

Science – Intent, Implementation and Impact

“Science is the great engine of change. It is a powerful tool to build a better life for humankind.”

Abdul Kalam

Science - Intent

At Thwaites School we recognise and value the importance of science and scientific enquiry. Science at Thwaites School aims to develop a fun, practical and engaging high-quality curriculum that inspires the next generation to succeed and excel in science. We do this through fully adhering to the aims of the National Curriculum, fostering a healthy curiosity and interest in the sciences and providing science and technology related enrichment opportunities for all children through trips and visits from a local organisation of experts. At the heart of our progressive science curriculum is scientific investigation. Wherever possible we intend to deliver lessons where children learn through varied investigations, leading to them being equipped for life to ask and answer scientific questions about the world around them. We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes. Throughout the programmes of study, the children will acquire and develop the key knowledge that has been identified within each unit and across each year group, as well as the application of scientific skills. We ensure that the Working Scientifically skills are built-on and developed throughout children’s time at Thwaites, so that they can apply their knowledge of science when using equipment, conducting experiments and investigations, building arguments and explaining concepts confidently, being familiar with scientific terminology and, most importantly, to continue to ask questions and be curious about their surroundings.

Science – Implementation

The acquisition of key scientific knowledge is an integral part of our science lessons. Linked knowledge organisers enable children to learn and retain the important, useful and powerful vocabulary and knowledge contained within each unit. The progression of skills for working scientifically are developed through the year groups and scientific enquiry skills are of key importance within lessons. Across both key stages, we revisit the Golden Thread, ‘Water Studies’ which can also be found in the geography curriculum, linking the two intrinsically. At Thwaites School, teachers create a positive attitude to science

learning within their classrooms and reinforce an expectation that all children are capable of achieving high standards in science. Science is taught, planned and arranged into themed blocks from early years through to the end of KS2. At Thwaites, our strategy is to enable all children to be catered for through adapted planning suited to their abilities. We plan for problem solving and real-life opportunities that enable children to find out for themselves. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. Planning involves teachers creating practical, engaging lessons with opportunities for precise questioning in class to test conceptual knowledge and skills, and assess children regularly to identify those children with gaps in learning. Our curriculum is progressive. We build upon the learning and skill development of the previous years, which is tested at the beginning of each topic. Working Scientifically skills are embedded into lessons to ensure these skills are being developed throughout the children's school career, and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in keeping with the topics. Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding and find opportunities to develop children's understanding of their surroundings by accessing outdoor learning in our local area and attending workshops with experts.

Science - Impact

The successful approach to the teaching of science at Thwaites School results in a fun, engaging, high quality science education, that provides all children with the foundations for understanding the world that they can take with them once they complete their primary education. Children will know more, remember more and understand more about the curriculum, retain prior-learning and explicitly make connections between what they have previously learned and what they are currently learning. All children will have a wider variety of skills linked to both scientific knowledge and understanding, and scientific enquiry/investigative skills, a richer vocabulary which will enable them to articulate their understanding of taught concepts and a confidence and a love of learning for science.

