At Roding, we are 'Free to Achieve.'

Science

Curriculum Intent

At Roding we aim to give all children a strong understanding of the world around them. They acquire specific skills and knowledge to help them to think scientifically and gain an understanding of both scientific processes and the uses/implications of Science, both today and in the future. Children are encouraged to ask questions and be curious about their surroundings both outside and inside the classroom.

The curriculum aims to ensure that pupils:

- Acquire and apply technical vocabulary relevant to each unit, enabling them to communicate their scientific understanding with precision.
- Develop a strong foundation of scientific knowledge and conceptual understanding across the disciplines of biology, chemistry, and physics.
- Understand the nature, processes, and methods of science through hands-on, inquiry-based learning.
- Gain the knowledge necessary to appreciate the uses and implications of science in contemporary and future contexts, preparing them to make informed decisions and think critically about scientific issues in their daily lives.

To support this, cross curricular opportunities are identified, mapped and planned to ensure contextual relevance. This scheme of learning will also provide pupils with a more inclusive representation of influential Scientists that encourages gender, SEND and racial inclusivity. This has been introduced to empower all learners so that they can engage and connect with an aspirational, diverse Science syllabus that provides a sense of meaningful identity. A clear and inclusive curriculum is vital to progress as a society, and create an education system which broadens our understanding and knowledge of the many cultures which have built our world, past and present.

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

- Science is taught in line with the topic blocks and learning intentions set out in the 2014 National Curriculum. From this, a key question has been generated for each of a year group's topics. Learning intentions for each lesson are devised by the class teacher so that the key question can be answered at the end of each topic for assessment purposes.
- Knowledge and skill development from previous years is built upon in line with the Roding Science Progression Grid. As the children's knowledge and understanding increases, 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.
- Planning for teaching and learning reflects the community of our school, and takes into account the needs and learning styles of Deaf pupils, those with SEND and pupils working at greater depth. Lessons contain appropriate adaptation so that all pupils, irrespective of their attainment level, are inspired by Science and are able to reach their potential.
- Knowledge Finders, which are stuck in at the start of every new topic, provide important vocabulary with their definitions that pupils need to know, key facts that are critical to the topic and scientific diagrams to aid pupils in visualising fundamental concepts. Key vocabulary is also present on Science learning walls.
- 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. This is developed through the years, in-keeping with the topics.
- Teachers model and demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and workshops with experts, where possible.
- Educational visits offsite take place to enhance pupils' learning journeys and professionals working within Science are invited to Roding to further ignite the children's curiosity in the topics that they are exploring in class.

Curriculum Impact

The impact of our Science curriculum is reflected in the progress pupils make in developing their scientific knowledge, skills, and understanding. By the time they leave Roding Primary School, pupils are confident in their ability to think scientifically and approach problems methodically.

- **Scientific Knowledge and Conceptual Understanding**: Pupils demonstrate a secure grasp of scientific principles across the key disciplines. They can explain scientific concepts, conduct investigations, and draw conclusions based on evidence.
- **Use of Technical Vocabulary**: Pupils confidently use technical vocabulary to describe scientific processes, explain their findings, and articulate their reasoning during discussions and written tasks.
- **Scientific Thinking and Investigation Skills**: Pupils become skilled at working scientifically. They are able to independently plan investigations, record observations, analyse data, and critically evaluate the outcomes. They understand the importance of accuracy and fairness in scientific research.
- **Real-World Application**: Pupils leave with a solid understanding of how science impacts their lives and the world around them. They are equipped with the

knowledge and skills needed to appreciate the uses and implications of science today and in the future.

Through careful sequencing and ongoing opportunities to revisit key concepts, pupils develop a lasting understanding of science that will serve as a foundation for future learning. Above all, the children are taught to think critically, ask questions and use their metacognitive learning skills. Roding children know to persevere and embrace challenge and, as a result, enjoy their Eureka moment of success and make links with other areas of the curriculum.