Science at Ayresome

Intent

At Ayresome Primary School, we aim to equip all children with the knowledge, skills, and curiosity needed to understand, use and apply Science today, tomorrow, and in their future lives. Our high-quality Science curriculum inspires excitement, curiosity, and understanding about the world through the three key disciplines of biology, chemistry and physics, while also supporting the fundamental British Values.

We provide pupils with a range of opportunities to problem-solve, investigate and make sense of the world both inside and outside the classroom. Through collaborative, independent, and whole-class enquiry, children learn to communicate ideas clearly and confidently. By building secure knowledge and conceptual understanding, our curriculum helps pupils to recognise the power of rational explanation, use rich scientific vocabulary, and develop curiosity about natural phenomena. Pupils also learn to respect the environment and living things, including themselves and one another.

Since September 2022, the school has followed the 'Snap Science' scheme of work. This programme, now fully embedded, develops pupils' understanding and curiosity of nature, processes and methods of science through a variety of enquiry types that encourage questioning, thinking, and exploration of the world around them. Pupils learn to plan and carry out different forms of scientific enquiry, such as observing changes over time, noticing patterns, grouping and classifying, performing comparative tests, and researching using secondary sources.

The progression supported by the Snap Science scheme of learning supports children's metacognitive learning strategies, enabling them to apply knowledge effectively and use scientific vocabulary accurately and precisely as concepts are revisited and deepened.

Our enquiry-based approach ensures that children engage with hands-on scientific experiences from the start of their learning journey, fostering independence, curiosity, and confidence in scientific communication. Learning is further enriched through the use of the school environment (such as our green spaces), educational visits and whole-school workshops.

An annual Science Week provides opportunities for pupils to apply their enquiry skills, learn about influential scientists, and carry out experiments - recording, analysing, and evaluating their findings to reinforce their understanding of the scientific process.

Implementation

Our Science curriculum is designed to be progressive, knowledge-rich, and enquiry-driven from the Early Years through to Year 6. The Snap Science scheme supports teachers in planning, resourcing and sequencing high-quality Science lessons.

Curriculum Design and Structure

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- Each topic begins with an introduction that gives teachers the scientific background knowledge needed for effective delivery. Key information is clearly highlighted within lessons to support accurate teaching.
- Every unit includes a section on common misconceptions, helping teachers to identify and address potential misunderstandings early in the learning process.
- Topics are carefully sequenced to ensure that key scientific ideas and vocabulary are revisited and built upon across lessons, year groups, and Key Stages.
- The Ayresome Science Knowledge and Skills Progression Framework ensures that pupils' scientific understanding and enquiry skills develop cumulatively across the disciplines of biology, chemistry, and physics.

Teaching and Learning

- Teaching is focused on enabling children to think, talk, and work as scientists, applying their knowledge through practical enquiry and investigation.
- Lessons are enquiry-led, encouraging children to explore questions through observing, testing, classifying, and researching, developing curiosity and independence.
- Teachers use formative assessment in every lesson to identify gaps in knowledge and understanding. The *Reflect and Review* element allows pupils to summarise their learning, self-assess using success criteria, and plan next steps.
- The *Evidence of Learning* guidance helps teachers recognise how children demonstrate understanding through what they say, write, draw, and do.
- An online tracking tool supports the recording of pupils' achievement against National Curriculum objectives. This evidence is collated at the end of each module and automatically aggregated at the end of each Key Stage for accurate statutory reporting.

Enrichment and Inclusion

- Science lessons are differentiated to ensure all pupils can access learning and achieve success, with additional support for those with lower prior attainment in reading, writing, or maths.
- Greater depth opportunities are embedded through extended investigations, problem solving, and analytical tasks to challenge higher-attaining pupils.
- Pupils have access to enrichment opportunities such as an after-school STEM Club, educational visits, and outdoor learning experiences that make Science relevant and exciting.

- Classroom environments are designed to immerse pupils in scientific language and visual stimuli, supporting curiosity and reinforcing key vocabulary.

Impact

Our Science curriculum at Ayresome enables pupils to become confident, curious and capable scientists who understand the importance of scientific enquiry in explaining the world around them. This is achieved and evident from the following:

- The Snap Science framework ensures full coverage and deep engagement with the Programme of Study for Science, while assessments accurately measure what pupils have learned through ongoing classroom practice rather than stand-alone tests.
- Regular assessment and review enable teachers to identify gaps in learning and adapt teaching to secure strong progress for all pupils.
- Lessons culminate in shareable outcomes, allowing children to represent and communicate their scientific understanding in a variety of ways.
- The progressive structure of Snap Science ensures that knowledge and skills develop cumulatively from the Foundation Stage to Year 6, supporting smooth and effective transition between Key Stages.
- As a result, pupils leave Ayresome Primary with a strong foundation of scientific knowledge, the ability to apply enquiry skills confidently, and a lifelong curiosity about the natural world.