

Science Intent Statement

St Hubert's Mission Statement is at the heart of all our Intent Statements.

Believe to Achieve: Love God, Love Learning, Love One Another.

Science Intent:

At St Hubert's, we recognise the importance of Science in every aspect of daily life. As one of the core subjects taught in Primary Schools, we give the teaching and learning of Science the prominence it requires.

The Scientific area of learning is concerned with increasing pupils' knowledge and understanding of our world, and with developing skills associated with Science as a process of enquiry. It will develop the natural curiosity of the child, encourage respect for living organisms and the physical environment and provide opportunities for critical evaluation of evidence.

At St Hubert's, in conjunction with the aims of the National Curriculum, our science teaching offers opportunities for children to:

- develop scientific knowledge and conceptual understanding as outlined in the National Curriculum
- 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;
- be equipped with the scientific knowledge required to understand the uses and implications of Science, today and for the future.
- develop the essential scientific enquiry skills to deepen their scientific knowledge.
- Use a range of methods to communicate their scientific information and present it in a systematic, scientific manner, including I.C.T., diagrams, graphs and charts.
- Develop a respect for the materials and equipment they handle regarding their own, and other children's safety.
- Develop an enthusiasm and enjoyment of scientific enquiry, learning and discovery.

At St Hubert's:

Children have weekly lessons in Science throughout Key Stage 1 and 2, in line with the wider curriculum school planning. In KS2, our mixed year group classes are split into year groups so that science is streamed.

In Early years, science is taught through the children learning about the world around them in their learning through play, in line with the Understanding the World, Physical Development and Expressive Arts and Design areas of the EYFS Framework. Additional opportunities are provided in Science, Mad Science clubs, whole school science weeks and assemblies to celebrate science in school.

We endeavour to ensure that the Science curriculum we provide will give children the confidence and motivation to continue to further develop their skills into the next stage of their education and life experiences.

How this is implemented:



The Planning for Assessment Scheme provides a structure and skill development for the science curriculum being taught throughout the school. Teachers use the PLAN Knowledge matrices for their units of work.

PLAN Knowledge matrices

	Year	2	Topic	Plants
	- Observe and describe how seeds and bulbs grow into mature plants. - Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.			

Prior learning	Future learning
- Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1 - Plants) - Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 - Plants)	- Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. (Y3 - Plants) - Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. (Y3 - Plants) - Investigate the way in which water is transported within plants. (Y3 - Plants) - Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)

The **'Future learning'** content in each matrix includes all the topic statements from future years that link to the topic that is being taught. Teachers bear this in mind when planning to ensure that they do not stray into content featured in later year-group topics.

At the beginning of a topic, teachers need to know what the children should have already been taught, that this topic builds on. The **'Prior learning'** content in each matrix includes all the topic statements from previous years that link to the topic teachers are about to teach.

Teachers use this information to plan initial activities to remind the pupils of that prior learning and this also helps teachers spot any gaps in learning and misconceptions pupils may have.

PLAN Knowledge matrices

WHAT PUPILS NEED TO KNOW OR DO TO BE SECURE	
Show understanding of a concept using scientific vocabulary correctly	
Key learning	Possible evidence
Plants may grow from either seeds or bulbs. These then germinate and grow into seedlings which then continue to grow into mature plants. These mature plants may have flowers which then develop into seeds, berries, fruits etc. Seeds and bulbs need to be planted outside at particular times of year and they will germinate and grow at different rates. Some plants are better suited to growing in full sun and some grow better in partial or full shade. Plants also need different amounts of water and space to grow well and stay healthy.	• Can describe how plants that they have grown from seeds and bulbs have developed over time • Can identify plants that grew well in different conditions
Key vocabulary	
As for Year 1 plus light, shade, sun, warm, cool, water, grow, healthy	

The **'Key learning'** content in each matrix provides teachers with additional detail to help clarify what their plans need to cover in order for our pupils to be secure.

The **'Key vocabulary'** in each matrix identifies the new words that our pupils need to be using correctly and on a regular basis, orally and in writing, to be secure.

The **'Possible evidence'** gives teachers examples of ways that our pupils might show that they are secure in the knowledge required. These are not the only ways we gather evidence in science.

PLAN Knowledge matrices

Common misconceptions
Some children may think: - plants are not alive as they cannot be seen to move - seeds are not alive - all plants start out as seeds - seeds and bulbs need sunlight to germinate.

‘Common misconceptions’ that pupils may have feature in each matrix to alert teachers to them. Teachers will check that our pupils do not have these misconceptions or ones from earlier linked topics and, if they do, they will provide activities to correct them.

PLAN Knowledge matrices

Apply knowledge in familiar related contexts, including a range of enquiries	
Activities	Possible evidence
- Make close observations of seeds and bulbs. - Classify seeds and bulbs. - Research and plan when and how to plant a range of seeds and bulbs. - Look after the plants as they grow – weeding, thinning, watering etc. - Make close observations and measurements of their plants growing from seeds and bulbs. - Make comparisons between plants as they grow.	- Can spot similarities and difference between bulbs and seeds - Can nurture seeds and bulbs into mature plants identifying the different requirements of different plants

The **‘Activities’** content in each matrix provides teachers with possible activities to do with our pupils that will allow them to acquire the necessary knowledge and demonstrate that they can apply it.

To support the **‘Activities’**, each matrix provides examples of **‘Possible evidence’** that might show that our pupils can securely apply the knowledge they have learnt.

Teachers create a positive attitude to science learning within their classrooms and reinforce an aspirational expectation for all children in their science learning. Our whole school approach to the teaching and learning of science involves the following;

- 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.

- Skills in Working Scientifically are embedded into lessons to ensure these skills are being developed throughout the children's school journey and new vocabulary and challenging concepts are introduced through direct teaching. This is further developed through the year groups alongside the topics.
- Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding and encourage children to engage inquisitively with resources. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and workshops with experts.

Impact of Science at St Hubert's:

The successful approach at St Hubert's results in a fun, engaging, high-quality science education, that provides children with the foundations for understanding the world. Our engagement with the local environment ensures that children learn through varied and first-hand experiences of the world around them. So much of science lends itself to outdoor learning and so we provide children with opportunities to experience this wherever possible. Children are taught to understand that science has changed our lives and that it is vital to the world's progression. Whole school science initiatives such as Science days and after school Mad Science clubs are used to further develop the Science curriculum and enhance children's enjoyment of science.