Long Term Plan


[KS1%20Long%20term%20rolling%20programme%20Soudley.pdf \(website-editor.net\)](#)

KS2 Long Term Plan

[KS2%20Long%20Term%20Rolling%20Programme%20Soudley%20.pdf \(website-editor.net\)](#)

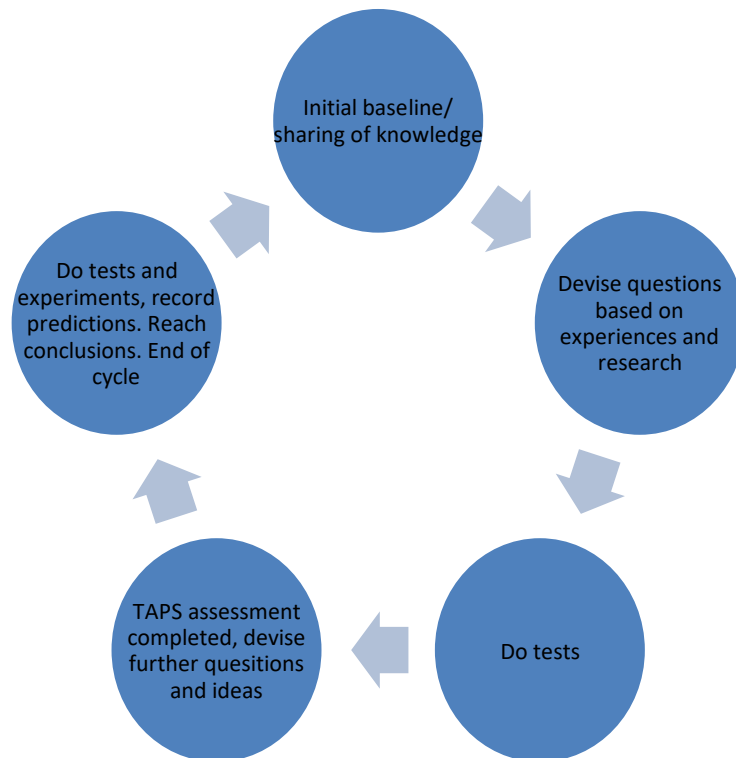
- The ability to think independently and raise questions about working scientifically and the knowledge and skills that it brings
- Confidence and competence in the full range of practical skills, taking the initiative in, for example, planning and carrying out scientific investigations
- Excellent scientific knowledge and understanding which is demonstrated in written and verbal explanations, solving challenging problems and reporting scientific findings.
- The ability to undertake practical work in a variety of contexts including fieldwork.
- A passion for science and its applications in past, present and future technologies. Developed high levels of originality, imagination, or innovation in application of skills.
- Build science capital: Foresters Forest, Contrasting Coasts, local knowledge

At Soudley School, we make every effort to address the needs of all children and so the activities presented will feature differentiation, extension and will be suitably modified and/or supported for those with SEND.

Early Years	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
 Working Scientifically	Thinking independently	Raising Questions	Increasing in accuracy, confidence and competence
WS Children are given words, knowledge, resources, examples and then are supported to ask questions	WS Children come up with questions on the topic and staff 'choose' the questions to investigate	WS Staff support the questions, develop the scientific language and so improve the questions	WS Children generate their own investigations using scientific language
Children answer in sentences. This modelled to them and expected of them	What/ Wheretype questions	Why..., why was....?	What if.....?
They are given opportunities to work on and revisit the 5 types of investigation# and the 7 enquiry skills## linked to the national curriculum content			
Equipment is offered	Children are given the method and they select the appropriate resources and materials	Children are given prompts about what to do and therefore, they work out what they need	Staff choose most appropriate question and provide opportunity for that question to be investigated/ answered. Children choose the materials, equipment and method

Recording			
Discussion Film/ photo Staff to record what was said	Given scaffolding, children Write down results, observations, diagrams etc. Staff model and guide the recording. Interpret given data. Scientific language is used wherever possible	Draw own tables and graphs Interpret tables and graphs Predictions and conclusions use scientific language	Choose the most appropriate form to record Evaluate and refute Justify predictions, answers and conclusions using scientific knowledge.
Vocabulary lists and unit planners are used and revisited to ensure knowledge and vocabulary is progressive. This is tangible across the school. <i>Vocabulary lists and Unit Planners can be found at: T:....</i> <i>Vocabulary list also available on Google Drive.</i>			
Innovation, application and originality Revisit the past to demonstrate innovation and change. State, explain and clarify “It was not always like this....” <i><u>Ogden Trust - scientific ideas through time</u></i>			

Assessment



Working scientifically – children will be taught to use the skills through content-related investigations. Examples can be found in the [Scientific Investigations Database](#)

#THE 5 SCIENTIFIC ENQUIRY TYPES	##THE 7 SCIENTIFIC ENQUIRY SKILLS
<ul style="list-style-type: none"> ● Observing over time ● Pattern seeking ● Identifying, classifying and grouping ● Comparative and fair testing ● Research using secondary sources 	<ul style="list-style-type: none"> ● asking questions ● making predictions ● setting up tests ● observing and measuring ● recording data ● interpreting and communicating results ● evaluating

WORKING SCIENTIFICALLY: STATUTORY REQUIREMENTS

	KEY STAGE ONE	LOWER KEY STAGE TWO	UPPER KEY STAGE TWO
QUESTIONING	Asking simple questions, recognising they can be answered in different ways	Asking relevant questions, using range of scientific enquiries to answer them Using straightforward scientific evidence to answer questions or support findings.	Planning range of scientific enquiries to answer questions, recognising and controlling variables where necessary
OBSERVING	Observing closely using simple equipment	Making systematic, careful observations, taking accurate measurements Using a range of equipment, including thermometers and data loggers	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
EXPERIMENTING	Performing simple tests	Setting up simple practical enquiries, comparative and fair tests	Using test results to make predictions to set up further comparative and fair tests
CLASSIFYING	Identifying and classifying	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
APPLYING	Using observations and ideas to suggest answers to questions	Using results to draw simple conclusions, make prediction, suggest improvements raise further questions Identifying differences, similarities or changes related to scientific ideas processes	Identifying scientific evidence that has been used to support or refute ideas or arguments
RECORDING	Gathering and recording data to help in answering questions	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Reporting on findings from enquiries, oral and written explanations, displays or presentations of results and conclusions	Reporting and presenting 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

Assessment and Progression at Soudley School

Our curriculum is knowledge based and designed to have an impact on long term memory. See long, medium, short term plans regarding curriculum content and coverage. The following outlines the progress expected within the subject and helps to provide progression throughout the school in our mixed age classes.

Due to the impact of Covid, teachers assess children at the beginning of units of work and track back through the colours when necessary, to fill gaps and ensure sound understanding before moving on.

Science Progression:

		OBSERVATION AND CONCLUSION	ENQUIRY, PREDICTION, TESTING	DATA COLLECTION	RECORDING
EYFS	Red	Make simple observations	Enjoy finding out about things	Join in – e.g. leaf collections	Draw what interests them
Year One	Orange	Make observations Talk simply about what they see Answer simple questions about what they see Describe simple features with simple vocabulary—parts of the body, a tree Observe closely using simple equipment to help them – e.g. magnifying glass	Perform simple tests using simple equipment – e.g. a timer Talk about some reasons why things might happen, or why something has happened Understand basic safety rules when testing out their ideas	Recognise that scientific ideas are more than guesses, and based on evidence Collect data when asked – e.g. a weather station Count data sets – trees in a field Sort data within given criteria – tall trees, wet days, blue eyes Remember and recall information Underline important facts	Record what they have seen or done in different ways, including drawing and labelled diagrams Record some information onto a pre prepared chart Label objects according to simple criteria Record things they have seen or done from memory
Year Two	Yellow	Answer questions using evidence Ask questions about what they see Make relevant observations Give simple reasons and explanations for what they have seen Identify simple parts of what they see – e.g. petal, leg	Find things out, with help and suggestions Begin to make predictions about what might happen Understand key factors that make a fair test Use simple apparatus effectively and safely	Gather and record data to help in answering questions and understand why this is important Use tallies to count in surveys Use books to find information	Begin to use cause and effect in their explanations, and some scientific vocabulary Use simple tables and charts Identify, classify and use bulleted lists Make sketches of their observations Use line graphs to present their findings
Year Three	Green	Choose what observations to make Know that questions can be answered in different ways Compare what happened to what might have happened and give simple explanations Make a precise series of observations and measurements	Identify features of a fair test and carry out a fair test with help Think of questions to ask during testing Decide on approaches to answer questions and suggest own ideas Select suitable equipment Suggest improvements in their work	Use books and other sources of information Begin to suggest ways to collect data Recognise the importance of data collection Make suggestions about how to collect data	Record and label sketches and diagrams, sometimes with notes Use ICT to record results Begin to plot points for simple graphs Record systematically Record a series of observations in different ways

		Classify simple features –flower, tree Examine closely and question what is seen	Predict before testing Begin to repeat observations and measurements	Use graphs to find and interpret patterns	
Year Four	Blue	Make systematic and careful observations and comparisons Compare observations over time Categorise observations Begin to make theories Provide explanations using scientific language Use precise scientific language Ask relevant questions	Decide on the best approaches for enquiry Make predictions based on scientific knowledge Describe or show how to vary a factor and keep others the same Repeat tests and explain difference Review work and check predictions Suggest improvements giving reasons	Recognise the importance of the evidence collected Compare and identify data patterns Select from a range of sources Question others about their work Know the work of some scientists Count and measure quantities accurately Use sources of information to analyse	Use a range of scientific conventions Understand and begin to use both quantitative and qualitative data Record and present data in a variety of ways – tables, bar charts, line graphs Order results scientifically
Year Five	Indigo	Begin to relate conclusions to patterns, previous knowledge and observational evidence Make judgements and conclusions about what has been seen, and support these with known facts Justify their own theories through observation and conclusion Use straightforward scientific evidence to answer questions or support findings	Offer explanations for differences Modify tests for accuracy Plan different types of scientific enquiries to answer questions Recognise and control variables Make practical suggestions about working methods and improvements Use results to draw simple conclusions, make predictions for new values, suggest improvements Develop further observations and experiments from results	Gather and classify data in a variety of ways Distinguish and discriminate between different elements of data	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
Year Six	Violet	Evaluate the results of observations Combine observations to give new hypotheses Look for and understand poor data Identify differences, similarities or changes related to simple scientific ideas and processes	Use a range of scientific enquiry to answer questions Use test results to make predictions and to set up further comparative and fair tests	Identify scientific evidence that has been used to support or refute ideas or arguments. Take accurate measurements using a range of equipment, including thermometers, with increasing accuracy and precision 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 Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results

TAPS assessments from the Primary Science Teaching Trust: <https://pstt.org.uk/resources/curriculum-materials/assessment>

[Progression in science](#)

[Progression in vocabulary](#)

[Scientific investigations](#)