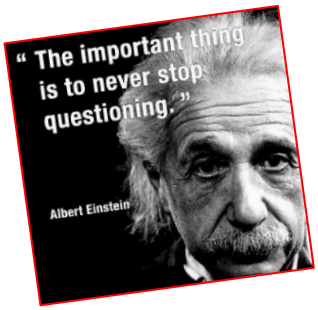
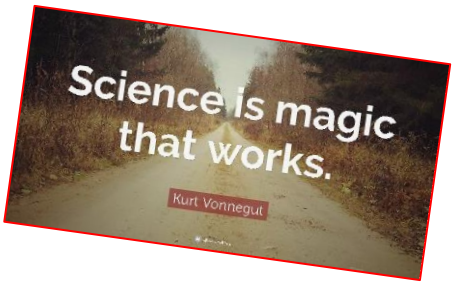
Sir John Offley CE (VC) Primary School

'With God all things are possible'



"The Science of today is the technology of tomorrow"
Edward Teller



Intent:

At Sir John Offley we endeavour to provide all children with a purposeful, progressive, language rich science curriculum, embedded with high-quality scientific texts that are engaging and inclusive of all. This encourages children to be inquisitive throughout their time at the school and beyond.

We work hard to provide a rich and varied curriculum to challenge and meet the needs, abilities and interests of our children. Teachers plans and are based on the progressive curriculum maps that encompass a wide variety of high-quality fiction and non-fiction topic related text that is unique to our school and our children's needs. We have identified that our children benefit from hands on learning, exposure to a wide range of vocabulary and opportunities for discussion and interaction so we endeavour to keep this at the heart of the development of our science curriculum

We strive to ensure all learners, including vulnerable and disadvantaged pupils, develop their scientific knowledge and understanding through providing children with a wealth of high-quality, hands on enquiries and by seeking out every opportunity to use our local environment to enhance the curriculum. We ensure that the 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 inquisitive about their surroundings.

A range of scientists, who have shaped the world we live in today, are studied throughout the year groups and their contributions to our modern day lives discussed. Through this we aim to develop a curiosity and interest in the nature, process and methods of science and as a result create learners who are equipped with the skills and knowledge to help them understand how science can affect our lives today and in the future.

We monitor our schools progress in science regularly in line with our science policy.

Implementation:

Starting in EYFS, our children are given lots of opportunities to explore and investigate, through first hand exploration in the outdoor environment. We aim to develop lively, enquiring minds. Science is taught through the areas of learning in accordance with the EYFS document and the National Curriculum for KS1 and KS2. Topics are carefully planned in sequence to ensure new learning is built upon prior knowledge and experiences.

Teachers maintain a high level of scientific subject knowledge, as they are provided with regular opportunities to enhance their subject knowledge, share good practice and collaborate on planning. As well as this, teachers are encouraged to share expertise, team teach lessons where appropriate and make use of online expert demonstrations.

We design our Science topics to help develop an understanding of the world that we live in and aims to stimulate a child's curiosity to find out how and why things happen in the way they do. We encourage methods of enquiry and investigation to inspire creative thought. Children learn to ask scientific questions and are encouraged to engage in questioning and discussion about science-based issues which affect their lives, the society in which they live and the world as a whole.

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.

The objectives of teaching science at Sir John Offley are to enable children to:

- ask and answer scientific questions
- actively explore the environment
- plan and carry out scientific investigations
- evaluate evidence, and present their conclusions clearly and accurately
- build upon the learning and skill development of the previous years
- engage with problem solving activities that allow children to find things out for themselves

At Sir John Offley, we strongly encourage all pupils to use specific topic related vocabulary. Quizzes are used at the start of every lesson to revise prior learning, reinforce key vocabulary, information and concepts, and correct misunderstandings. This regular revision of key knowledge allows pupils time to embed this into their long-term memory. Using these techniques to assess learning enables teachers to tailor lessons to emerging needs, helping us plan for next steps. Key facts are also revised every science lesson through the use of Knowledge Organisers that contain key vocabulary, sticky knowledge and information about significant individuals from that scientific field.

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 and hands on experiences. This is developed through the years, in-keeping with the topics. We use precise questioning in class to test conceptual knowledge and skills, and assess children regularly to identify those children with gaps in learning. We are a well-equipped and resourced school.

During science lessons, pupils work with a range of tools, equipment and materials during practical activities. Some of these may be unfamiliar, and so the teaching of health and safety is paramount. Our pupils are taught to use all equipment safely, and approach potential hazards with low levels of risk. When necessary, risk assessments are completed by the class teacher.

Impact:

The successful approach at Sir John Offley results in a fun, engaging, high-quality science education that provides children with the foundations and knowledge for understanding the world. Children at Sir John Offley overwhelmingly enjoy science and this results in motivated learners with sound scientific understanding.

Our engagement with the natural environment ensures that children learn through varied and first hand experiences of the world around them. Frequent, continuous and progressive learning outside the classroom is embedded throughout the science curriculum. Through our high-quality science texts, annual science week and strong links with our local community, children learn the possibilities for careers in science, and develop the understanding that science has changed our lives and that it is vital to the world's future prosperity.

By the end of KS2, we aim for our young scientists to have developed inquisitive minds, critical thinking skills and a thirst for knowledge. They should have problem solving skills to a variety of situations with increasing proficiency, including in unfamiliar contexts and to model real-life scenarios. They should have a passion for the conservation of our local area and feel confident in using scientific knowledge to discuss significant scientific issues which affect our lives today and in the future.

There is a clear progression of children's work and teachers' expectations in our school and children's work shows a range of topics and evidence of the curriculum coverage for all science topics. Children are becoming increasingly independent in science, selecting their own tools and materials, completing pupil lead investigations.