



Make your light shine so others will see the good that you do"



North Somercotes CE Primary School

Science Policy

"A scientist is not a person who gives the right answers; it is one who asks the right questions".

Claude Levi-Strauss

Science comes from the Latin word "scire", which means to know.

What is science?

Our definition for EYFS and KS1 – Science is asking questions and exploring the natural world through our senses.

Our definition for KS2 – Science is the study of the natural and man-made world through questioning, observation and experimentation.

The study of science is the acquisition of knowledge about the world based on facts learned through experimentation and observation. To achieve this, as the great physicist Carl Sagan once said, "*science is a way of thinking, more than it is a body of knowledge.*" By developing a healthy curiosity about the world and their place in it, our children at North Somercotes CE Primary School will **shine a light** on its many wonders and truly understand the world around us. To look at the world with scientific eyes is to see it with a sense of awe and wonder, to ask questions, to be forever curious, and to strive to build on the knowledge we have.

Context

The village of North Somercotes is an area of low social mobility. While we have a beach on our doorstep, the opportunity for children to experience other areas of the natural world (forests, countryside, lakes, mountains etc.) and access activities which engage them in science (museums, zoos, farms & aquariums; transport and technology museums) before they start school is relatively limited. On top of this, when asked, 50% of the children reported finding science interesting as an area of study. Only 30% have ever been to a museum outside of educational visits and when prompted, most children could name only one or two scientists, both of whom were from the last century. That said, 33% reported saying that they would like to work in a scientific field when they grew up.

Concepts

The National Curriculum for Science explains that it aims for all children to develop "*scientific knowledge and conceptual understanding through the specific disciplines of **biology, chemistry and physics.***"



Intention

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"Science is the poetry of reality,"

Richard Dawkins

Through our implementation of the National Curriculum we aim:

- To develop and promote a curiosity about the world and their place within it.
- To give children the space and confidence to ask questions and provide them with the necessary tools and skills to find the answers.
- To develop an understanding of the uses of science both in the past, the present, and even what it could do for us in the future.
- To help the children understand biology, chemistry and physics through the wonder of scientific enquiry.
- To have the knowledge to understand the natural, man-made and physical world and to have the skills to find out the answers to the questions they don't yet know the answers to.
- To Shine a Light on inspirational scientists for our children to aspire to.

Implementation

Here at North Somercotes CE Primary School, we aim to achieve these objectives through the delivery of a broad and ambitious Science Curriculum, rich in skills and understanding. Our Science subject leaders have created a bespoke curriculum to meet the needs of our children. This includes a clear **Yearly Overview of scientific concepts, skills, knowledge and vocabulary** and an extensive **Planning and Progression document** – all closely matched with National Curriculum requirements. From this custom made **Unit Plans** have been created for each year group in the most part linked to our whole school theme for each term. We aim to shine a light on the wonders of science and create scientists of the future. As each class explores their inspirational person for the term our children will become aware of many more inspirational scientific figures. Where appropriate, children will be exposed to a variety of resources such as factual posters, diagrams, vocabulary, and photographs. There should be purposeful displays including key facts they have learnt throughout the topic. Scientific vocabulary related to the topic and pertinent to their age range should be displayed and referred to consistently.

Roles and Responsibilities

Subject Leader

The science subject leader monitors the way their subject is taught throughout the school by:

- Work scrutiny
- Learning walks
- Pupil voice
- Lesson observations
- Teacher interviews
- Ensuring all key documentation is up to date



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The science subject leader has the responsibility for monitoring the way in which resources are stored and managed. North Somercotes CE Primary School works closely in partnership with LEAD Teaching School Lincolnshire in ensuring high quality, up to date a relevant CPD and partnership work.

Teaching Staff

All teaching and non-teaching staff will ensure that the school curriculum is implemented in accordance with this policy. Staff will ensure they are using the correct vocabulary for their year group in line with our Yearly Overview of Concepts, Skills, Knowledge and Vocabulary. They will be confident with their subject knowledge and are aware of the expectations for key endpoints of the previous and next year groups and also the end of key stage requirements as per the Planning and Progression document created by subject leaders. They will keep up to date with current research and worldwide events. In the event of any subject knowledge or training needs the subject leaders specialist knowledge should be sought out.

Organisation and planning

How do we teach Science?

Throughout our school, we believe that science should be taught through enquiry. We are passionate about children discovering science facts rather than just being presented with them. Time is allowed for groups and individuals to play with and explore the resources and then, through a range of different types of enquiry, the children ask questions and consider what they have observed. Well organised enquiries and careful questioning allow children to build up their own knowledge based on what they already know and their experiences. The skills of scientific enquiry are built up over time and are matched to suit the enquiry. The children know that science is a practical part of the curriculum in which they get to explore and develop an understanding of the world around them. We structure our curriculum using whole school subjects in blocks over a number of weeks. This enables us to go deeper into subjects and to make meaningful connections with other subjects.

Science is structured so that the children can work through 3 key concepts: physics, biology and chemistry. Running through this is the concept of **Scientific Enquiry** where the children will learn to use the 5 different types of enquiry:

- Comparative and fair testing
- Pattern seeking
- Identifying, classifying and grouping
- Observing over time
- Research using secondary

Physics – Physics is the science of forces and the behaviour of the material universe.

Biology – Biology is the science of living organisms and their interactions with each other and the environment.

Chemistry – Chemistry is the science of the structure, properties and reactions of materials.



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The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop a secure understanding of each key block of knowledge and concepts in order to progress to the next stage. Insecure understanding will not allow genuine progression; pupils may struggle at key points of transition, build up serious misconceptions, and/or have significant difficulties in understanding higher-order content.

EYFS

- To know about similarities and differences in relation to places, objects, materials and living things.
- To talk about the features of their own immediate environment and how environments might vary.
- To make observations of animals and plants and explain why some things occur, and talk about changes.

Key Stage 1

- Physics - seasonal changes
- Biology - plants; animals (including humans)
- Chemistry - everyday materials

Lower Key Stage 2

- Physics – light; electricity; forces and magnets; sound
- Biology – plants; animals (including humans)
- Chemistry – rocks; states of matter

Upper Key Stage 2

- Physics – light; electricity; forces; Earth & space
- Biology – animals (including humans); living things and their habitats; evolution and inheritance
- Chemistry – properties and changes of materials

Inclusion

- The school's science curriculum, lessons and materials will support equality of opportunity and an inclusive attitude to all learners. We will ensure that children are provided with a broad and balanced curriculum. Children will be able to engage in informed debate on environmental issues.
- All pupils will have equal opportunity to reach their full potential across the science curriculum regardless of their race, gender, cultural background or ability. Class teachers will be responsible for planning activities that are differentiated and suitably challenging to meet the needs of all children, enabling access to the study of science.
- We will ensure our Bottom 20% readers are able to fully access all aspects of the science curriculum through adapting of resources, additional adult support and other means of quality first teaching support.

Further information can be found in our SEND Policy



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Impact

"Scientists have become the bearers of the torch of discovery in our quest for knowledge."

Stephen Hawking

We are immensely proud of the science at North Somercotes CE Primary School. The children value the subject and have a good knowledge of physics, biology and chemistry. Our children are given the opportunity to develop a curiosity of the natural and man-made world and through lessons they are able to make sense of what they observe and experience. Through a carefully structured curriculum and well considered enquiries they are able to organise their thinking, make links between new and existing knowledge and in turn gain a deeper understanding of themselves and their world. Having a strong sense of themselves and the world is crucial to helping them grow and develop a caring attitude towards our planet and other living things. They will leave our school with a rich scientific knowledge and understanding not only of the concepts within science but they will also have shone a light on many inspirational scientific figures they can aspire to be.

Policy Agreed: Autumn '22

Policy Review: Autumn '25