

Science Policy

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Teaching and Learning in Science

Subject Identity: Science

Fingerprint statement

Science is a subject that explores and explains the natural and physical world. It combines knowledge, enquiry and evidence, whilst developing understanding through questioning, observing and testing. Science values curiosity, accurate and fair testing, and distinguishes between scientific facts and scientific processes. Through exploration, curiosity and investigating, children are able to ask and answer their own scientific questions.

Core concepts and themes

Science nurtures a natural curiosity about the world and empowers pupils to use evidence systematically to develop and evaluate theories, hypotheses and explanations. Through exploration and enquiry, children deepen their scientific understanding while fostering a lifelong sense of awe and wonder about the world around them

The key concepts are:

- **Working Scientifically** – asking questions, investigating and evaluating.
- **Evidence** – using observations and data to support ideas.
- **Cause and Effect** – understanding why phenomena occur.
- **Patterns and Changes** – recognising consistency and variation over time.
- **Scientific Knowledge** – developing models and explanations of the natural world.

These key concepts, when used together, support and enable pupils to develop their own scientific understanding of their world. Science develops children's ability to think critically and deeply about the questions they may have, making links between concepts and theories.

Disciplinary Ways of Thinking

The disciplined process of asking questions, gathering evidence and using that evidence to refine explanations is fundamental in science. Science develops pupils as scientists by enabling them to investigate questions about the world using evidence and enquiry.

Teaching and Learning Documentation

To ensure clarity, consistency and effective communication across all subject areas, key documentation is developed by the Subject Leader and shared with relevant teaching staff. This documentation includes:

1. **Subject Policy**
2. **Curriculum Rationale**
3. **Unit of Study Overview**
4. **Knowledge and Skills Overview**
5. **Working Plan**

Together, this documentation collates the coverage and implementation of each of the Wider Curriculum Subject Areas.

Subject Leadership Documentation

Subject Leaders are responsible for monitoring and evaluating the effectiveness of their subject throughout the academic year. To ensure this is carried out systematically and with impact, the following key documentation is maintained and reviewed regularly:

1. **Subject Audit**
   An annual audit is completed to evaluate the overall effectiveness of the subject. This includes a RAG rating to identify strengths and areas for development, and to inform priorities for the year ahead.

2. **Subject Action Plan**
   A focused three-point action plan is developed, informed by both the School Development Plan and outcomes from the subject audit. This outlines clear next steps to support ongoing improvement and raise standards within the subject.

3. **Learning Enquiry**
   As part of the school's monitoring cycle, the Learning Enquiry process ensures a robust evaluation of the subject. This includes a range of activities such as book looks, learning walks, planning and resource checks, pupil voice and staff voice. Findings are collated, shared with relevant staff, and used to inform subsequent actions and next steps.

Delivery of Science

Science is taught weekly from Year 1 to Year 6, ensuring that all of the National Curriculum Programmes of Study are covered in depth. Weeks are built in, throughout the year, for revision of previous learning to give children the opportunity to practise and embed key skills and knowledge.

There is a school-wide focus on ensuring a variety of enquiry types used across science units.

Lesson Content

In support of foundational understanding of Science, key components of lessons have been established in conjunction with teaching proformas to support class teachers with consistent delivery lesson-by-lesson.

These key components include:-

- **'What is science?' statement -** As each science lesson commences, children will be reminded of the definition of the subject – "Science is the study of the natural world through investigations, observations and research."
- **Reference to skills of a Scientist -** Children are reminded of key skills that are commonly used in this subject area i.e. measuring, investigating, observing, researching, asking questions and recording.
- **Flashback task –** Strategically chosen revision, to promote recall and to embed learning from previous years.
- **Key vocabulary -** Carefully selected, subject-specific vocabulary is introduced, discussed and clarified within each lesson. Teachers facilitate purposeful talk to ensure pupils can confidently use and apply this terminology.
- **Teaching Toolkit strategies -** High-quality teaching is underpinned by the effective use of agreed Teaching Toolkit strategies. These include modelling, retrieval practice, adaptive teaching, precise assessment and opportunities for purposeful reflection, all of which support strong learning outcomes.

Performance and Learning Evidence

The systematic collation of evidence is essential in supporting pupils' learning and enabling effective monitoring of teaching and learning by subject leaders and senior leaders. To ensure Science learning is captured consistently and meaningfully across the school, the following approaches are in place:

- **Reception** – Curriculum floorbooks are used to capture shared learning experiences, discussions and outcomes throughout Play 2 Learn sessions.
- **Key Stage 1 (Years 1–2)** – A combination of Team Science floorbooks and Earwig is used to document both collaborative and individual learning.
- **Key Stage 2 (Years 3–6)** – Individual Science exercise books are used alongside Earwig to provide a comprehensive record of pupils' knowledge, skills and progression over time.

Please note: *Earwig is an online platform used to capture and store evidence of learning, including class discussions, activities and outcomes. It supports the documentation of pupils' developing knowledge and skills across the curriculum.*

Assessment

In line with the school's Marking and Feedback Policy, adults are expected to use ongoing formative assessment throughout the learning sequence. This ensures teaching is proactive and responsive to the needs of all pupils. Feedback may be delivered verbally or in written form and should support pupils in making progress within the lesson and over time.

At the end of each science program of study, pupils' retention and depth of knowledge are assessed through two key approaches:

- a retrieval quiz, focused on knowledge recall
- an open-ended 'connections' task, enabling pupils to demonstrate the breadth and depth of their understanding across the unit

Pupils identified as 'working below' National Curriculum expectations are recorded within the Wider Curriculum Assessment grids, alongside a brief commentary to support the identification and monitoring of gaps in learning across the curriculum.