



At Holmer Green Junior School the science curriculum aims to enrich the children's understanding of the world by helping them to recognise the impact of science on all aspects of their lives, including culture, society and technology. We want the students to have an appreciation of the different strands of science as well as an understanding of how they are connected.

Our aim is to develop a natural curiosity for the sciences and allow children to have the opportunity to question, explore and think critically, while working scientifically, about how the world operates. We want children to appreciate how science interacts with the other foundation subjects and its significance within history, geography and religion, enabling children to form and justify their own view of how the world operates. Our aim is to build science capital for all our children, regardless of their background and starting point so that they are inspired to continue to use science in their everyday life, future education and careers.

Our children will recognise how science can be used to explain what is happening around them, both natural and otherwise, and to predict how things will behave as well as possessing the skills to analyse the cause and effect of such events. This will develop through a broad range of scientific enquiries. We intend to foster social and emotional growth through developing a greater understanding of topical issues related to science and to build upon this understanding to better the health and wellbeing of our children. We aim to foster a thirst for discovery and sense of curiosity and excitement about natural phenomena within each and every child. Our pupils will recognise the doors that a strong understanding of science opens for them in the future.

We endeavour to make lessons thought provoking and inspiring, leading children to wonder, ask questions, research and then discuss their learning at home. Ultimately, we aspire to ensure the children become successful, confident learners, enjoying the process of exploring values and ideas through science.

The National Curriculum aims

- 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

#### **Inclusion (e.g. EAL/SEN/PP/Provision for AMA)**

In school we aim to meet the needs of all our children by differentiation and the use of hard harder and hardest tasks in our science planning and in providing a variety of approaches and tasks appropriate to ability levels. This involves providing opportunities for SEND children to complete their own projects, with scaffolds and support, to develop speech and language skills, as well as scientific skills and knowledge. This will enable children with learning and/or physical difficulties to take an active part in scientific learning and practical activities and investigations and to achieve the goals they have been set. Some children will require closer supervision and more adult support to allow them to progress whilst more able children will be extended through differentiated and the use of hardest activities. By being given enhancing, application tasks and enriching activities, more able children will be able to progress to a higher level of knowledge and understanding appropriate to their abilities. Teachers will use the school's inclusion planning key to ensure

that a range of strategies are used which include and motivate all learners, ensuring that optimum progress is made throughout each part of the lesson

### **Implementation**

At Holmer Green Junior School we create a positive attitude towards science learning within the classroom and reinforce an expectation that all pupils are capable of achieving high standards in science.

The curriculum is led and overseen by the science curriculum leader, who will regularly monitor, evaluate and review science teaching and learning as well as celebrating and sharing good practice. Formative assessments will be integrated into every day science teaching to ensure teachers have an in-depth knowledge of the children's learning and inform their next steps. The use of assessment opportunities within lessons will inform termly assessments and allow for long term memory development and secure understanding of skills.

Science will be taught in arranged topic blocks. The order of these is stated in the long term plan where cross curricular links have been made to ensure optimal learning opportunities. The content of these topics is pupil led through questioning at the start of the topic. The use of KWL grids help to inform planning within the topic and knowledge organisers help shape the learning journey.

Existing knowledge is checked at the beginning of each topic through the use of a KWL grid. This ensures that teaching is informed by the children's existing understanding and that it takes account of pupil voice, incorporating children's interests.

Through our planning, we involve problem solving opportunities in conjunction with the maths mastery approach. This will allow children to explore and apply their knowledge, encouraging them to find out answers 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. ICT resources will support this. Their curiosity is celebrated within the classroom and all teachers encourage children to recognise their potential and further social and emotional growth.

Planning involves teachers creating engaging lessons involving high-quality resources to aid understanding of conceptual knowledge. Tasks are designed to provide appropriate challenge to all learners, in line with the school's commitment to inclusion. Teachers use questioning in class to test conceptual knowledge and skills and assess pupils regularly to identify those children with gaps in learning.

As the children's knowledge and understanding develops, they become more proficient in using scientific equipment, collating and interpreting results and in their ability to come to conclusions based on real evidence.

Working Scientifically skills are embedded into lessons to ensure that skills are systematically 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.

We use visitors and workshops to stimulate the children's interest in all areas of science and to develop their understanding of science in the wider world. These are purposeful and link with the knowledge being taught in class.

Teachers will find opportunities to develop children's understanding of their surroundings by accessing outdoor learning.

Lessons have a link to SMSC to enhance the children's awareness of the wider and current world and how science is impacted by it.

Regular events, such as Science Week provide broader provision and the acquisition and application of knowledge and skills. When possible, these events involve the wider community.

Our children are encouraged to see themselves as scientists of the future through a celebration of multi-cultural scientists throughout the curriculum.

## Impact

Our approach to science at Holmer Green results in an engaging, high-quality science education that enriches the children's understanding of the world. We provide children with varied opportunities to experience science in the world around them through creative planning and purposeful experiences. Our children have the understanding that science has changed their lives and that it is vital to the world's future prosperity.

Through our approach, we foster curiosity and a thirst for discovery in every child regardless of their individual needs. Through exposure to positive role models within the field of science from various backgrounds, all children feel that they can be scientists and are capable of changing the world.

Our curriculum meets the needs of all of our children, including disadvantaged pupils and those with SEND. Children at Holmer Green enjoy science and this results in motivated learners with sound scientific understanding who are confident working scientifically. Pupil voice leads our science curriculum forward through questioning of pupil's views and analysing attitudes to science. This works alongside observations of learning experiences and a rigorous analysis of data to ensure high quality science learning.

Our children:

- Children will become resilient, independent and curious scientists who ask questions and find things out for themselves.
- Science will be a high profile subject throughout the school.
- Children will be enthusiastic and motivated scientific learners.
- The outdoor areas will be incorporated into lessons.
- Children will have an awareness of the full range of scientific careers and pathways available to them and will be keen to pursue STEM subjects at secondary school.
- Children will leave for secondary school equipped with the science knowledge and skills needed to succeed in their further education.

Our children will believe that ***“if you are not prepared to be wrong, you will never come up with anything original.”*** Albert Einstein

