

St John and St James

Science

Jesus said, 'I have come that you will have life, life in all its fullness.'



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. *National Curriculum 2014*

During Foundation Stage

During the Foundation Stage the young people at St John and St James are encouraged to find and explore, to play with what they know and ask questions about what they don't.

Their environment is structured so that pupils are able to make links between their expanding knowledge and their experiences at school.

Pupils work to find similarities and differences and to make observations surrounding these.

Pupils talk and explore their ideas in a range of different ways, including through play, and are introduced to the concept of recording their ideas.

During Key Stage 1

Pupils expand their knowledge and skills by:

Asking simple questions and recognising that they can be answered in different ways

Observing closely, using scientific equipment and recording their observations.

Performing simple tests and recording their findings. It is later in KS1 that pupils are introduced to scientific vocabulary such as hypothesis.

Identifying and classifying things in their environment.

Using their observations and ideas to suggest answers to questions by gathering and recording data to help in answering questions.

During Key Stage 2

In KS2 pupils refine their skills and knowledge by exploring concepts in greater depth and recording their findings with greater accuracy by:

Asking relevant questions and using different types of scientific enquiries to answer them

Setting up simple practical enquiries, comparative and fair tests

Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers

Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions

Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables

Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions

Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

Identifying differences, similarities or changes related to simple scientific ideas and processes

Using straightforward scientific evidence to answer questions or to support their findings.

<p>Planning</p> <p>Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of the National Curriculum. We carefully adapt and extend the curriculum to match the unique circumstances of our school.</p> <p>Planning is structured in a way that follows an inquiry based approach. This follows the idea that pupils gain knowledge through skillfully delivered lessons. They then use this knowledge to conduct fair scientific tests and experiments, finally linking their knowledge and their real world experience.</p> <p>Planning</p> <p>Carefully designed and sequenced units support teaching concept. In depth coverage of the National Curriculum with engaging, illustrated resources. Spaced practice and retrieval ensures that new knowledge is built on secure prior learning. Regular opportunities to read and discuss and write about</p>	<p>Teaching</p> <p>Science is a body of knowledge built up through the experimental testing of ideas. Science is also a methodology, a practical way of finding reliable answers to questions we may ask about the world around us. Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation; using and applying process skills and learning new knowledge.</p>
<p>Marking and feedback</p> <p>We mark each piece of work positively, making it clear verbally, or on paper, where the work is good, and how it could be further improved and by asking questions designed to extend and scaffold further learning. Open questions are used to develop pupils' resilience and independent thought.</p>	
<p>Assessment</p> <p>Formative:</p> <p>We assess children's work formatively through observations and marking.</p> <p>Summative:</p> <p>Children's science is continually assessed through verbal feedback and formal marking. These assessments inform the class teacher's planning for future lessons.</p> <p>EYFS:</p> <p>Teachers and key workers make observations regarding the pupils' development in this subject.</p>	<p>Resourcing and display</p> <p>Science resources are funded with the Science budget. Any additional Science resources that are not planned for through the Science long term plan, need to be approved by the Science lead and Headteacher.</p> <p>Working wall:</p> <p>The Science working wall should celebrate pupils' work in experiments, displaying their inquiry based approach and their findings. Vocabulary is a key aspect of the Science curriculum and this should be presented clearly on the working wall.</p> <p>Excursions and Incursions</p> <p>Science excursions to museums are encouraged, as well as online/virtual tours and exhibitions. As much as possible, particularly in EYFS, science is encouraged to be conducted outside.</p>
<p>Monitoring</p> <p>It is the responsibility of the Science Subject Leader, the Headteacher and Governors to monitor the standards of children's work and the quality of teaching in Science. The Science subject co-ordinator is also responsible for supporting colleagues in the teaching of science, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. An action plan is written and reviewed annually. The science subject coordinator helps with moderation of work samples to ensure consistency and calls in books and checks data for evidence of progress, with feedback being given to staff on a termly basis or where appropriate. The science subject coordinator monitors the quality of teaching through learning walks and drop ins. Pupil engagement is ensured through pupil voice and an inquiry based approach.</p>	