

St Mary's Farnham Royal Church of England Primary School

Through FAITH, as a FAMILY we aspire to grow. Thriving for all our FUTURES, enabling us to FLOURISH individually and as a community



SMFR Approach to Science

This guidance outlines the teaching, organisation and management of the Science curriculum taught and learnt at SMFR. The implementation of these guidelines is the responsibility of all teaching staff

INTRODUCTION

At SMFR, we are a FAMILY committed to ensuring all children FLOURISH in our care; We take pride in providing our children with a broad and engaging curriculum, and fostering their desire and curiosity to learn.

SCHOOL VISION Through FAITH, as a FAMILY we aspire to grow. Thriving for all our FUTURES, enabling us to FLOURISH individually and as a community.

For I know the plans I have for you, plans to prosper you and not harm you, plans to give you hope and future
Jeremiah 29:11

INTENT

Also see

- Subject Goals
- Subject Progression Map

Subject Intent Statement

At SMFR, we encourage children to have faith in their abilities to be inquisitive throughout their time at the school and into their future. The Science curriculum fosters a healthy curiosity in children about our universe and promotes respect for the living and non-living. We believe that science encompasses the acquisition of knowledge, concepts, skills and positive attitudes. Throughout the programmes of study, the children will acquire and develop the key knowledge that has been identified within each unit and across each year group.

The curriculum is also designed to ensure that children are able to acquire key scientific knowledge through practical experiences; using equipment, conducting experiments, building arguments and explaining concepts confidently. We offer enrichment opportunities to enhance the learning that takes place and, where possible, science lessons are linked to our existing topics. Children are encouraged to ask questions and be curious about their surroundings and a love of science is nurtured through a whole school ethos and a varied science curriculum, enabling children to flourish.

Subject Aims

The national curriculum for Science aims to ensure that all pupils:

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics;
- Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them;
- Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

IMPLEMENTATION

Also see: Appendix 1 Science Non Negotiables

Subject Planning & Teaching

Through careful stages of planning and 'Quality First Teaching' each teacher uses responsive and adaptive teaching within their class' curriculum to meet the needs of the children they teach with the aim of developing independence and the child meeting his/her potential at whichever level they are working at. We acknowledge that children learn in many different ways and recognise the need to use a range of different teaching and learning strategies, that will allow all children to learn in ways that best suit them.

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In each lesson, children are guided towards the learning objectives (WALTs) through the use of success criteria (WILFs). The learning objectives and success criteria are shared at the beginning of the lesson and reviewed by children at the end. They are subsequently used by the teacher during the assessment and review work of children's work and are used to identify individual target areas.

The Science curriculum is mapped to ensure alignment with the national curriculum content and programme of study. Key knowledge and skills relate directly and build towards the achievement of end of key stage 'end points', informed by the KS1 and 2 National Curriculum statements for; Working scientifically, Biology, Chemistry and Physics.

SMFR Science Resources/Schemes

- Cornerstones curriculum
- Concept Cartoons

Subject Enrichment: See Teaching, Learning & Assessment Policy

Inclusion for all Children: See Teaching, Learning & Assessment Policy

EYFS Statutory Framework:

The EYFS framework promotes teaching and learning to ensure children's 'school readiness' and gives children the broad range of knowledge and skills that provide the right foundation for good future progress through school and life. Through this curriculum, children will be exposed to aspects of knowledge, skills and understanding that will be built upon once they enter the National Curriculum Programmes of Study.

Science Curriculum Link to EYFS Framework:

Understanding the World Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children's personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children's vocabulary will support later reading comprehension.

IMPACT

Standards of pupil work, assessment data and pupil feedback will help the subject leader and senior leaders review the impact of the Science curriculum.

Standards of Pupil Work:

The subject leader will ensure they monitor the teaching and learning and hence the standard of work across the school, matching the knowledge, skills and understanding to the curriculum overview and age-related expectations for the subject. Each leader will be expected to produce an annual report (Deep Dive) informing the senior leaders and governors of their findings.

Assessment:

At SMFR we use Cornerstones and teacher expertise and evaluation to support our assessment of Science knowledge and investigative skills.

The learning objectives and outcomes in each planned lesson show how children might demonstrate what they have learnt. Assessment should inform planning so that children learn and develop skills appropriate to their abilities and understanding. Methods of assessment can include teacher observations, discussion with pupils, self-assessment and peer assessment.

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Overall, children's progress in Science is assessed against the age-related expectations. These describe the types and range of performance that the majority of pupils should characteristically demonstrate, having been taught the relevant programmes of study.

Pupil Feedback:

As part of the on-going review and development of our curriculum, the Science the Subject Leader will hold learning conversations with children; this will be done in a variety of ways. Our teaching staff value pupil feedback and, within lessons, will informally seek the children's thoughts and ideas about their learning.

Role of the Science Subject Leader:

- To ensure a high profile of the subject.
- To produce an agreed curriculum statement that outlines the intent, implementation and impact for Science within the SMFR curriculum.
- To produce an agreed progression of content and skills within a curriculum overview, that takes account of the EYFS curriculum and National Curriculum.
- To produce and maintain an annual subject action plan.
- To support colleagues by advising them on planning; appropriate resources; teaching strategies; approaches to assessment; changes and developments within the subject.
- To model the teaching of Science.
- To ensure a full range of relevant and effective resources are available to enhance and support learning.
- To monitor the standards of learning, supported by Senior Leaders i.e. through books, lesson observations, learning conversations, data analysis and ensuring that key knowledge is evidenced in outcomes.
- To develop own skills and knowledge through relevant courses; reading; accessing other sources of information and expertise.



Appendix 1 Science Non Negotiables

	In Every Lesson	Where Appropriate
INTENT	<ul style="list-style-type: none"> • Learning appropriate to agreed SMFR subject Progression Map & Goals • Success Criteria linked to National Curriculum Learning intention linked to National Curriculum • Use of a range of well thought out resources including IT • Focus on handwriting & presentation (where appropriate) 	<ul style="list-style-type: none"> •
IMPLEMENTATION		
Challenge	<ul style="list-style-type: none"> • Adaptive and reflective teaching • Opportunities for challenge • Hooks • Three before me 	<ul style="list-style-type: none"> • Use of KWL grids • Use of targets • Focus on Gem Powers • Investigation • Use of scientific apparatus
Speech & Language	<ul style="list-style-type: none"> • Focus on vocabulary • Talk Partners • Focus on speech & language • Pupil talk > Teacher talk 	
IMPACT		
AFL	<ul style="list-style-type: none"> • Questions to check understanding. • Scanning classrooms • Mini plenaries • Marking & Feedback, where appropriate, in accordance with SMFR policy • Discussions with children. • Collaborative learning • Adapted planning for the next lesson. • KS1 children's self assessment • KS2 children's 'EXIT Messages' 	<ul style="list-style-type: none"> • Peer evaluation • Self assessment • .Flexible groupings. • Children's peer and self-assessments. • Interventions to plug gaps. • All pupils are introduced to a topic through using KWL grids in order to assess and monitor success criteria • Testing • Quizzing