



South Hykeham Community Primary School Science Curriculum

Expectations

Level Expected at the End of EYFS

In our Foundation Stage, this involves following the 'Statutory framework for the Early Years Foundation Stage', and the following are expected:

Understanding the World

ELG: The Natural World

Children at the expected level of development will:

- Explore the natural world around them, making observations and drawing pictures of animals and plants;
- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Key Stage 1 National Curriculum Expectations

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

'Working scientifically' must always be taught through and clearly related to the teaching of substantive science content in the programme of study.

Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

The Year 1 and Year 2 specific expectations are outlined in the statutory requirements in the Year group programmes of study in the National Curriculum for England.

Lower Key Stage 2 National Curriculum Expectations

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

‘Working scientifically’ must always be taught through and clearly related to substantive science content in the programme of study.

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

The Year 3 and Year 4 specific expectations are outlined in the statutory requirements in the Year group programmes of study in the National Curriculum for England.

Upper Key Stage 2 National Curriculum Expectations

The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

‘Working and thinking scientifically’ must always be taught through and clearly related to substantive science content in the programme of study.

Pupils should read, spell and pronounce scientific vocabulary correctly.

The Year 3 and Year 4 specific expectations are outlined in the statutory requirements in the Year group programmes of study in the National Curriculum for England.

Intent

At South Hykeham Primary School, we recognise the importance of Science in every aspect of daily life. As one of the core subjects taught in Primary Schools, we give the teaching and learning of Science the prominence it requires.

The 2014 National Curriculum for Science aims to ensure that all children:

- 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 skills required to understand the uses and implications of science, today and for the future.

The National Curriculum provides a structure and skill development for the science being taught throughout the school.

At South Hykeham Primary School we encourage children to be inquisitive and we foster a healthy curiosity about the world around them. We invite them to ask questions and become independent learners in exploring possible answers for their scientific based questions. All children are encouraged to develop and use a range of skills including observations, planning and investigations. Specialist vocabulary for topics is taught and built up, and effective questioning to communicate ideas is encouraged.

We ensure that the Working Scientifically skills (as laid out in the National Curriculum) are at the heart of our science teaching and that they are built-on and developed throughout children's time at the school so that they can apply their knowledge of science when using equipment, conducting experiments, building arguments and explaining concepts confidently.

We want children to leave our school with the skills and confidence to ask questions about the world around them, to investigate answers to those questions and to understand the importance of Science in our lives today and in the future.

Implementation

We create a positive attitude to science learning in our classrooms and teachers reinforce an expectation that all children are capable of achieving high standards in science whatever their levels of attainment in other curriculum areas. Our whole school approach to the teaching and learning of science involves the following;

- Science is planned and taught by class teachers in topic blocks as set out in the school programme of study and in accordance with the National Curriculum;
- Through our planning, we involve problem solving opportunities that allow children to find out for themselves. Children are encouraged to ask their own questions and

be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. Planning involves the teachers creating engaging lessons, involving high-quality resources to aid understanding of conceptual knowledge. Teachers use precise questioning in class to test conceptual knowledge and skills, and assess children regularly to identify those children with gaps in learning;

- We build upon the learning and skill development of the previous years. 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 (as set out in the national curriculum) are embedded into lessons to ensure these skills are being developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with topics;
- Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and workshops with experts;
- Children are offered a wide range of extra-curricular activities, visits, trips and visitors to complement and broaden the curriculum. These are purposeful and link with the knowledge being taught in class.

Impact

Our Science Curriculum is high quality, well thought out and is planned to demonstrate progression. This successful approach results in a fun, engaging, hands-on and high-quality science education. It provides the children with the foundations for understanding the world around them. Through the variety of techniques, resources and outside agencies used in our teaching the children gain an understanding that science has changed our lives and that it is vital to the world's future prosperity. The children at South Hykeham overwhelmingly enjoy science and this results in motivated learners who consider themselves to be scientists.