

# The Horsell Village School



Subject Report 2022 to 2023

Subject	Science (Enquiry and Investigation)	Report prepared by	Kat Morrow
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## Overview of the Year

To ensure that E&I are at the heart of the curriculum in all subjects and that every child has experience a range of investigative science opportunities in their classroom on a regular basis.

## Curriculum

### Intent

Science teaching at The Horsell Village School aims to give all children a strong understanding of the world around them whilst acquiring specific skills and knowledge to help them to think scientifically, to gain an understanding of scientific processes, increase their natural curiosity and also an understanding of the uses and implications of Science, today and for the future. Through an enquiry and investigation approach children become more curious and inquisitive about the world around them.

The National Curriculum will provide a structure and skill development for the science curriculum being taught throughout the school, which linked to topics to provide a creative and balanced programme of study. Working scientifically skills are an essential to deepen their knowledge. These are embedded in each topic the children study and these topics are revisited and developed throughout their time at school. Children 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. Topics, such as 'Plants', are taught in each year group, and supported with a range of investigations, incorporating the key skills of comparative testing, research, observation over time, pattern seeking, identifying grouping and classifying and problem solving within the classroom. This encourages the children to be excited by Science and builds upon their prior knowledge by reviewing their understanding and building on this using logical progression, as detailed in our curriculum progression document. Using carefully chosen topics encourages cross-curricular opportunities, whilst embedding knowledge into the long-term memory. The investigation cycle is used as a way to assess the children's prior knowledge and encourages them to be involved in thinking about how they can discover more.

All children are encouraged to develop and use a range of skills including observations, planning and investigations, as well as being encouraged to question the world around them and become independent learners, gathering evidence and exploring possible answers for their scientific based questions. Specialist vocabulary for topics is taught and built up, and effective open questioning to communicate ideas is key in order to encourage scientific thought and the identification of patterns and relationships. Concepts taught should be reinforced by focusing on the key features of scientific enquiry, so that pupils learn to observe and use a variety of approaches to answer relevant scientific questions.

### Implementation

Through quality teaching of knowledge, skills and vocabulary, all children will be challenged to be inquisitive, compassionate, courageous and creative learners. They will have opportunities to influence their own learning through age appropriate and progressive themes and topics. At the start of topics and each lesson they reflect on what they already know and think about what and how they would like to learn. This is through the investigation cycle which has become embedded in practice in all subjects at The Horsell Village School.. It considers their prior knowledge and the children take an active part in deciding how to find out more, using a range of skills.

Teachers plan through half termly topics, making sure that within each topic there are a number of science investigations, which allow the children to build their range of skills of working scientifically. They use the National Curriculum to teach knowledge through a cycle of lessons for each subject, which carefully plans for progression and depth. Children are challenged through questions which allow them to apply their learning and knowledge, predicting outcomes and analysing their observations. Every lesson starts with a question in order to allow for a more open learning environment and to allow the children to be inquisitive investigators. It also develops opportunities for learning key vocabulary and displaying this knowledge by using the vocabulary to explain thinking and understanding. Children undertake half termly visits or have a visitor that may take a scientific focus such as looking at animals at Marwell Zoo, exploring plants at Wisley plus walking through the local environment to examine the changes in seasons.

We build upon the learning and skill development of the previous years, through the use of the progression document and the national curriculum. 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 effectively predict and come to conclusions based on real evidence.

### Impact

All classes have the Learning Cycle displayed in their classes. This is used to inform planning, in structuring lessons round it's questions, and used throughout the curriculum to prompt investigative thought and reflection.

Teachers will be employing the Learning Cycle in all lessons to gather what children already know, which informs the starting point of the lesson and what to review to ensure embedded knowledge. Learning questions are being used throughout the school so that all learning starts with a question and prompts the children to enquire and investigate to formulate a response.

Children will be more competent in asking questions and thinking about what they would like to find out and what skills and processes they need to use to do so. They will have good knowledge of a variety of scientific skills and will be able to talk about their science learning, with enthusiasm, using the key vocabulary taught.

### 5 Development points for the year

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| 1 | Ensure that the Investigation Cycle is embedded throughout the school, and used as a basis for all lessons.   |
| 2 | Ensure that relevant learning questions are a key element of every lesson throughout the school. Children are encouraged to think and use their knowledge supported by open questioning. Questions are answered using stem sentences. |
| 3 | Pupil voice is frequently sought during each topic, and used to inform future planning.   |
| 4 | A full range of E&I equipment to be available for staff in order to teach Enquiry and Investigation effectively.  |
| 5 | Continue to expand the use of floor books to record learning and pupil voice.   |

What will be the three key resources you will be bidding for this year and why?

How much funding did you receive this year and what was it spent on? What was the impact of this expenditure?

1. Class resource boxes with key equipment such as magnifying glasses, mirrors, tweezers, pipettes, torches. In addition banks of resources for specific topics within each Year group.  
Resources to launch "Science Snippets" weekly / daily classroom investigations.
2. CPD for teaching staff and materials prepared to support each year group to effectively plan a range of investigations and skills.
3. E&I table resources