

INTENT

Our aims are that our science curriculum will...



Develop secure and connected scientific knowledge across biology, chemistry and physics.



Nurture curiosity, wonder and a lifelong interest in understanding the world around us.



Enable pupils to think critically, question ideas and reason scientifically using evidence.



Build understanding of how scientific knowledge is developed, tested and refined over time.



Equip pupils with the scientific vocabulary and communication skills needed to explain ideas confidently.



Demonstrate the relevance of science to everyday life, future opportunities and global challenges, preparing pupils for the next stage of education and life in a technological world.

IMPLEMENTATION

- How do we achieve our aims?

Science has changed our lives and is vital to the world's future. All pupils are taught essential aspects of the knowledge, methods, processes and uses of science. Through building on foundational knowledge and concepts, children are encouraged to explain and develop a sense of excitement and curiosity about the world around them. They are encouraged to understand how science can be used to explain what is occurring, predict how things will behave and analyse causes. It aims to build knowledge about the natural world. This knowledge is open to question and revision as we develop new ideas and discover new evidence.

Progression model

The science curriculum is carefully sequenced to ensure that knowledge, skills and vocabulary build progressively from EYFS to Year 6. Key scientific concepts are identified and revisited throughout pupils' time at Grace Mary, enabling children to strengthen understanding and make meaningful connections between topics. This cumulative approach supports long-term retention and helps pupils transfer learning to new contexts.

Scientific learning is structured around both:

Substantive Knowledge

The established scientific knowledge pupils need to know and remember.

Disciplinary Knowledge

Understanding how scientists work, investigate, interpret evidence and develop scientific explanations.

EYFS/KS1/KS2

Guidance is taken from development matters and the national curriculum which outlines the expected curriculum to be taught.

Big ideas

The curriculum explicitly teaches the five types of scientific enquiry: Observing over time, Pattern seeking, Identifying, grouping and classifying, Comparative and fair testing, Research using secondary sources

IMPLEMENTATION

(continued)

Work booklets

From Year 2 to Year 6, science is supported through structured work booklets which:

Sequence knowledge in a coherent and progressive manner.

Provide opportunities for retrieval and review.

Support disciplinary and substantive learning.

Promote reading, discussion and scientific literacy.

Enable all pupils to access ambitious curriculum content.

Written outcomes, including explanations, evaluations and extended responses, allow pupils to demonstrate depth of understanding and develop scientific communication skills.

Assessment

Formative

Teachers assess learning continually through:

Questioning and classroom discussion.

Observation of practical work.

Retrieval activities.

Low-stakes quizzes.

Analysis of misconceptions.

Review of written outcomes.

Assessment information is used to adapt teaching and provide targeted support where necessary.

Summative

Summative assessment includes:

End-of-unit assessments.

Knowledge quizzes.

Evaluation of practical enquiry skills.

Pupil discussions and interviews.

Book studies.

Extended written outcomes.

Assessment focuses on both substantive and disciplinary knowledge, enabling leaders and teachers to evaluate curriculum effectiveness and identify future priorities.

IMPACT

-How will we know we have achieved our aims?



Pupils demonstrate secure scientific knowledge and understanding across the science curriculum.



Pupils use scientific vocabulary accurately and communicate their understanding confidently.



Pupils apply their knowledge to explain phenomena, make predictions and reason scientifically.



Pupils plan and carry out scientific enquiries with increasing independence and accuracy.



Pupils analyse evidence, draw informed conclusions and make connections between scientific concepts over time.



Pupils show curiosity, resilience and enthusiasm for science, recognising its importance in everyday life, future study and careers.