Science

Intent

At Grange Farm Primary School, our science curriculum provides the foundations for understanding the world through the specific disciplines of **biology, chemistry, and physics**. We aim to develop pupils' curiosity, critical thinking, and scientific literacy, equipping them with the knowledge, skills, and attitudes needed to explore, question, and understand the natural and physical world.

Our curriculum is designed to promote a **lifelong curiosity** about science by encouraging children to ask perceptive questions, test ideas, and draw evidence-based conclusions. Pupils are taught to recognise the power of rational explanation and to apply scientific methods to both familiar and unfamiliar contexts.

We ensure that children not only acquire a secure body of **substantive scientific knowledge**, but also develop the **disciplinary skills** required to think and work scientifically. This includes using accurate scientific vocabulary, developing practical and investigative skills, and fostering an appreciation of how science influences everyday life and the wider world.

Implementation

Our Science curriculum follows the **National Curriculum for Science** and is carefully organised into six key strands that show progression throughout the school:

- **Plants**
- **Animals, including humans**
- **Living things and their habitats**
- **Materials**
- **Energy and Forces**
- **Earth and Space**

We use a **spiral curriculum model**, where key knowledge and skills are revisited with increasing complexity, allowing pupils to make links, consolidate understanding, and build upon prior learning. Lessons are structured to include opportunities for **recall and retrieval practice**, enabling pupils to strengthen long-term retention and confidence in applying scientific ideas.

Each unit integrates **'Working Scientifically'** skills within conceptual learning rather than teaching them in isolation. This ensures pupils have frequent and meaningful opportunities to develop enquiry skills such as observing over time, pattern seeking, classifying, comparative and fair testing, and researching using secondary sources.

Practical investigation is central to our approach. Children are encouraged to explore questions through hands-on enquiry, collect and interpret data, and communicate findings using appropriate scientific vocabulary and representations. The **'Science in Action'** strand runs throughout the curriculum, connecting classroom learning to real-world contexts and inspiring pupils to see themselves as scientists of the future.

Cross-curricular links are embedded across the curriculum—particularly with **mathematics, computing, and geography**—enabling pupils to apply their scientific skills in a variety of contexts and to recognise science as a core part of human understanding and progress.

Impact

By the end of each key stage, most pupils will meet or exceed the expectations of the **National Curriculum for Science**.

In **EYFS**, children develop early scientific thinking through hands-on exploration, sensory experiences, and observation of the natural world. In **Key Stages 1 and 2**, pupils build a progressively deeper understanding of key scientific ideas within biology, chemistry, and physics.

By the end of **Year 6**, pupils will:

- Demonstrate secure knowledge of key scientific concepts and vocabulary.
- Apply their understanding to design and carry out enquiries, making predictions, taking accurate measurements, and recording data using appropriate methods.
- Present and interpret data in various formats, including graphs, diagrams, and written explanations.
- Analyse evidence to identify patterns, draw conclusions, and evaluate results.
- Understand how real scientists investigate questions and solve problems in the wider world.
- Communicate ideas clearly using precise scientific language and reasoning.

Pupils leave Grange Farm with a **strong foundation of scientific knowledge and skills**, an appreciation of the relevance of science to their own lives, and the confidence to continue exploring scientific questions at Key Stage 3 and beyond. Our children are **curious, resilient, and reflective learners** who approach science with enthusiasm and intellectual curiosity.