

We always try to be that little bit better

Introduction

At the centre of our curriculum are the school aims and drivers, and science is at the heart of our learning to **inspire** the children to ‘**start small, dream big**’. At Seaburn Dene, we believe that high-quality science lessons and visits build upon children’s innate curiosity to interact, communicate and explore the world around- enabling them to ask and answer questions to discover and know more about the world in which they live. This starts through our 2 hour dedicated science lessons, as well as, making real life science links throughout the curriculum, when relevant, accessing both indoor and outdoor learning opportunities. We use first hand resources including our extensive school grounds and the local area. STEM ambassadors (visitors and video links) are accessed, across the year, to **inspire** the children and make it real and identify links to science now and in the future - supporting their **respect** for the world and help guide them to become respectful, inquisitive global citizens.

Intent

We try to instill a love of science to broaden children’s interests and successes within STEM, to value the impact of it, and to know and understand how it is linked to all of our lives. Our curriculum has been developed with the assistance of a STEM consultant, using Dual objective planning in every lesson, ensuring coverage of the knowledge prescribed within the National Curriculum and a carefully planned progression of enquiry skills. This method of teaching also supports learning access for all pupils, including SEND, as well as offering challenges and greater thinking opportunities, for more able children. Through this, we are able to equip children with the essential characteristics to help them become scientists:

- To develop scientific knowledge and understanding using first hand and concrete experiences, wherever possible.
- To carry out research using second-hand resources.
- To develop their conceptual understanding of science disciplines (biology, chemistry and physics), using different types of science enquiries to create scientific questions about the world around them.
- To develop and improve their understanding of the nature, processes and methods of science for each year group, ‘Working scientifically’.
- To extend their use, and understanding, of scientific vocabulary.
- To apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data.
- To understand the uses and implications of science today and in the future.

Science at Seaburn Dene, is continually adapted and highlighted through gaining accreditation of 'Silver' quality mark and currently (2021-22), we are working toward 'Gilt' level accreditation.

Our school aims to build **resilience** and for the children to learn from their mistakes, as well as having a rigorous approach to English and maths; the Foundation Stage focuses on TALK and mark making to record thinking and knowledge; KSI progresses with a greater focus on TALK and the written word; KS2 has a heavier emphasis on the use of maths and data.

Our pupils and families participate in a number of different scientific projects throughout the year to promote and embed a love of learning in science including, Science week (March), Schools RSPB Bird watch (Jan.), Outdoor Learning Days (May / November), and a range of competitions and family challenges, set on our web based platform (Dojo). (This year we have completed Lockdown challenges: STEM building, nature look, research project into nature and well-being. As well as, entering 'Baylab' competitions across school.)

Implementation

Our science teaching is about providing structure and guidance to allow children to develop their skills and knowledge as they grow in confidence and expertise. Science learning is embedded within communicating what they know, understand, think and discover and this is essential to work in partnership with others, including beyond the classroom environment.

Planning

1. Long term: Each year group has a series of topics to cover over the course of the academic year; these have been chosen to ensure full coverage of the knowledge outlined in the National Curriculum.
2. Medium term: Medium-term planning, outlining coverage of each topic, has been provided by our STEM ambassador. These include details of key vocabulary, suggested practical and written activities and skills it will be possible to demonstrate throughout the unit. These are adjusted and modified each year by our subject lead, through Network meetings and further CPD.
3. Short term: Teachers take information from the medium-term plans and break them down into afternoon sessions. Lessons often include a low-stakes quiz to support learners' ability to block learning and increase space in the working memory. Lessons always include challenge questions for pupils to apply their learning in a philosophical/open manner. Practical investigations are undertaken wherever possible.

To enhance scientific learning and understanding we also provide:

- science week projects
- science club (playtimes) - hands on science

- parent and family challenges
- STEM ambassadors (visits or videos) to make it real
- competitions

Teaching

Science is a core subject, and as such, is given two hours of curriculum time per week. We believe in whole-class teaching methods and combine these with enquiry-based research activities. We plan trips and invite visiting experts into school who will enhance the learning experience.

Classroom display supports and celebrates the teaching and learning, and reflects a consistent approach, showing the area of study, displaying the range of objectives possible to achieve (Assessment Rockets), as well as essential vocabulary and pieces of work. Wherever possible, resources, materials and books should be available for children to access and investigate outside of the lesson.

Impact

We measure the impact of our curriculum through the following methods:

- A reflection on standards achieved against the planned outcomes (using the National Curriculum and our in-house assessment system).
- A celebration of learning for each term which demonstrates progression across the school.
- Pupil discussions about their learning.
- Internal and external moderation of books.

Summative assessment

From EYFS to Year 6, children will be assessed at set points during the academic year. An assessment judgement will be reached using a combination of teacher judgement (EYFS - observational assessment; KS1/2 - assessment rockets/ judgements from each lesson) and the science Assessment boards.

Evidence will be collected and moderated against our 'standards file examples', to ensure consistency; this is also external moderated through Network sessions with our Subject Lead and STEM Ambassador.