St Peter's CE Primary School

Science Curriculum Statement

At St. Peter's, we encourage children to be inquisitive throughout their time at the school and beyond. We believe that a high quality science education provides the foundations for understanding the world.

The national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live, through investigation, as well as using and applying process skills. The staff at St. Peter's ensure that all children are exposed to high quality teaching and learning experiences, which allow children to explore their outdoor environment and locality, thus developing their scientific enquiry and investigative skills. 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.

In ensuring high standards of teaching and learning, in science, we implement a curriculum that is progressive throughout the whole school. Knowledge and Working Scientifically skills are built-on and developed throughout children's time at the school so that they can apply their knowledge of science when using equipment; conducting experiments; building arguments and explaining concepts confidently and continue to ask questions and be curious about their surroundings.

The national curriculum for science reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. At St. Peter's, science lessons provide a quality and variety of subject specific language to enable the development of children's confident and accurate use of scientific vocabulary and their ability to articulate scientific concepts clearly and precisely. They are encouraged and assisted in making their thinking clear, both to themselves and others, and teachers ensure that pupils build secure foundations by using discussion to probing and remedying their misconceptions. At St. Peter's the children are immersed in scientific vocabulary, which aids children's knowledge and understanding not only of the topic they are studying, but also of the world around them.

We use 'The DFES Science Scheme of work and, 'Understanding of the World' in the Early Years Foundation Stage as well as 'Snap Science' from Collins to help them to inform planning. Teachers are also able to source further support and resources, in line with national pedagogy, from the National Stem Centre. The Association of Science Education's 'Planning Matrices' also informs the key knowledge and skills of each science topic. We have a whole school overview, which ensures all objectives have been covered for each year group and learning is built on as children progress throughout the 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. Our whole school approach to the teaching and learning of science involves adapting and extending the curriculum to match all pupils' needs. Where possible, Science is linked to class topics. Science is taught as discrete units and lessons where needed to ensure coverage.

Through our planning, we involve problem solving/investigational opportunities that allow children to apply their knowledge, and find out answers for themselves. Children are encouraged to ask their own questions. Planning involves teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge.
The children are given opportunities to use their scientific skills and research as well as the scientific knowledge they have gained through lessons in school to help them to discover the answers. This curiosity is celebrated within the classroom.

'Working scientifically' specifies the understanding of the nature, processes and methods of science for each year group and this is embedded within lessons and focuses on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry include the following: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations) and researching using secondary sources. Pupils are given opportunity to seek answers to questions through collecting, analysing and presenting data.

We build upon the knowledge and skill development of the previous years. As the children's knowledge and understanding increases, and they become more proficient
in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.

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. Teachers use precise questioning in class to test conceptual knowledge and skills, and assess pupils regularly to identify those children with gaps in learning, so that all pupils keep up.

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

Our EYFS outdoor area provides many exciting activities and topics to develop children's learning. The children are encouraged to learn through play by providing a variety of continuous provision activities both indoors and outdoors. A wide variety of equipment is available to develop the children's curiosity and understanding of the world. These include, large and small construction activities, dramatic play, clay and dough play, sand and water play. There are many opportunities to explore water in relation to weather – rain – ice – snow e.g. develop vocabulary associated with weather, describe the weather, recognise the need for appropriate clothing and equipment; begin to discover that water can exist in different states. EYFS topics run on a two-year cycle.

As well as teaching science through our topics, we endeavour to create enthusiasm, by holding science days, inviting visits from various people such as a spaceman in school and providing exciting science workshops such as rocket-making, electricity and light.

We have also been involved with a huge international event: a live question and answer link-up with Tim Peake, involving pupils from our school.

Wherever possible, visits to museums, the farm, the zoo and the garden centre, provide further first-hand experiences.

Butterfly school kits, as well as our school fish tank are hugely popular with the children. Not only do they provide awe and wonder but they allow the children to observe various aspects of animal life, including life cycle, behaviour, interaction, growth and change. By caring for other living things, the children develop a sense of responsibility, empathy and sensitivity for living creatures. School staff ensure the animals are always looked after and treated well.