St John's Church of England Primary School

Progression in

Science

Sharing Joy and Hope in the Community

National Curriculum Purpose of study

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Aims

The national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

Key Stage 1 National Curriculum Expectations	Key Stage 2 National Curriculum Expectations
Pupils should be taught: • Plants • Animals, including humans • Seasonal changes • Everyday materials • Living things and their habitats • Uses of everyday materials	Pupils should be taught about: • Plants • Animals, including humans • Rocks • Light • Forces and magnets • Living things and their habitats • States of matter • Sound • Electricity • Properties and changes of matter • Earth and Space • Forces • Evolution and inheritance

SKILLS	KS1	Lower KS1	Upper KS2
Planning	I can explore the world around me and raise my own simple questions	I can raise my own relevant questions about the world around me	I can use my science experiences to explore ideas and raise different kinds of questions
	I can experience different types of science enquiries, including practical activities	I can be given a range of scientific experiences including different types of science enquiries to answer questions	I can talk about how scientific ideas have developed over time
	I can begin to recognise different ways in which I might answer scientific questions	I can start to make my own decisions about the most appropriate type of scientific enquiry I might use to answer questions	I can select and plan the most appropriate type of scientific enquiry to use to answer scientific questions
Observing/ obtaining evidence/ recording evidence	I can carry out simple tests	I can set up simple practical enquiries, comparative and fair tests I can recognise when a simple fair test is necessary and help to decide how to set it up	I can recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why
	I can use simple features to compare objects, materials and living things and, with help, decide how to sort and group them (identifying and classifying)	I can talk about criteria for grouping, sorting and classifying; and use simple keys	I can use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment
	I can ask people questions and use simple secondary sources to find answers	I can recognise when and how secondary sources might help me to answer questions that cannot be answered through practical investigations	I can recognise which secondary sources will be most useful to research my ideas and begin to separate opinion from fact
	I can observe closely, using simple equipment I can, with help, observe changes over time	I can make systematic and careful observations I can help to make decisions about what observations to make, how long to make them for and the type of simple equipment might be used	I can make my own decisions about what observations to make, what measurements to use and how long to make them for
	I can, with guidance, begin to notice patterns and relationships	I can begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them	I can look for different causal relationships in data and identify evidence that refutes or supports my own ideas
	I can use simple measurements and equipment (e.g. hand lenses, egg timers) to gather data	I can take accurate measurements using standard units and learn how to use a range of (new) equipment, such as data loggers / thermometers appropriately	I can choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately. I can take repeat measurements where appropriate.

	I can record simple data	I can collect and record data from my observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and make decisions about how to analyse this data	I can decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
	I can, with help, record and communicate findings in a range of ways and begin to use simple scientific language	I can use relevant simple scientific language to discuss ideas and communicate findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions	I can use relevant scientific language and illustrations to discuss, communicate and justify scientific ideas, use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results
Concluding Evaluating	I can use my observations and ideas to suggest answers to questions I can talk about what I have found out and how I found it out	I can, with help, look for changes, patterns, similarities and differences in my data in order to draw simple conclusions and answer questions.	I can identify scientific evidence that has been used to support or refute ideas or arguments
		I can, with support, identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done.	I can use my results to make predictions and identify when further observations, comparative and fair tests might be needed