

## **Science Intent**

At Bolton Brow Primary Academy, we aim to give all children a strong understanding of the world around them and to ignite their sense of excitement and curiosity about science. Science provides the foundation for understanding the world around us. It can not only teach pupils about the world they live in, but also how to study it and make sense of various phenomena. As such, it is a fundamental aspect of all children's learning.

This begins in the Early Years Foundation Stage as Understanding of the World is explored through topic-based learning and following the children's interests, including building cultural capital, for example, through exploring our local area. In KS1 and KS2, science is taught as a discrete subject but cross-curricular links are made wherever possible to provide opportunities for all children to widen their experience of real-world science, giving a meaningful context for learning and ensuring an appreciation of the importance of science and how it affects our lives and futures.

Learning is two-fold: children gain specific science knowledge and develop the 'working scientifically' skills to enable them to think like scientists. Through adherence to our planned teaching sequence, which includes a half term per year dedicated to identifying any knowledge gaps or additional opportunities to build working scientifically skills, we will not only ensure statutory compliance with the national curriculum, but also that all pupils have a solid grounding in science that builds up over time, and that children gain a positive attitude towards scientific knowledge and experimental processes.

## **Implementation**

Our Science curriculum follows the requirements set by the National Curriculum and is planned to ensure that children return to and revisit knowledge throughout their time at school: developing deeper understanding over time, embedding knowledge into long-term memory and allowing children to build on previous learning. For example, children explore plants in the EYFS, revisit them in KS1 and go into further depth in KS2. Returning to topics that children already have some understanding of serves to enthuse them and sustain their interest, encouraging them to adopt a scientific mindset of there always being more to find out and explore.

Whenever possible, science is taught with a practical element to make sure children have valuable and exciting first-hand experiences to draw on when developing their understanding of concepts. Opportunities to build cultural capital are planned for through first-hand experiences such as trips, visitors and teaching about current or relevant scientific discoveries or content.

Teaching staff understand the importance of progression of 'working scientifically' skills and opportunities to acquire, practise and improve them are planned for in every science lesson.

They key 'working scientifically' skills are identified as:

- Asking scientific questions and recognising that they can be answered in different ways;
- Making observations and taking measurements;
- Engaging in practical enquiry to answer questions;
- Recording and presenting evidence;
- Answering questions and concluding;
- Evaluating and raising further questions and predictions;
- Communicating findings.

Specialist vocabulary for topics is taught, used and built up over time and children are encouraged to recognise the power of rational explanation and scientific questioning.

## **Impact**

The science curriculum is high-quality and planned to demonstrate progression in terms of age-related expectations. We measure impact in the Early Years Foundation Stage through ongoing teacher assessment against the Development Matters document, observations, and practitioner questioning and discussion, in line with best practice in the EYFS. In

KS1 and KS2, impact is assessed through ongoing teacher assessment against the working scientifically progression document, low-stakes testing, tracking of knowledge in pre-and post-learning quizzes and pupil discussions about their learning. Teaching staff look for misconceptions, gaps in understanding and skills in need of practice, accounting for these when planning and giving pupils opportunities to reflect metacognitively on their learning and act on their findings and feedback.

Our curriculum aims to teach science in practical, exciting and engaging ways that allow pupils to develop sound knowledge of scientific concepts through the underpinning development of the working scientifically skills, meaning pupils leave Bolton Brow Primary Academy with a sound scientific knowledge and skills base, well-prepared for the next phase of their education.