Temple Herdewyke Primary School and Nursery

Science Intent, Implementation and Impact Statement

Intent

Temple Herdewyke Primary School and Nursery recognises and values the importance of science and scientific enquiry. We aim to develop a fun, practical and engaging high-quality Science 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 and fostering a healthy curiosity and interest in the sciences.

At Temple Herdewyke Primary School and Nursery, we believe all children should leave primary school with a strong understanding of the world around them. We plan to do this by teaching children the specific skills and knowledge to help them think scientifically and gain an understanding of scientific processes, namely scientific knowledge, methods, processes and uses of science. Including, developing children's understanding of the achievements of scientists, both from the past and present, and the uses and implications of science today and for the future.

Scientific enquiry skills are embedded in each topic the children study. Topics are mostly taught as a half-termly unit with the content being revisited and developed further throughout the children's time at school. For example, topics such as Living Things and Their Habitat are taught in Key Stage One and studied again in further detail throughout Key Stage Two. This model allows children to build upon their prior knowledge and increase their enthusiasm for the topics studied and their surroundings whilst embedding procedural knowledge (use of equipment, conducting experiments/investigation, building arguments and being familiar with scientific terminology) into the long-term memory.

Implementation

At Temple Herdewyke, teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all children can achieve high standards in science. Our whole school approach to the teaching and learning of science involves the following:

• Science will be taught in planned weekly block lessons and focused science days by the class teacher. Whilst Hamilton Trust is our main planning resource, teachers seek inspiration from further afield and are free to design their own lessons to meet the varying needs of their class.

• 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. Teachers plan practical and engaging opportunities for precise questioning in class to test conceptual knowledge and skills and assess children regularly to identify those children with gaps in learning.

• Children have regular opportunities to practise saying and writing scientific explanations to communicate their knowledge and understanding, and to draw conclusions from their scientific enquiries.

• We build upon the learning and skill development of the previous years, which is tested through our 'pre-learning mind-maps' where teachers can identify misconceptions that need addressing. As we have mixed age group classes, our curriculum is designed in a two-year cycle to make sure every topic area is covered.

• New scientific and technical vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in keeping with the topics.

• Pupils learn to use a variety of approaches to answer scientific questions. Teachers promote scientific enquiry in all science lessons. Examples of scientific enquiry include: observing over time, pattern seeking; identifying, classifying and grouping; comparing and fair testing (controlled investigations); and researching and using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data.

• Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and workshops with experts.

• Through enrichment days, such as 'science week', we promote the profile of Science and allow time for the children to freely explore scientific topics.

• Science investigations are shared with school during assemblies and the school newsletter. Pupils show what they have learnt through mind-mapping, presenting to other learners, producing recall posters and through formal assessments.

• Pupil voice is used to further develop the Science curriculum, through questioning of pupils' views and attitudes towards Science, to assess the children's enjoyment of science, and to motivate learners.

Impact

Our monitoring proves that children enjoy being scientists and they have developed a sense of excitement and curiosity for understanding how the world works through the disciplines of biology, chemistry and physics. They have developed a good body of foundational scientific knowledge concepts. They know a range of methods and process to investigate a scientific question and they understand how science is used throughout the world. As scientists, they are confident that they know how science can be used to explain what is occurring, predict how things will behave and analyse causes.