St James' First School

Maths Curriculum Overview

Reviewed November 2022

Introduction

Science is constantly evolving and changing our everyday lives and is vital to the world's future. It is science education that provides the foundations for understanding the world. We daily make many science-based decisions when managing our health and daily living.

At St James' we support our pupils to think independently and to raise questions with an emphasis upon investigative practical work. We hope the children will develop lively, enquiring minds and the ability to think and work scientifically. We aim to support the curriculum with interesting trips, activities and visiting speakers. In addition, we work in collaboration with other local schools to enhance the learning opportunities of all the students.

Intent

At St. James' we recognise the importance of our pupils acquiring a wide range of scientific enquiry skills, together with scientific knowledge. We are guided by the National Curriculum for Science (2014). 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. Pupils will develop understanding of the nature, processes and methods of science through different types of enquiries that help them to answer scientific questions about the world around them. Pupils will be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Our Science curriculum allows every child to access lessons through quality first teaching and scaffolding of learning to meet pupils' needs. We aim to inspire the children to ask their own questions and expand their vocabularies as they learn, adding Scientific words to their expressive vocabulary. Science offers all pupils the opportunity to expand their spiritual, moral, social and cultural understanding as they consider the role of Science in the world today and in the past.

Our themes allow us to link Science to other subjects and provide high quality knowledge and skills-based learning and connections can be made to other subjects e.g. history and maths. Wherever possible we use demonstrations and integrate outdoor and real life learning examples to stimulate investigation as a class, in groups or as individuals into our Science work e.g. using our grounds to study animals and habitats. Children are expected to discuss, predict, plan, observe, report and explain activities and results. At St James', we have carefully planned the curriculum to allow for revisiting knowledge. This means that each year, they touch on topics, go back over what they learned in previous years and then build on it with new knowledge.

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Implementation

Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all pupils are capable of achieving high standards.

Through our planning, we involve problem solving opportunities that allow children to apply their knowledge, and find out answers for themselves. Children are encouraged to ask their own questions and are given opportunities to use their scientific skills and research to discover answers. This curiosity is celebrated within the classroom. Planning involves teachers creating engaging lessons, often involving resources to aid understanding of conceptual knowledge. Teachers use precise questioning in class to test conceptual knowledge and skills, and assess pupils regularly.

Early Years	Key Stage One	Lower Key Stage Two
In EYFS, children are taught to make sense of the world around them. They will learn to develop their skills of observation, prediction, critical thinking and discussion. The children will conduct experiments, be encouraged to explore different methods of discovery, and they will start to use drawings and charts to present their findings. Children will work with a range of materials both inside and out of the classroom.	In KS1, children learn to ask questions and are encouraged to be curious. They learn to observe closely, using simple equipment and identify and classify things. Using their observations and ideas, children learn to suggest answers to questions they may have. Pupils learn to gather and record data to help in answering these questions.	In key stage 2 children are encouraged to broaden their scientific view of the world around them. They will learn what a 'fair test' is, take measurements using a range of equipment, gather and record data, report their findings orally and in writing.

'Working scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word-reading and spelling knowledge.

We build upon the knowledge and skill development of the previous years by initially finding out what the children already know at the start of a topic. This is carried out using specific questioning linked to the previous years teaching. Teachers use the progression of skills from previous years for each science topic, in order to support this. As the children's knowledge and understanding increases, and they become more proficient in selecting, using

scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.

Working Scientifically skills are embedded into lessons to ensure they are being developed throughout the children's school journey and new vocabulary and challenging concepts are introduced through the use of science knowledge organisers and direct teaching.

Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills, in order to embed scientific understanding.

Impact