

Science at Birchfield School

"Remember to look up at the stars and not down at your feet. Try to make sense of what you see and wonder about what makes the universe exist."

Stephen Hawking

Intent:

At Birchfield, we aim to provide a Science curriculum which enables pupils to develop a deeper understanding of the world we live in. We aim to deliver stimulating science lessons which nurture children's natural curiosity and develop their knowledge and skills in the subject. To achieve this, children learn about scientific phenomena and real-world problems and apply their developing scientific skills. The Science curriculum promotes questioning, challenge, working practically, investigating, evaluating, making choices, working independently and using scientific vocabulary. Children develop an understanding of how important and relevant science is to their lives, now and in the future.

Our teaching aims to build on fundamental scientific knowledge and concepts that can be added to and developed each year. Students are encouraged to understand how science can be used to explain what is occurring, predict how things will behave and analyse what they observe or record. Pupils are exposed to key scientific vocabulary, increasing their knowledge and understanding of the content of their learning. We aim to develop our pupils' ideas and scientific thinking by allowing them to investigate and study the environment and world around them.

Implementation:

We implement a curriculum that is progressive in knowledge and skills throughout the school. We use both the EYFS (Early Years Foundation Stage) framework and the National Curriculum to shape the content and expectations of our curriculum. Subject content is carefully sequenced to best suit the needs of our children and to complement effective learning strategies. Our Science curriculum design is informed by our knowledge of how children can learn more and remember more. This includes the use of spaced practice, Interleaving and retrieval.

At the beginning of each unit, reference will be made to what has been previously learnt to elicit prior knowledge and to ensure that where a topic has been taught previously, prior knowledge is checked, and misconceptions addressed before moving on.

Plans can then be adapted to support learners effectively. 'Awe and wonder' displays encourage the children to ask engaging questions and to promote curiosity. Pupils can then acquire answers through research, learning and testing things out for themselves.

Key scientific language is modelled and taught throughout lessons enabling our children to be familiar with and use key vocabulary accurately. New key terms are introduced carefully with supporting explanations. We are committed to providing engaging, hands-on and practical experiences for all our children. We know that this helps to promote independent learning, curiosity and a love for enquiry and knowledge. Working scientifically is a thread that runs through all units of work however, a specific skill is focused upon for half a term.

Where it is relevant, teachers plan further experiences to enhance the learning. A whole school 'Science Day' for the children runs across the school with children investigating a Science/STEM question. Pupils learn about scientists, make real life links and work through the steps of scientific investigation. The work is displayed across the school and shared with parents.

Impact:

Pupils at Birchfield Primary School experience engaging, high quality science education. By the end of Key Stage Two, all children will have developed scientific enquiry skills in the five key areas: Observing changes over time, noticing patterns, grouping and classifying things, finding things out through secondary sources of information and modelling. Through enrichment opportunities such as workshops, trips and extracurricular activities, children develop the understanding that science has changed our lives and that it is vital to the world's future prosperity. We measure the impact of our curriculum through the following methods:

The impact of the curriculum is measured through:

- Regular, ongoing assessment of the children's written work
- Monitoring by leaders through regular book scrutiny, learning walks, pupil data and pupil voice.
- Moderation against standardised materials
- Achievement in line with age-related expectations
- Readiness for the next stage in their learning

