

Science



Intent

Our aim is to ensure that all pupils develop a lifelong love of science and an inquisitive attitude towards all aspects of science, by;

- developing an in-depth scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- developing understanding of the nature, processes and methods of science through different types of science enquiries that encourage them to ask and to help them answer scientific questions about the world around them.
- ensuring children are equipped with the scientific skills required to understand the uses and implications of science, today and for the future.

At Dudley House we encourage children to be inquisitive throughout their time at the school and beyond.

Our Science curriculum will foster a healthy curiosity in children about our universe and promote respect for living and non-living things.

We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes.

Implementation

Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all pupils are capable of achieving high standards in science.

We implement the Chris Quigley Essentials Science Curriculum (based on the National Curriculum) that is progressive throughout the whole school, to ensure high standards of teaching and learning in Science.

Science is planned around a series of themes, wherever possible, so that children are given meaningful contexts to develop the threshold concepts. However, where this is not possible Science is offered as a discrete subject. The units for Science are set out in the 2-year long term curriculum plan for each mixed aged class.

Existing knowledge is checked at the beginning of each unit and children are encouraged to think of relevant questions they would like answers to. Teachers then plan a sequence of learning for Science, where they develop understanding of the subject's big ideas (threshold concepts) and semantic and procedural knowledge for the specific milestone statements for each age group. Teachers know the children extremely well and tailor learning to meet the needs and interests of the children in their class.

Progression is ensured by pupils developing their knowledge and understanding of key concepts through three age specific milestones as they progress through the school.

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.

Teachers create engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge.

Problem solving opportunities are incorporated so that children apply their knowledge, and find out answers for themselves. Children are encouraged to ask their own questions and are given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom.

Teachers use precise questioning in class to test conceptual knowledge and skills, and assess pupils regularly to identify and address misconceptions and reinforce concepts.

Throughout each topic, key knowledge is checked by the teacher and consolidated as necessary.

Children are offered a wide range of extra-curricular activities, visits, trips and visitors to complement and enhance the curriculum. These are purposeful and link with the knowledge being taught in class.

Regular events such as Science day, or events such as pond dipping, farm visit, Gravity Fields, provide broader provision along with the acquisition and application of knowledge and skills.

Science in EYFS

In EYFS, this falls under the umbrella heading of 'Understanding the World'.

The pupils are supported, through child-initiated and adult led activities, to develop the knowledge and understanding that helps them to make sense of the world and environments around them. This involves guiding children to make sense of things through opportunities to explore, observe and experience.

The three 'characteristics of effective teaching and learning' ensure that practitioners consider the different ways that the children learn and reflect these in their planning and practise.

Impact

High quality science teaching at Dudley House School provides children with a wide variety of experiences and opportunities to develop their scientific knowledge and understanding of the world. This results in motivated, inquisitive and confident learners who continue their learning outside the classroom.

Children learn through a wide variety of first-hand experiences. They feel they are scientists and capable of achieving.

Scientific skills and knowledge are assessed regularly through careful questioning, investigations and assessments.

Planned and regular feedback for learning opportunities are undertaken.

The subject leader monitors progress throughout the school and CPD is planned to secure pedagogy and assessment is secure.