

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 Computing Approach

This guidance outlines the teaching, organisation and management of the Computing 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

The use of computers and computer systems is an integral part of the National Curriculum and knowing how they work is a key life skill. In an increasingly digital world there now exists a wealth of software, tools and technologies that can be used to communicate, collaborate, express ideas and create digital content. The intention of the Computing curriculum at St Mary's Farnham Royal CE Primary school is to equip pupils with both the computational skills and creativity to make their own valuable contributions to the digital world. We believe it is vital to make links and indeed embed our teaching of computing into many other areas of the curriculum. We seek to provide an age appropriate understanding of computer science and how digital systems work, putting this into practice by providing meaningful and fun opportunities for the children to take part in programming activities and creating their own digital content. This is to equip them to be able to responsibly and competently use information and communication technology to express themselves and develop and improve their own ideas, which includes an emphasis on how to keep themselves safe online and act in a responsible way online and in digital communication.

Subject Aims

St Mary's Farnham Royal CE Primary aim to:

- Provide a broad, balanced, challenging and enjoyable curriculum for all pupils
- Develop pupil's computational thinking skills that will benefit them throughout their lives.
- Meet the requirements of the national curriculum programmes of study for Computing at Key Stage 1 and 2
- To respond to new developments in technology
- To equip pupils with the confidence and skills to use digital tools and technologies throughout their lives.
- To enhance and enrich learning in other areas of the curriculum using IT and computing.
- To develop the understanding of how to use computers and digital tools safely and responsibly

The National Curriculum for Computing aims to ensure that all pupils:

- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.
- Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- Are responsible, competent, confident and creative users of information and communication technology.

EYFS

It is important in the foundation stage to give children a broad, play-based experience of IT and computing in a range of contexts, including off-computer activities and outdoor play.

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Computing is not just about computers. Early years learning environments should feature IT scenarios based on experience in the real world, such as in role play. Children gain confidence, control and language skills through opportunities such as playing with programmable toys using directional language to move, creating artwork using digital drawing tools and controlling and directing each other, giving commands to move or find objects.

Outdoor exploration is an important aspect and using digital recording devices such as tablets, cameras and microphones can support children in developing communication skills. This is particularly beneficial for children who have English as an additional language.

By the end of key stage 1 pupils are taught to:

- understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions
- write and test simple programs
- use logical reasoning to predict the behaviour of simple programs
- organise, store, manipulate and retrieve data in a range of digital formats
- Communicate safely and respectfully online, keeping personal information private, and recognise common uses of information technology beyond school.

By the end of key stage 2 pupils are taught to:

- design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output; generate appropriate inputs and predicted outputs to test programs
- use logical reasoning to explain how a simple algorithm works and to detect and correct errors in algorithms and programs
- understand computer networks including the internet; how they can provide multiple services, such as the world-wide web; and the opportunities they offer for communication and collaboration
- describe how internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely
- Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

IMPLEMENTATION

Also see: Appendix 1 Computing Non Negotiables

Subject Planning & Teaching

Through careful stages of planning and 'Quality First Teaching' each teacher differentiates 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. In each lesson, children are guided towards the learning objectives through the use of success criteria. 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 Computing 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: Coding, E-safety, Understanding and Using Computers, and Networks. Technical vocabulary taught and used supports greater understanding of concepts involved, enabling pupils to discuss the curriculum articulately and appropriately.

SMFR Computing Resources/Schemes

- SMFR adapted scheme of work
- Discovery/Espresso coding
- SMFR Website

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- iPads, Tablets and Laptops to support learning in the classroom
- A range of digital devices including programmable toys, cameras and other input/output devices

Subject Enrichment: See Teaching, Learning & Assessment Policy

When planning for a curriculum area, we will look at how we can enrich the children's learning and make it purposeful and engaging. Educational visits and visitors to the school are used wherever possible to aid learning. We are also mindful of the advantages of outdoor learning opportunities and the range and extent of various resources and sources of information that are available, some through technology.

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

All children have an entitlement to access the Computing curriculum. All children will be given the opportunity to participate in all activities. We aim to ensure pupils have equal access to the Computing curriculum and resources regardless of race, gender or ability. We recognise the fact that there are children of widely different abilities and varying needs in all classes, and we provide suitable learning opportunities for all children by differentiating activities, to ensure that the specific needs of individual children are best met.

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.

Computing Curriculum Link to EYFS Framework:

In planning and guiding what children learn, practitioners must reflect on the different rates at which children are developing and adjust their practice appropriately.

Three characteristics of effective teaching and learning are:

- playing and exploring - children investigate and experience things, and 'have a go'.
- active learning - children concentrate and keep on trying if they encounter difficulties, and enjoy achievements
- creating and thinking critically - children have and develop their own ideas, make links between ideas, and develop strategies for doing things.

IMPACT

Standards of pupil work, assessment data and pupil feedback will help the subject leader and senior leaders review the impact of the Computing 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 Target Tracker to support our assessment of Computing

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.

Overall, children's progress in Computing 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.

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Pupil Feedback:

As part of the on-going review and development of our curriculum, the Computing 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 Computing Subject Leader:

- To ensure a high profile of the subject.
- To produce an agreed curriculum statement that outlines the intent, implementation and impact for Computing 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 Computing.
- 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 Computing Non Negotiables

	In Every Lesson	Where Appropriate
INTENT	• Learning appropriate to agreed SMFR subject Progression Map & Goals • WILFs linked to National Curriculum • WALT linked to National Curriculum • Use of a range of well thought out resources including IT • Focus on handwriting & presentation (where appropriate)	•
IMPLEMENTATION		
Challenge	• 3-way differentiation (including scaffolding) • Opportunities for challenge • Hooks • Three before me • Work saved in individual digital files • Use of modelling and scaffolding to build up complex skills • Use of appropriate digital devices • Follow schools acceptable use policy at all times and on all digital devices	• Use of Targets • Focus on Gem Powers • Evidence collected of lessons that do not require digital content • Modelled examples – video clips to watch and re-watch • Discovery/Espresso Coding • TA support • Modelled use of technical language
Speech & Language	• Focus on vocabulary • Talk Partners • Focus on speech & language • Pupil talk > Teacher talk	• Use of correct technical vocabulary
IMPACT		
AFL	• 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'	• 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