

At Edward Pauling Primary School, the Science curriculum is inclusive and engaging for all pupils enabling them to access all areas of science while being appropriately challenged. We aim to develop curious, questioning minds, encouraging children to pose thoughtful questions and think critically about the world around them. Through this, children are prepared with the knowledge, skills and attitudes that support future learning and potential employment in an ever-changing, scientific and technological world.

Intent - We aim to...



Implement a Science curriculum that is progressive, skills rich and incorporates practical investigation to develop a deep understanding.

Ensure that lessons are inclusive, engaging and build scientific knowledge, enquiry skills and curiosity, enabling all children to confidently explore and understand the world around them.

Develop teachers understanding of effective science teaching by sharing good practice and reviewing relevant research.

Explicitly teach children scientific knowledge and enquiry skills within a well-sequenced curriculum. Ongoing monitoring and assessment ensure high-quality teaching and sustained pupil progress.

Implementation - How do we achieve our aims?

Our Curriculum

Our curriculum design is deliberately structured so children deepen both what they know (**substantive knowledge**) and how they think and work scientifically (**disciplinary knowledge**) while linking classroom science to real-world contexts and careers. Scientific enquiry is developed through the consistent teaching of Working Scientifically skills across all units. Children regularly ask questions, make predictions, carry out investigations, record and analyse results, and draw conclusions.

Key Concepts



Biology



Chemistry



Physics



Working Scientifically

A Consistent Approach

In our Key Stage 1 and 2 classrooms there is a designated Science display which acts as a focal point to support learning and to recap previous learning. A wide variety of differentiated resources are specifically selected to help develop children's scientific knowledge and abilities to investigate. The topics taught in Science can be categorized into the following concepts, as outlined below, and some concepts are revisited over the primary curriculum building on prior knowledge to deepen understanding.



Forces & Magnets



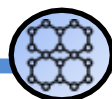
Light



Earth Space & Seasons



Living Things & their Habitats



Materials & States of Matter



Plants



Animals Including Humans



Evolution & Inheritance

Strong Foundations

In the EYFS, Science is mainly taught through **Understanding the World**, where children explore the natural world, materials, and how things work. It is supported by Communication and Language, Mathematics, and Physical Development, as children **observe, question, measure and investigate their environment**. In the EYFS, children learn about plants, animals, weather, materials and change, while developing skills such as observing, asking questions, comparing and using simple tools. This is taught through **play-based, hands-on** activities, outdoor learning, and adult-led and child-initiated exploration.

Development of Key Skills

The key skills in Science are taught through **regular**, structured enquiries in every unit and are carefully sequenced so children **revisit** and **build** on them each year, becoming more confident and independent in working scientifically. Observing, questioning, predicting, investigating, measuring, recording, and drawing conclusions—are developed through practical, structured enquiries. For example, children observe plant growth, predict outcomes in experiments, measure and record results, and analyse data to draw conclusions.

Implementation (continued)



Culture Capital

Throughout our curriculum there are a number of trips and events that are planned to **enhance** the science topics that are studied. Off site visits not only enhance learning but provide **first hand experiences** that enable our children to apply and develop their understanding. The use of our outside area and growing allotments enable children to explore habitats, observe seasonal changes and grow plants.



Working Scientifically

Our Science curriculum offers opportunities for **inquiry-led learning** using different types of scientific enquiry (see below). Children investigate key questions and, for some enquiry types, follow a process of stating predictions, carrying out tests/observations, recording results, analysing data, and drawing conclusions. From Year Three children begin to consider how to conduct a fair test. To support the development of scientific enquiry teachers are guided by the National Curriculum programs of study.



Identifying, Classifying & Grouping



Pattern Seeking



Observing Over Time



Comparative & Fair Testing



Researching Using Secondary Sources



Reading in Science Lessons

Each term class libraries are resourced with a range of fiction and non-fiction books that reflect the new science topic. For example; in Key Stage One children study The Snail and the Whale in English which compliments the science learning where children study different habitats. In addition, the children have access to the school library that has a range of scientific fiction and non-fiction to support learning.



Impact - How will we know we achieved our aims?



Children can use scientific knowledge to explain phenomena in the world around them.

Children can ask questions and show curiosity, developing a habit of thinking scientifically.



Children can plan and carry out investigations, including fair tests and practical experiments.



Children can make predictions and explain their reasoning, linking ideas to evidence.



Children can analyse findings, draw conclusions and use scientific vocabulary confidently in discussion and writing.



Teacher Support

To further improve children's outcomes, we provide many opportunities for staff to improve their **science pedagogy** and teachers follow the progression outlined in **Developing Experts**. Specific areas of development are addressed, in line with the School Development Plan, through **whole staff training** sessions, forming **small working parties** or **individually** supported by the science lead. Integral to raising children's outcomes the Science Lead supports teachers with planning to ensure that **teaching is progressive and challenging**.



Enrichment Opportunities

Throughout the year, children are given the opportunity to join a wide range of scientific clubs, for example: computing coding club, gardening or science club. We also plan whole school science days and themed weeks- such as aspirations week.



Strong Vocabulary Development

Teachers introduce key scientific vocabulary at **specific points** in the learning sequence to enable children to fully understand their meaning and to support children's communication. **Working walls** in classrooms display key vocabulary to help consolidate meaning and support children when writing their observations and conclusions. At all times adults act as **role models** using diagrams, models, and real objects to connect terms with tangible examples to develop children's scientific understanding.