



'A curious mind is never bored.' (Min Kim)

In today's fast paced world, there is often too little time to sit back and wonder but the world around us is full of marvels and mysteries; from unexplored oceans and unexplained phenomenon to medical innovations and space travel. Science gives us the skills for exploring anything and everything in the physical and natural world and helps us to understand it; we learn how to ask good questions, suggest possible explanations and then test ideas to see if they make sense.

Scientific study not only helps learners develop important knowledge of the physical world, it invites us to question and reason and ponder and discuss. These skills, whether they are developed through playing with magnets or observing changes in the weather or simply reading a book, can help us in every aspect of our lives.

A well rounded Science education paves the way for children to become engineers, doctors, nurses, researchers, pharmacists, technicians, teachers, veterinarians, chefs, sports therapists, personal trainers and even fashion designers but, perhaps even more importantly, it fosters curiosity and a curious mind is never bored.

INTENT

At Woodhall, we aim to provide a happy, safe, nurturing and caring environment and atmosphere for all; a broad, balanced curriculum; an enriching programme of extra-curricular activities, events and visits; and promote healthy, active lifestyles.

In Nursery and Reception, teachers facilitate foundational experiences in Science which act as a springboard for our children's learning throughout their lives.

In Key Stage 1 and 2, Science is taught as a discrete subject as part of larger cross-curricular themes. Objectives are carefully plotted throughout the year to develop knowledge and skills in Science and to also tie into wider contextual learning. We use the Science Subject Ladder ([INSERT HYPERLINK](#)), based on the National Curriculum objectives, for clear progression and skills development in knowledge, working scientifically and subject specific vocabulary throughout the school. Class teachers use this document to create long term plans to ensure coverage, skills progression and links to other subjects where applicable.

South Oxhey is an area of significant socio-economic deprivation. Many of our children have a high level of need and limited experiences. Our children are energetic and enthusiastic and it is our job to pique their curiosity and use their interests to channel that energy into their learning. As a result, our curriculum is closely tailored to meet the specific needs of our school community; we want to envelope them with as many scientific experiences as we can.

We are dedicated to providing a challenging, engaging and language-rich programme of studies across the curriculum to help raise our standards in Science, give our children a wider understanding of the world around them and better prepare them for the future. To support this goal, we use our extensive grounds, our school kitchen and our practical Science resources to make learning relevant and accessible to all children. Moreover, the curriculum is enriched through themed assemblies, relevant class trips (the Science Museum), visits (the local optician) and workshops (Set Point Bubbles workshop and Herts Catering Healthy Eating workshop).

Science Topic Boxes are available for each year group. They contain a mixture of age appropriate equipment, visual aids and reading materials. They have been carefully organised by year group and each strand of the Science Curriculum to ensure a clear progression of skills and equipment use. An extensive range of Working Scientifically equipment from microscopes to stopwatches, pipettes and test tubes are stored centrally and available for all year groups to utilise.

In every classroom, age-appropriate Working Scientifically vocabulary is displayed and a selection of relevant books, newspapers and magazines are available on the bookshelves and even more reference books are available in the School Library. These resources help further our children's reading and develop incidental conversation, interest and awareness of Science. We also share relevant resources and links in the Science Area of the Woodhall School Website so children and parents can revisit key concepts.

IMPLEMENTATION

In the Foundation Stage, children explore the Early Learning Goal 'Knowledge and Understanding of the World' through general play with water and sand, spending time outside in nature to experience plants, wildlife, the changes in the seasons and weather and also specific topic work such as 'The Dinosaur Museum' or 'Buildings and Builders'.

The Key Stage 1 and 2 National Curriculum for Science is quite prescriptive and outlines what topics should be taught in each year group. Our Science Subject Ladder further breaks down the working scientifically skills so children's learning can be developed year on year. Science lessons are taught regularly to ensure familiarity and fluency but some topics lend themselves to a block of learning and might be carried out over a day or every afternoon for a week (for example; tracing shadows on the playground at different times of the day or measuring the growth of a beansprout).

Teachers ensure that all lessons are varied and dynamic; we try to use real life materials and offer practical experiences wherever possible. Rich cross-curricular connections are provided to ensure Science learning is contextual and relevant. For example, Year Two learn about the explorer Neil Armstrong in History lessons, create rocket ships in Art and explore materials in Science to design a weatherproof space suit. In Year Four, the Science unit on Electricity is nicely linked to making a working torch in D.T. and investigating the life of inventor Thomas Edison.

We take pride in our Science learning; work in books and on display around school is of high quality for every level of learner. Learning is recorded in a variety of ways, such as; annotated drawings, extended writing, charts and tables, diagrams, formal investigations, photographs and the use of ICT and science lessons also develop a wide range of transferable skills including reading, extended writing, measuring and statistical analysis. In addition, we are developing our children's oracy in Science; giving them the tools to share their understanding, ask questions and explain concepts and processes to others.

Teachers apply thoughtful differentiation in each lesson, whether that be by activity, support or outcome; we provide scaffolding and challenge for all levels of learners. SEND children often have personalised strategies, support and resources during Science lessons and the teachers can use the Science Subject Ladder to track back, fill gaps and help all children access new learning.

Woodhall provides opportunities for children to explore, investigate and be awestruck whilst still developing rigorous scientific methodology. We have designed our own Key stage 1, Lower Key Stage 2 and Upper Key Stage 2 fair test resources to formalise the investigation process. These resources ensure that all children can develop an understanding of how to ask questions, make predictions, plan fair investigations, carry out tests safely, record their results clearly and analyse their findings as part of a conclusion at an age appropriate level and how each stage of the investigation links to the next. From Year 2 onwards, each year group completes at least one entire investigation from start to finish.

Additionally, we recognise nationally significant events such as British Science Week, Ada Lovelace Day, Healthy Eating Week through assemblies, workshops, school-wide competitions, themed days and group work. Our successes are shared with our wider community on the Woodhall School website to help engage and raise awareness of Science learning to parents. What is more, we invite parents to support their children by attending class assemblies, trips and workshops and support them in any Science homework projects.

Our Science leader has joined several national organisations to ensure we are up-to-date with current discussion around Science education and that our provision is meaningful, enriched and evolving. These organisations include

STEM, ASE (Association of Science Educators, BSA (British Science Association) and PSTT (Primary Science Teachers Trust). We are also building links with other local institutions such as secondary schools, the local optician and doctor's surgery.

IMPACT

Teacher Assessment in Science is reported at the end of each Key Stage. Achievement in Science is closely monitored in each class by the teacher and overseen throughout the school by the Science Leader. As a topic is being taught, teachers make careful observations about each child and assess their knowledge and understanding against the Progression Document and this is recorded in the Woodhall Science Assessment Tool.

If the child has not achieved the majority of the objectives in a particular strand of learning, a score of 0 is given, if the majority have been met a 1 and if all have been achieved or excellent subject knowledge of skill has been displayed in a particular area, the child may be awarded a 2. The teacher updates each strand as it has been taught and the Tool collates achievement across each strand for each year group and helps the teacher record and analyse achievement for each child and their class as a whole. The Science leader can then scrutinise this information for trends and areas of development. The achievement of vulnerable groups such as SEND, PPG or EAL children are monitored closely to ensure their progress is in line with their peers. Where there is a large disparity, the Science Lead works alongside teachers to help provide resources, support and help narrow the gap.

The Science Leader is also responsible for collating evidence of the impact of the Science Teaching and Learning providing feedback to all stakeholders; the teachers, the SLT, the Governing Body and outside agencies including Ofsted and the Hertfordshire Improvement Partner.

Evidence is collected regularly through pupil voice, lesson observations, work and planning scrutiny and learning walks. During each monitoring cycle, the Science Leader looks for appropriate coverage for that particular point in the year, high quality work being produced over a range of activities, thoughtful differentiation and care and attention over tasks from both teacher and pupil.

Following the monitoring activities, the Science Leader summarises the strengths and weaknesses of the subject and puts actions in place to move the provision on; that could be through staff training, team teaching or planning, advisor visits, use of specific resources or even through whole school events. These actions are then evaluated and analysed for impact.

As educators, we are self-reflective and recognise the invaluable benefit of a strong start to Science education. We are committed to moving our Science provision on and providing the best possible outcomes for our budding Scientists!

