Penwortham Broad Oak Primary School

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Science Policy

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Penwortham Broad Oak Primary School

Science Policy

Date: September 2025
Review Date: July 2027
Approved by: Governing Body

How was this Policy developed?

This policy was written by Louise Rostron and developed in consultation with teachers and other school staff, governors and the pupils at Broad Oak Primary School. We have listened and responded to all views to help strengthen the policy, ensuring that it meets the needs of all of our students. It is a framework that guides the teaching, learning, and overall management of science education within our school to ensure a curriculum aligned with national standards and promotes student progress. It has been approved by the school's governing body.

Aims and Objectives

The National Curriculum for Science states a high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry, and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes, and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

The national curriculum for science aims to ensure that 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.

Whole School Curriculum Ambition

At Penwortham Broad Oak Primary School, our ambition is to provide a curriculum for all our pupils designed in response to what we already know about our children. Our over-arching goal is routed in promoting a positive attitude towards learning so that
children enjoy coming to school, developing our children into life-long learners. Our curriculum is designed to provide all of our children with the core knowledge that helps them to make links between their prior and new knowledge, allowing them to develop a deeper understanding and be inspired to continue their learning outside of the classroom.

We aim to provide our children with stability through a consistent curriculum provision, allowing staff to become experts and build assessment tools. The curriculum is sequenced effectively to enable prior knowledge to be built upon both throughout and across year groups. At the heart of our curriculum there lies a respect for all of the topics we teach and how this provides our children with an Insight into the world around us.

At Penwortham Broad Oak Primary School, we teach children how to develop their behaviours and habits to become effective learners through asking questions in order to develop their curiosity. Broad Oak's curriculum has been developed so that our children are not afraid to make mistakes and accept ways forward as support rather than criticism.

By the time the children leave Penwortham Broad Oak Primary School, our ambition is to ensure that they have the necessary skills in science so that they will become successful in Key Stage 3 and become positive citizens in their community and the wider world.

Science Curriculum Ambition

Our ambition for pupils in Key Stage 1 & Key Stage 2 is to develop excitement and curiosity about the world around them.

- Pupils will have the skills to investigate the natural and humanly constructed world around them.
- Pupils will have knowledge of living things in order to look after the natural world.
- Pupils will be inquisitive and understand the science behind how things work.
- Pupils will use technical terminology accurately and precisely.
- Pupils will know how their knowledge about science applies to them in their lives.

In EYFS, Science is taught in the Foundation Stage under the umbrella of Understanding the World. The early learning goals that provide links with science are:

ELG 15 – The Natural World 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.

ELG 16 - Creating with Materials Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function, share their creations, explaining the process they have used, make use of props and materials when role playing characters in narratives and stories.

The skills of enquiry are also a characteristic of effective learning as highlighted in the Early Years Foundation Stage. Science is taught as part of ongoing provision within the Foundation Stage. The mud/ outdoor kitchens have a scientific basis as do other areas in EYFS. Children are encouraged to explore using all senses, ask questions

and identify similarities and differences and patterns and change.

Science Curriculum Intent, Implementation & Impact

Intent

At Penwortham Broad Oak Primary School, our intention is to develop confident, curious and knowledgeable scientists who enjoy learning and are equipped with the skills and understanding needed for future learning and life beyond primary school. Our science curriculum is ambitious and inclusive, based on the 2014 National Curriculum, and designed to build secure knowledge progressively across the school. We aim for pupils to develop a strong understanding of scientific concepts, use scientific vocabulary accurately, and apply their learning through enquiry and real-world contexts.

Implementation

Science is taught through discrete weekly lessons with the same high expectations as English and Mathematics. Mathematical and literacy skills, such as measuring and graphing, are taught at an age-appropriate level to support—rather than hinder—scientific understanding. High-quality dialogue and discussion are central to lessons, enabling pupils to articulate their thinking and deepen understanding.

The curriculum is carefully sequenced and supported by clear progression documents that embed working scientifically. Teacher's plan engaging, broad and balanced lessons that take account of pupils' prior knowledge, interests and needs. A range of teaching approaches is used to support all learners, and subject-specific vocabulary is explicitly taught and revisited across year groups through progression documents and knowledge organisers.

Assessment is ongoing and based on teacher judgement. Outcomes are recorded on the school's assessment system and reviewed at the end of each unit to identify whether pupils are working at the expected standard. This information is passed on to the next teacher to ensure continuity. Moderation takes place using national exemplification

materials, and statutory assessment data is submitted at the end of Key Stage 1 and Key Stage 2.

Opportunities are planned to challenge more able pupils through enquiry-based learning, open-ended investigations, data analysis and drawing conclusions. Learning is enhanced through practical experiences both inside and outside the classroom, including Forest School and educational visits, enabling pupils to observe, explore and apply scientific knowledge in real-life contexts.

Impact

As a result of this approach, pupils leave Penwortham Broad Oak Primary School with a secure knowledge of scientific concepts and the ability to apply skills independently and confidently. They use subject-specific vocabulary accurately, show curiosity and resilience in enquiry-based learning, and understand how science relates to the world around them. Pupils are well prepared for the next stage of their education, particularly Key Stage 3, and demonstrate positive attitudes towards learning and science as a subject.

Professional development opportunities are planned and provided to ensure teachers have the subject knowledge and pedagogical expertise required to deliver the science curriculum effectively."

Science Curriculum Impact

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

- Assessing children's understanding of topic linked vocabulary before and after the unit is taught.

- Marking of written work in books.

- Using dialogue learning tasks to assess children's understanding.

- Summative assessment of pupil discussions about their learning.

- Images and videos of children's practical learning.

- Interviewing the pupils about their learning (pupil voice).

- Moderation staff meetings where pupil's books are scrutinised and there is the opportunity for a dialogue between teachers to understand their class's work.

- External moderation of children's work at the end of each Key Stage.

- Formal reporting of standards at the end of each Key Stage.

- Annual reporting of standards across the curriculum to parents.

The Science subject leader monitors the impact of teaching through book looks and pupil discussions to ensure knowledge and skills are progressing effectively. They ensure learning is retained and revisited regularly, and that pupils can independently apply their scientific skills across a range of contexts.

Special Educational Needs

At Penwortham Broad Oak Primary School, we are committed to ensuring that all policies reflect our inclusive ethos and support the needs of every learner. In line with the Special Educational Needs and Disabilities (SEND) Code of Practice, we strive to:

- Provide equal access to opportunities for all pupils, including those with SEND.Ensure that reasonable adjustments are made to remove barriers to learning and participation.

- Promote high expectations, independence, and achievement for all pupils, regardless of need or background.

- Work collaboratively with families, external agencies, and staff to identify and meet the needs of pupils with SEND.

- Embed a graduated approach to support, ensuring early identification, targeted intervention, and regular review.

This policy should be read in conjunction with our SEND Policy and Equality Policy, which outlines our broader commitment to inclusion, accessibility, and the celebration of diversity.

Dissemination of the Policy

This policy has been made accessible to parents, teachers, and other school staff, governors through the school website. Anyone wanting a printed copy or the policy to be provided in another language or format, should make a request to the school office. Should the policy be required in other languages, please contact the school office.

Sources of Further Information

This policy should be read in conjunction with the following:

- School's own Health & Safety Policy
- School's own SEND Policy
- School's own Equality, Diversity and Inclusion policy

Useful resources/Appendix

https://www.gov.uk/government/publications/early-years-foundation-stage-framework--2

https://www.gov.uk/national-curriculum

https://www.gov.uk/government/publications/national-curriculum-in-england-science-programmes-of-study/national-curriculum-in-england-science-programmes-of-study