Science Policy

2024-2025

Ratification Table:

Approved by: R. James	**Date: Sept 2024**
Last reviewed on: Sept 2024	
Next review due by: Sept 2025	

Intent

Rationale

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

Implementation

Teaching and Learning style

Science should be practical to enable children to fully understand scientific knowledge. Information should be recapped at the beginning of every lesson so children can recall prior learning which they can build on.

To provide the children with practical scientific experiences, we run STEAM days each half term which are linked to the classes diverse figure. These key people are also linked to the classes topic area. We also work with many external agencies to further our Scientific knowledge (see below).

Planning

At St Nick's, we follow the KAPOW scheme for Science, which follows the National Curriculum. Science topics are planned across each year group. The curriculum is organized under an enquiry based curriculum.

Planning on Medium term plans must consist of a learning objective and working scientifically. We use the KAPOW scheme for Science.

Working Scientifically skills are embedded into lessons to ensure these skills are being developed over the years and linked to Science topics. New vocabulary and challenging concepts are introduced through direct teaching.

Regular events, such as STEAM days, allow all pupils to come off-timetable, to provide broader provision and the acquisition and application of knowledge and skills. We also

take part in different workshops with University's and local Scientific projects to enhance children's scientific knowledge and understanding.

Marking

Every piece of work is to be marked with at least a tick if necessary, and use the marking symbols below where appropriate. The aim of all marking in Curriculum Skills is to address any misconceptions the child has. If possible, there should be evidence to address the misconception and examples given for the child to complete after teaching input. If possible, WWW/EBI can be used as necessary.

The Foundation Stage

The programme of study for the Foundation stage is set out in the EYFS Framework. We also follow the KAPOW scheme for Science in EYFS. Science is also covered through 'Understanding the World'. Understanding the world involves guiding children to make sense of their physical world and their community. In the EYFS, children have topic based lessons and extend their learning through continuous provision. Opportunities in continuous provision enable children to develop their understanding of the world and develop their scientific understanding of how things work. Children learn through play, by adults modelling, by observing each other, and through guided learning and direct teaching. Children should be given opportunities to test out their scientific knowledge and have the support from adult interactions to develop their understanding and vocabulary.

Personal, social and health education (PSHE) and citizenship

Every class has a different diverse person which they learn about each half term. These figures have been carefully chosen and link to topic areas. From past and present, the significant people studied include a diverse range of gender, race and age, including those with disabilities. At St Nicholas of Tolentine, we believe that children must see themselves and their backgrounds represented in the role models they are presented with.

As a catholic school, there are strong links with RE across the curriculum. In Term 1, each class undertakes a Saint study, giving pupils the opportunity to research a different saint linked to their topic.

Spiritual, moral, social and cultural development

The social and economic implications of science are important but, generally, they are taught most appropriately within the wider school curriculum: teachers will wish to use different contexts to maximise their pupils' engagement with and motivation to study science.

Equality of Opportunity

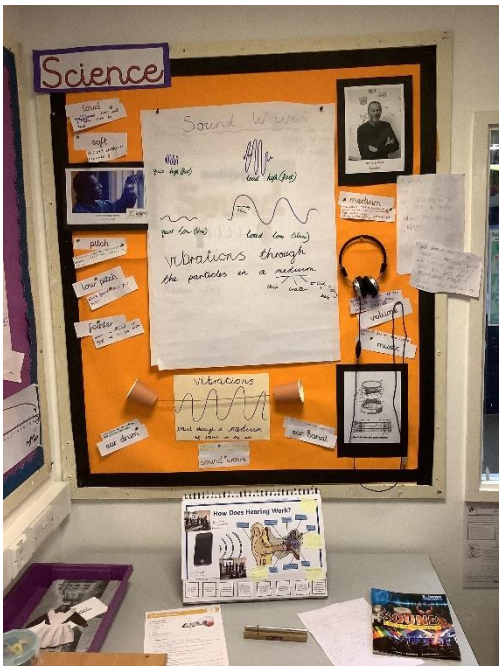
At St Nick's, we want our Science lessons to involve practical elements which give all children the opportunities to be engaged in their learning. We aim to meet the needs of all our pupils by providing a variety of approaches and tasks. Some children may need additional support to develop their scientific knowledge and skills. This could be through pre teaching of key vocabulary, visual aids or working more closely with an adult.

The National Curriculum for Science reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely. They must be assisted in making their thinking clear, both to themselves and others, and

teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

Resources and classroom environment

We follow the KAPOW scheme for Science, which follows the National Curriculum. There is a science curriculum overview in place which maps out learning objectives for EYFS, KS1 and KS2, as well as the overview of working scientifically.



Science lessons may require specific resources in order for the lesson to be taught to a high standard and to ensure that children have the best possible chance to succeed in every lesson. Therefore, during the planning stages, it is the teachers' responsibility to be clear on the resources and to resource the lesson. Any specific resources that need to be used and cannot easily be located they must contact the subject leader in advanced for support and if needed new resources can be ordered.

Each classroom has a topic display where key learning and information is displayed. All key vocabulary and definitions should be on display to support children's oral and written learning. Practical examples should be displayed to support children recap their prior learning.

Impact

Assessment for learning

At the beginning of each new Science topic, each class should teach a floorbook lesson, giving pupils the opportunity to share what they already know and what they want to find out about the topic. This session will guide the direction of the teacher's planning for the term. Throughout the topic, pupils should be encouraged to ask questions which can be added to the class display or floorbook. These questions should then be referred back to as these themes are discussed throughout the term.

Teachers should use the termly cover sheets to highlight skills that pupils have met. Evidence for this can be found in the pupils' topic books or through their contributions as part of a floorbook lesson.

Monitoring and evaluation

Throughout the year, the subject lead will look at books and floorbooks, as well as listening to pupil voice. The subject lead then gives feedback to the teaching team. Staff meetings are also held to develop subject knowledge and share examples of successful teaching in Science.

Appendix 1

Curriculum overview

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
EYFS		Animal adventures	I am a scientist!	Our beautiful planet	Changing seasons	
Y1	Making connections – Investigating science through stories	Comparing animals	Everyday materials	Introduction to plants	Seasonal changes	Sensitive bodies
Y2	Making connections – Investigating science through stories	Microhabitats	Use of everyday materials	Plant growth	Habitats	Life cycles and health
Y3	Making connections – Investigating science through stories	Forces and magnets	Light and shadows	Plants	Rocks and soil	Animals, movement and nutrition
Y4	Digestion and food	Sound and vibration	States of matter	Electricity and circuits	Making connections – How does the flow of liquids compare?	Classification and changing habitats
Y5	Mixtures and separation	Earth and space	Unbalanced forces	Human timeline Making connections - Does the size of an asteroid affect its impact strength?	Properties and changes of materials	Life cycles and reproduction
Y6	Classifying big and small	Evolution and inheritance	Light and reflection	Making connections – Are some sunglasses safer than others	Circuits, batteries and switches	Circulation and health

Animals, including humans	Energy	Forces, Earth and Space	Living things and their habitats	Making connections	Materials	Plants