



Curriculum Statement for Science

Intent

A high-quality science education provides the foundations for understanding the world. Science has changed our lives and is vital to the world's future. Science is everywhere and scientists, just like children, are driven by their constant curiosity. Science at Stoborough contributes significantly to pupils' enjoyment and understanding of the world and their place within it. This awareness of themselves and their immediate environment provides an appreciation of the natural and human world. At Stoborough, our aim is that all pupils are taught essential aspects of the knowledge, methods, processes and uses of science. Through building a strong foundation of knowledge and concepts, children develop a sense of excitement and curiosity about natural phenomena. We aim to encourage an understanding of how science can be used to explain what is occurring, predict how things will behave, and analyse causes. It is our intention that every pupil, irrelevant of needs, develops such a passion for science that they harness their natural excitement and curiosity, and this inspires them to pursue scientific enquiry. Every child is given opportunities to be excited by scientific ideas and want to learn to explain and analyse phenomena, make predictions and solve problems.

Aims:

At Stoborough we closely follow the national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding
- 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.

At Stoborough, we recognise that children learn best when the curriculum is well sequenced to enable revisiting of core knowledge, skills and understanding. This sequenced approach deepens their conceptual awareness and allows application across the whole curriculum. 'Working scientifically,' enables the understanding of the nature, processes and methods of science and is used throughout science topics across the school. Scientific enquiry allows pupils to learn to use a variety of approaches to answer relevant scientific questions. Types of scientific enquiry used across the school include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Children are encouraged to find answers to questions through collecting, analysing and presenting data.

Implementation:

In the Early Years Foundation Stage (EYFS) Science is predominantly explored through Understanding of the World- The Natural World Early Learning Goal.

In Years 1-6 Science is taught weekly as a discrete subject. Planning is informed by the SNAP Science scheme of work, which ensures our curriculum is progressive and prior knowledge is built upon from year to year, as well as within each module. SNAP science has been carefully designed so that pupils use their developing science enquiry skills to build their knowledge of the scientific ideas in a systematic and conceptually appropriate way.

We recognise that working scientifically and asking questions and testing ideas against evidence is the most effective way for children to learn about science. Therefore, lessons have an enquiry focus and are carefully planned around a question for pupils to answer, either inside or outside the classroom. Learning sequences start with an 'explore' activity to excite children's curiosity, as well as providing an opportunity for rich formative assessment for children to explore what they already know and identify what they need to learn next.

Genuine curiosity leads to authentic, purposeful science investigations, so the next part of learning is an 'Enquire Challenge' where children collect and analyse data to answer questions and develop their scientific knowledge and understanding. The children are then given opportunities to summarise what they have found out, share their findings and reflect on what they have learned in the 'reflect and review' part of the sequence.

At Stoborough School, we have an agreed set of effective teaching principles for all lessons:

1. Previous learning is reviewed to develop fluent recall.
2. To avoid overloading working memory, material is presented clearly in small steps with opportunities for pupils to practise, eventually leading to independence – 'I do, we do, you do.'
3. Effective questioning – helps children to practise new information and make connections with prior learning as well as checking understanding.
4. Teachers provide scaffolds so all learners can achieve and so they can have a wider impact in the class.
5. Teachers check for understanding and give systematic feedback

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Quality first teaching:

We ensure that *all* children at Stoborough receive quality first teaching, including:

- Clearly designed lesson plans
- Appropriate use of modelling, explaining and questioning to engage with higher levels of critical thinking skills
- Many opportunities to discuss and rehearse orally before writing
- High expectations for all, including an expectation that pupils will accept responsibility for their own learning and work independently
- Regular use of encouragement and authentic praise to engage and motivate pupils
- Challenges to further their knowledge through verbal feedback
- Targeted scaffolding for children who need more support, including: writing frames; word banks with key vocabulary; sound mats
- Key vocabulary on display (used in class and explained) and also on knowledge organisers
- Pre-teaching of vocabulary

Impact:

By ensuring the key questions posed spark children's curiosity so they want to find out the answer, lessons are purposeful and result in children gaining a new understanding of the world around them. Learning objectives are designed so that children have a powerful understanding of the skills they are developing and success criteria enables teachers and pupils to know what they aiming for and evaluate how well they are doing.

As children reflect on their own learning, teachers can also assess the progress they are making by taking into account the things the children say, do and write or draw. Assessment is therefore ongoing and accurate-focusing on conceptual knowledge plus scientific skills.