

## Science Curriculum Statement



Subject leader - Tom Wade

### Intent

The 2014 National Curriculum for Science aims to ensure that all children:

- \*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 skills required to understand the uses and implications of science, today and for the future. We understand that it is important for lessons to have a skills-based focus, and that the knowledge can be taught through this.

At Place Farm, we encourage children to be inquisitive throughout their time at the school and beyond. The Science curriculum fosters a healthy curiosity in children about our universe and promotes respect for the living and non-living. 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 the children's time at the school so that they can apply their knowledge of science (when using equipment), conducting experiments/ investigations, building arguments and explaining concepts confidently and continue to ask questions and be curious about their surroundings. Teachers plan lessons and include the 'Working Scientifically' objectives into their practical planning throughout the course of the year. Teachers also use the 'Curious Scientist' programme written by science leads within the Trust to develop pupil curiosity and to give pupils a chance to plan, investigate and evaluate their own investigations using their own resources and scientific ideas.

## Implementation

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. This is promoted and encouraged in the children's individual science books on a weekly basis.

Our whole school approach to the teaching and learning of science involves the following;

\*Science will be taught in planned and arranged in topic blocks by the class teacher. Science is a core subject and is taught weekly from Years One - Six. Where possible, teachers make links to their termly Project learning, however, where this is not possible, our teachers teach science as a stand-alone subject making cross - curricular links to core subjects where possible. This is a strategy to enable the achievement of a greater depth of knowledge in science.

\*Through our planning, we involve sufficient challenge and questions to develop pupils' scientific curiosity. 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 engaging lessons, often involving resources to aid understanding of conceptual knowledge. Teachers use precise questioning in class to test conceptual knowledge and skills. Teachers assess through pre and post assessments and mini quizzes based on vocabulary and terminology from their half-termly Knowledge Organiser. These assessments help to identify gaps in children's learning regularly to identify those children with gaps in their learning, so that all children keep up and so that gaps are rectified. Teachers also use knowledge strips to help the children to remember key information and to aid pupils in their independent tasks.

\*We build upon the learning 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 find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and speaking with experts from other schools in the Unity School Partnership.

\*Regular events, such as British Science Week or days and assemblies focussed on involving other local companies such as the British Antarctica Survey (based in Cambridge) or the Cambridge University (Philosophy for Science- pilot study) allow year groups to provide broader provision and the acquisition and application of knowledge and skills.

### Impact

The successful approach at Place Farm Primary Academy results in a fun, engaging, high-quality science education, that provides children with the foundations and knowledge for understanding the world. Through various whole school assemblies, trips and events, such as British Science Week, our children have the understanding that science has changed our lives and that it is vital to the world's future prosperity. Children learn the possibilities for careers in science, as a result of our connection with: schools in our Unity School Partnership, STEM, Explorify and Pixl and learn from and work with professionals, ensuring that children have access to positive role models within the field of science from the immediate and wider local community. From this exposure to a range of different scientists from various backgrounds, all children feel they are scientists and capable of achieving. Children at Place Farm Primary Academy overwhelmingly enjoy science and this results in motivated learners with sound scientific understanding.