



St Nicholas CE Primary Academy

Science Curriculum Summary Statement

Mission Statement

St Nicholas CE Primary Academy believes that all pupils, their families and the wider community should be given every opportunity to fulfil their potential through education. We recognise that everyone is unique. By respecting and encouraging the individual we aim to produce confident, independent thinkers and learners able to respond positively to an ever-changing world.

Christian values underpin all aspects of the school.

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Ambition | Community | Friendship | Perseverance | Respect | Trust

Introduction:

This curriculum statement outlines the teaching, management and organisation of science at St Nicholas Primary School. The National Curriculum 2014 states why we teach science in schools:

‘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.’

At St Nicholas Primary School we believe that all pupils deserve and need a fully rounded curriculum to become confident, independent lifelong learners. Science has a crucial role in this and is considered a vital part of our pupils’ experiences whilst at school. As such, all pupils are given opportunities to participate in activities across the disciplines of biology, chemistry and physics during their time in school in line with the National Curriculum 2014.

AIMS

Science teaches an understanding of natural phenomena. It aims to stimulate a child’s curiosity in finding out why things happen in the way they do. It teaches methods of enquiry and investigation to stimulate creative thought. Children learn to ask scientific questions and begin to appreciate the way in which science will affect the future on a personal, national and global level.

The objectives and aims of teaching Science are to enable children to have opportunities to:

- Develop interest and enjoyment in Science
- Develop understanding of key scientific concepts and skills
- Enable pupils to communicate scientific ideas effectively through the use of relevant scientific language
- Plan, implement, conclude and evaluate scientific investigations using equipment correctly. This also includes relevant ICT equipment.
- Develop awareness as to how science influences and affects our everyday lives.
- Develop use of Information and Communication Technology (ICT) within science

TEACHING AND LEARNING STYLES:

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Science should be taught with the emphasis on the pupils engaging themselves in practical enquiry to support and/or develop their understanding of scientific concepts and skills. Teachers use a range of strategies during science teaching, including:

- Investigative enquiry
- Questioning
- Illustrative enquiry
- Exploration

Children should be given the opportunity to investigate and answer scientific questions, using a range of data, which may be obtained through practical investigations. They should participate in practical investigations, and present their results either verbally or in written form.

SCIENCE CURRICULUM PLANNING:

Foundation Stage:

Science is taught through the Early Years Foundation Stage Curriculum framework. Relevant development matters cover designated topics.

Key Stages 1 and 2:

The school has adopted the Kent Scheme of Work written by Andrew Berry as the basis of our science curriculum in school. Skills, concepts and knowledge will always relate to the scheme of work but teachers may alter the context in which these are taught to enable cross curricular links to be made. A cross-curricular approach is encouraged where possible so pupils will experience science through literacy (reporting and recording), history (the work of influential scientists over time), geography (science of geology, habitats and other earth sciences), mathematics (accurate measuring, and data recording) and computing. All units must be covered over the course of the year, even if the teacher chooses to teach them in an alternative order that best fits with their annual overview.

Inclusion:

Class Teachers are responsible for adapting individual lesson plans in line with their children's needs. In all classes children have a wide range of scientific abilities, and teachers must ensure that suitable learning opportunities are provided for all children by matching the challenge of the task to the ability of the child. This should be achieved in a variety of ways:

- Setting tasks which are open-ended and can have a variety of responses;
- Setting tasks of increasing difficulty (we do not expect all children to complete all tasks);
- Grouping children by ability in the room, and setting different tasks for each ability group;

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- Allocating appropriate adult support;
- Providing appropriate differentiation and support to carry out tasks and record results.

CROSS CURRICULAR LINKS:

English:

Science will contribute significantly to St Nicholas’ teaching of English by actively promoting reading, writing, speaking and listening skills. Children develop oral skills in science lessons through discussions, with a written element being reflected through their recounts of investigations.

Mathematics:

Science contributes to the teaching of Mathematics in a variety of forms. For example, when children are studying weights and measures they are developing their ability to use and apply number. Investigations enhance estimating through predictions, whilst many conclusions involve discussions surrounding statistics and/or numbers.

Information and Communication Technology (ICT):

Pupils are taught to use a range of ICT equipment to enhance their scientific learning. This includes: • Date loggers

- Digital cameras
- Video cameras
- Digital microscopes

Personal, social and Health Education (PSHE) and Citizenship:

Science makes a significant contribution to the teaching of PSHE and Citizenship. Subject content raises matters of citizenship and social welfare, whilst giving numerous opportunities to debate and discuss. Therefore, Science promotes the concept of ‘positive citizenship.’

RESOURCES:

Class Teachers are responsible for informing the Science Leader of resources required to deliver the Science curriculum. Shared science resources are located in clearly labelled topic boxes in the science cupboard. Teachers must ensure these are returned to the correct boxes once used. No children are allowed to remove or return resources without adult supervision. Information books on science topics are available in the science cupboard, as well as individual classrooms. In order to support the delivery of the science curriculum, the outdoor environment at St Nicholas should be used to maximum potential.

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MONITORING AND ASSESSMENT:

The Science Leader will ensure progress is tracked, and class teachers are responsible for ensuring progress in Science is recorded on the relevant tracking spreadsheet and grids after each topic. Progress is judged through Teacher Assessment. Teachers will assess children's work in science by making informal judgements during lessons. Pupils are taught and encouraged to use a range of recording strategies to communicate their ideas and scientific findings. Class teachers should then monitor and assess these accordingly. Children should be encouraged to respond to these comments. An annual written report, detailing pupil's progress in science is provided.

Health and Safety:

Pupils will be taught to use scientific equipment safely when using it during practical activities. Class Teachers and/or Teaching Assistants should report any damages to the subject leader and defective equipment should be taken out of action. The school has adopted the ASE book 'Be Safe' as its model risk assessment and therefore this should be consulted when necessary.

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