



Science at Wilbarston

Science: The Curriculum

Science plays a central role within the curriculum at Wilbarston and is fundamental to our wider trust mission of creating aspirational and knowledge-rich pupils. Pupils are encouraged to be curious, ask questions about what they observe and will be helped to understand scientific ideas and phenomena by using different types of enquiries to answer their own questions. Our Science Curriculum is ambitious and sequenced coherently so the interplay between substantive knowledge and disciplinary skills builds through the three discrete distinct disciplines of biology, chemistry and physics. As a result of the accumulation of essential knowledge and skills pupils' science capital and scientific understanding will be substantial and provide a secure foundation that will enable them to succeed in the next stage of their education. The Wilbarston Science curriculum aims to ensure that all Pupils develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. It also allows them to understand the nature process and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them. In addition, the pupils are equipped with the scientific knowledge required to understand the uses and implications of science today and for the future.

At the end of Foundation at Wilbarston

Pupils will gain a secure understanding of what science is, and to be introduced to the world around them through science. Pupils will develop scientific vocabulary and language. Furthermore, they will begin to explore investigations to ensure a strong foundation of science vocabulary and language.

At the end of Key Stage 1 at Wilbarston

Pupils will develop their understanding of scientific ideas by using different types of scientific enquiry to ask their own questions, observe changes over time, notice patterns, grouping and classifying and carrying out simple comparative tests. They will continue to build on their scientific language and communicate their ideas to a range of audiences in a variety of ways.

At the end of Key Stage 2 at Wilbarston

Pupils will be able to develop a deeper understanding of a wide range of scientific ideas. They will do this through exploring and talking out their ideas, asking their own questions about scientific phenomena and analysing functions, relations and interactions more systematically. They will have encountered more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates.

Pedagogy: How the Curriculum is Taught

Within our Science curriculum there are three main elements:

- Knowledge and conceptual understanding. This is sequenced and imparted via direct instruction, retrieval practice and explicit vocabulary teaching
- Nature, process and methods of science (working scientifically) is not taught as a separate strand but instead, woven through every lesson. This enables pupils to develop their skills as a scientist through applying their knowledge and understanding to deepen their own scientific understanding.
- Critical thinking around big questions that are current and relevant to pupils in today's society. Pupils explore the understanding that applications of science often have ethical, social, economic and political implications and are provided with opportunities to reflect and debate these issues.

Assessment

We use a multi-faceted approach to assessment within Science.

- Retrieval practice at the beginning of every lesson.
- Assessment for learning is used within each lesson through skilful use of questioning and live feedback
- Pupil voice to support the evidence that pupils know and remember more over time.
- Science experiments facilitate pupils to independently apply and explore the interplay between the appropriate substantive knowledge and disciplinary concepts.

Cultural Capital

Enrichment is an essential part of the Science Curriculum which provides pupils with discrete

Career Professional Development

We develop strong subject knowledge amongst all staff which is achieved through; comprehensive middle leadership development, a

<p>time to focus and deepen their learning, they provide opportunities for new experiences as well as nurturing and developing a thirst for learning.</p> <p>We use a multi-faceted approach to enrichment within Science:</p> <ul style="list-style-type: none"> • Trips to Science aspects and to museums. • External visitors coming in to deliver sessions <ul style="list-style-type: none"> • STEAM week experiences and events 	<p>focus on developing all teachers' subject knowledge and historical pedagogy. All staff benefit from implementing the high-quality planning resources provided by the Kapow yet amended to meet the needs of all pupils.</p> <p>Below is a summary of the CPD activities bespoke to history:</p> <ul style="list-style-type: none"> • Adapting plans with class teachers • Staff training afternoons as part of CPD log • 1:1 discussions with staff about lessons <ul style="list-style-type: none"> • STEAM events and training as appropriate
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Science Curriculum Overview:

Reception	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6

Opportunities and supplemented in provocations within the internal and external Early Years Provision

Year 1/2	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Cycle A	Seasonal Changes	Everyday materials	Sensitive Bodies	Comparing Animals	Introduction to Plants	Making Connections
Cycle B	Habitats	Microhabitats	Use of everyday materials	Life Cycles and Health	Plant Growth	Making Connections

Year 3/4	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Cycle A	Movement and Nutrition	Forces and Magnets	Rock and Soil	Light and Shadows	Plant Reproduction	Making Connections
Cycle B	Digestion and Food	Electricity and Circuits	States of Matter	Sound and Vibrations	Classifying and Changing Habitats	Making Connections

Year 5/6	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Cycle A	Mixture and Separation	Properties and Changes	Earth and Space	Life Cycle and Reproduction	Imbalanced Forces	Making Connections Human Timeline
Cycle B	Classifying Big and Small	Light and Reflection	Evolution and inheritance	Circuits, batteries and switches	Animals, including humans	Making connections

- Stand Alone units enhanced via our Wow days' timetable.
- Forrest Schools enhancements as Wilbarston as per plan which will enhance and develop scientific skills and understanding.