

Science Curriculum Statement



Intent:

Science lessons at Godwin Junior School aim to give all children a strong understanding of the world around them. Whilst being immersed in scientific vocabulary, pupils acquire specific skills, concepts and knowledge to help them to think scientifically, to gain an awareness of scientific processes and also an appreciation of the uses and implications of Science, today and in the future.

Scientific enquiry skills are embedded in each topic studied and these are developed throughout children's time at school. This model allows children to build upon their prior knowledge and increases their enthusiasm for the subject whilst embedding this procedural knowledge into the long-term memory. All children are supported to develop and use a range of skills including observations, planning and investigations.

In addition, our Learning Powers Approach emphasises the importance of children being curious and asking scientific questions about the world around them. It also encourages them to consider the choices available to them when planning and conducting investigations; thus inspiring them to become independent learners, exploring possible answers and articulating their ideas.

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. Our whole school approach to the teaching and learning of science involves the following;

- The school has an agreed Visions and Principles document which was drawn up in consultation with the teaching staff and reflects our aims.
- Science is taught in accordance with the statutory requirements of the National Curriculum 2014 document.
- Where possible, integrated links are made with other subjects to offer a creative way to develop children's knowledge, skills and understanding while motivating them to learn through stimulating interconnected topics. This also provides the opportunity to reinforce scientific vocabulary.
- Lesson planning is in line with the Medium Term Plan (MTP) and, where possible, includes opportunities for practical learning which links the topic to real life applications and sets high expectations for all learners.
- Children have access to a Knowledge Organiser for each unit, providing them with key facts to support their learning – these are stuck in their books for easy reference.
- Prior learning is built upon via Knowledge Organisers and Retrieval Practice activities, which encourage children to make links to what they already know.
- Planning involves teachers creating engaging lessons and using high quality resources to aid the understanding of conceptual knowledge.
- Key questions are revisited through Retrieval Practice in subsequent lessons to ensure the understanding of key concepts is embedded.
- Lessons offer the opportunity for cross curricular links and use of skills developed in other areas of learning.
- Planning includes opportunities for all learners to access the science curriculum and make good progress by offering: alternative tasks where appropriate; open-ended tasks to provide for a wide range of responses; a variety of resources; adult support/peer support; challenges and extensions for the most able children to extend and develop their understanding through higher-order questioning and additional tasks which demand mastery.

- Children respond to teaching in a variety of ways: practical tasks, extended writing, presentation of data, completion of investigation frames, written conclusions, drama and diagrams. Books reflect this.
- Key learning is focused on a question for each lesson – the content of the lesson enables all children to be able to confidently answer this question either through practical or written responses.
- Children are encouraged to ask questions to further their understanding and work towards being able to plan and record investigations independently and draw their own detailed conclusions.
- Working Scientifically skills are outlined on the MTP for use in that specific unit – thus ensuring skills are developed and applied in a progressive manner.
- Topic-specific vocabulary is outlined on MTPs and teachers include and use that which is relevant to each lesson within a topic – adding it as part of the science display in class. Key vocabulary is included on the Knowledge Organiser for each unit.
- Teachers demonstrate how to work scientifically: using equipment correctly, setting up investigations and recording them using a variety of methods.
- Opportunities are sought to extend and enhance children’s learning experiences beyond the classroom: outside learning, workshops, visits, virtual sessions and include the input of experts and professionals within that field. These are purposeful and complement and broaden the curriculum.
- Children’s understanding of science in the real world is extended by provision of a half-termly STEAM (Science, Technology, Engineering, The Arts, Maths) newsletter and whole-school display which highlights one aspect within STEAM.
- Each science unit includes links to Significant Scientists linked to that area of science; where possible these include examples from a diverse range of backgrounds, to demonstrate that science is a career path open to all and helps to dispel the myth of a scientist being ‘an old white man in a lab coat’.
- Regular events further the celebration of science. These include three annual Science Weeks with a focus on investigations, engineering and Superhero Scientists, allowing children to further explore what science really is and pique their curiosity.

Impact

The approach at Godwin Junior School encourages engaging, high-quality science education, that provides children with the foundations and knowledge for understanding the world.

Interaction with the local environment ensures that children learn through varied and first-hand experiences of the world around them. Learning outside the classroom and ‘real world’ and ‘local area’ opportunities are detailed within the MTPs and build links between school learning and real-world application of science. This thus ensures that children’s concept of the purpose of science is developed and misconceptions of it being ‘a subject learnt at school’ are eradicated.

Through various workshops, educational visits and interactions with experts, children have the understanding that science has changed our lives and that it is vital to the world’s future prosperity. They experience first-hand science in action, personal view points of the work involved, and can build links between this and what they know of scientists from our Significant Scientist work.

Children learn about the possibilities for careers in science through our Significant Scientist work as well as our STEAM newsletters and display, ensuring they have access to positive role models within the field of science. From this exposure to a range of different scientists from diverse backgrounds, all children feel they are scientists and capable of achieving.

Displays and work in books demonstrate the children’s’ ability to respond to the Learning Objective questions, showing that they have retained, understood and can explain concepts from their learning. Learning Objectives are linked directly to the statutory requirements of the National Curriculum. These are re-visited in weekly Retrieval Practice lesson starters, which provide the opportunity for children to recall prior learning and understand that they need this as building blocks for future learning.

Children at Godwin enjoy science, this results in motivated and inquisitive learners who are developing scientific understanding of the world around them, can link key concepts to 'real-world' applications, know what being a scientist means and are eager to find out more - applying the Learning Power of Curiosity.