



THURGOLAND

CHURCH OF ENGLAND PRIMARY SCHOOL



LEARNING TOGETHER
IN FAITH & JOY

Science Curriculum Overview

Intent Statement.

At Thurgoland, we recognise the invaluable role that science plays within the school curriculum and everyday life in understanding the world around us. As Scientists, our children access a coherent and focused approach to Science lessons that develops their understanding of key concepts whilst encouraging their natural curiosity about the world they live in, and beyond! Science at Thurgoland involves a variety of practical, first hand experiences that develop 'working scientifically' skills. Children use these skills when investigating a range of exciting topics each year alongside building on their prior knowledge in order to become scientists themselves. We believe that every child can succeed in Science to become a self-assured and skilled Scientist equipped with the knowledge of the world around them and the ability to investigate scientifically.

At Thurgoland we intend to:

- Support children's understanding of key scientific concepts, vocabulary and ideas.
- Develop children's substantive knowledge and enable them to make links with prior learning and connections with other subjects where appropriate.
- Develop their skills as Scientists, disciplinary knowledge, to enable them to carry out accurate scientific investigations that will deepen their level of understanding and enable them to discover more about the world they live in. By learning substantive and disciplinary knowledge, pupils not only know 'the science'; they also know the evidence for it and how this evidence is gained.
- Encourage all learners to articulate their thoughts and solve problems by combining their disciplinary and substantive knowledge within investigations.
- Provide scaffolding and support, including opportunities for pupil led investigations, to ensure that all learners can access the curriculum.

Working Scientifically:

We aim to develop children's scientific skills needed to:

- Plan, collect, discuss and analyse scientific investigations.
- Be increasingly proficient in scientific enquiry; to ask questions, make predictions and record information in an organised way.
- Interpret and evaluate data, asking questions to understand subject knowledge they have learnt – often asking how or why.
- Set up and carry out a range of tests, including fair testing, observations over time and pattern spotting.
- Interpret and communicate scientific subject knowledge in a variety of ways, including through pictures, videos, numerical and quantitative data and hands on practical work.

Scientific implementation

Teachers create a positive attitude to Science learning within their classrooms at Thurgoland Primary and reinforce an expectation that all pupils are capable of working scientifically through a hands on, enquiry based approach to learning. Our whole school approach to the teaching and learning of Science involves the following:

- In EYFS, Science is developed through purposeful play based experiences which are represented in a variety of outdoor and indoor environments. The long term plan focuses on the expectations from Development Matters / Early Years Outcomes. Photographic evidence, observations and discussions with the children are a main aspect of Science learning in EYFS.
- Science is taught consistently, once a week for an hour, but is discretely taught in many different contexts throughout all areas of the curriculum. Teachers take opportunities to use high quality texts to support their Science teaching.
- Teachers deliver interactive, well-designed lessons that allow children to deepen their learning and understanding, to ask questions and carry out investigations.
- Vocabulary is explicitly taught and reviewed every lesson.
- Throughout each area of Science, the children will be working scientifically, ensuring that the emphasis is on the children learning by doing. Teachers plan and provide activities that will enable the children to test their previously held ideas where appropriate.
- We build upon the knowledge and skill development of the previous years by referring to our whole school skills and knowledge progression map. 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.
- Lessons begin with a 'key question' for children to investigate. We follow an enquiry-based approach, which includes problem-solving opportunities that allow children to apply their knowledge, and find out answers to their questions themselves. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom.
- Teachers use precise questioning in class to test conceptual knowledge and skills, tasks are selected and designed to provide appropriate challenge to all learners and enable all learners to make progress.
- Teachers assess pupils regularly to identify those children with gaps in learning. Children are formatively assessed at the end of each Science unit in a variety of ways according to the area of science they are studying.
- Teachers are proficient in modelling and demonstrating how to use scientific equipment/ resources, and various 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.
- Throughout school, children revisit key themes of: living things and their habitats, animals including humans, forces and materials.
- Regular events, such as Science Week will inspire, motive and enthuse children to celebrate all sciences and their importance in our everyday lives. These events often involve families and the wider community.

Impact

The impact of the Science curriculum and delivery at Thurgoland Primary school is to ensure children not only acquire the appropriate age-related knowledge, but also skills which will provide the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Teachers will assess children at the end of each unit and this will be passed up with the cohort so future teachers are aware of the strengths and weaknesses of the class. This gives teachers a strong understanding of whether certain objectives may need revising before knowledge is built on.

All children will have:

- A wider variety of skills linked to scientific knowledge and understanding, and scientific enquiry/investigative skills.
- Children will be able to refer to prior knowledge to support their learning in each year group and as a result, they will apply this to scientific enquiry/investigation.
- A richer vocabulary which will enable to articulate their understanding of taught concepts.
- High aspirations, which will see them through to further study, work and a successful adult life.