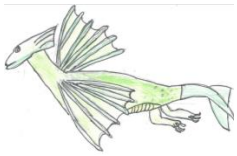
BOREHAM PRIMARY SCHOOL

A Friendship School

'Daring to aim high, scale new heights, spread our wings and fly far'




SCIENCE POLICY OCTOBER 2019

Staff Consulted: 4.11.19

Approved by Governing Body: 18.11.19

Next Review Date: October 2021

Boreham Primary School
Science Policy

Science Curriculum Intent

At Boreham Primary School it is our aim to develop children's interest and curiosity about the world around them through the specific disciplines of biology, chemistry and physics. We encourage children to be inquisitive throughout their time at school and beyond. This fosters in them a respect for the environment and provides opportunities to experience the awe and wonder of the natural world around us. Throughout the programme of study, the children will acquire and develop the key knowledge that has been identified within each unit and across each year group, as well as the application of scientific skills. The working scientifically skills are built on and developed throughout children's time at school so that they can apply their knowledge of science when using equipment, conducting experiments, explaining concepts and continuing to ask questions and be curious about their surroundings.

The 2014 National Curriculum for science aims to ensure all pupils:

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

The impact of this being that the children leave Boreham Primary School as confident scientists who are interested and curious about the world around them.

Curriculum Implementation

Planning for science is a process in which all teachers are involved to ensure that the school give full coverage of, 'The National Curriculum Programmes of study 2014' and 'Understanding of the World' in the Early Years Foundation Stage. At Boreham Primary School all teachers follow 'The Outstanding Science' scheme of work as well as other resources, for example, Hamilton Trust.

Our whole school approach to the teaching and learning of science involves the following:

- Where possible science is linked to class topics however, science is still taught as separate units and lessons where needed to ensure coverage.
- It is also discretely taught in many different contexts throughout all areas of the curriculum. For example, through English i.e. writing an explanation text about how plants grow.
- We build upon the knowledge and skill development of the previous years.
- Lessons can be taught on a weekly basis or blocked together to cover a series of objectives in succession.

- Vocabulary and concept word clouds are completed at the start (cold task) and end of each unit (hot task) to show clear progressions and understanding of key vocabulary. This enables pupils to articulate scientific concepts clearly and precisely.
- Videos and pictures are uploaded to Seesaw (online learning platform) so parents can see the learning of science, as well as the subject leader.
- Regular events are celebrated within school. For example, National Science Week.
- Visitors and trips are organised within the year to build upon children's learning in science.

Continuity and Progression
While it is important that pupils make progress it is vitally important that they develop secure understanding of each block of knowledge and concepts in order to progress to the next stage.

In the broad three strands of physics, chemistry and biology, knowledge is built upon year on year, so that at the beginning of a unit of scientific learning, pupils can review their previous learning before building upon it further.

Alongside the scientific knowledge that is taught, scientific skills run throughout all areas of science, where children are taught to work scientifically, so that pupils learn to use a variety of approaches to answer relevant scientific questions.

These types of scientific enquiry should include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data.

Working scientifically should not be taught as a separate strand. The notes and guidance in the national curriculum give examples of how 'working scientifically' might be embedded within the content of biology, chemistry and physics.

The national curriculum for science reflects the importance of spoken language in pupils' development across the whole curriculum. The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely. They should be clear in making their thinking clear both to themselves and others.

Contribution to Other Curriculum Areas
Through the thematic, topic-based approach to teaching, science is linked to other subjects often. For example, when teaching The Stone Age in history the science unit of rocks is taught. In particularly, there are explicit links with maths (collecting, presenting and analysing data), English (explanations) and Computing (recording scientific discoveries using computing hardware and software). Other links, where appropriate, are made to other subjects in the curriculum, such as PE and the effects of exercise on the body, as an example.

In addition to these knowledge-based links, many of the scientific enquiry skills apply across all areas of the curriculum, including asking questions, comparing, grouping and classifying,

researching and seeking patterns. The scientific skills of information-processing, reasoning and evaluating also permeate other areas of the curriculum.

Assessment, Recording and Reporting
Science work may be recorded in a variety of ways; formally in exercise books (at the back of topic books), using computing hardware and software or through photographs and videos uploaded to Seesaw.

Throughout lessons and units of work or blocks of teaching, teachers may use formal and informal methods of assessment, both summative and formative, to ensure that children are on track to meet the expectations of the National Curriculum. These assessments will inform future planning to ensure that the teaching of science meets the needs of all learners.

Science is assessed by the class teacher every half term, assessing whether a child is working below, at or above age expected expectation. Each teacher uses Target Tracker to record their judgements and assess using the national curriculum objectives.

At the end of each academic year data is collected to show attainment across the school for boys and girls as well as the whole cohort and identify children who are working at greater depth.

Review and Monitoring
The science leader may monitor their subject through planning scrutinies, book scrutinies, lesson observations, classroom drop-ins, displays, themed days and competitions, as well as through summative assessments on Target Tracker at the end of the academic year.

Policy Review
This policy will be reviewed by the science subject leader, on a two-yearly cycle.