'Growing, Loving and Learning in the arms of Mary'

Information Technology Policy

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Intention

Throughout St Mary's, computing will be used to enhance all subjects within the curriculum. All children at St Mary's have the right to access a range of Computing within our school to develop an understanding of Information technology through a safe online learning space. Each year group's topics will explore and progressively build upon different elements within the computing curriculum, that will teach the children the importance computing technology has in society. It will also explore the positive and negative impacts technology can have for the environment and wider world.

The Computing curriculum is a gradual development of skills running from Early Years to Year 6, so that when the children leave, they have a sound knowledge of Computing to take them through to secondary education. By the end of KS2, all children will be able to independently and confidently use a range of Microsoft software and know how to keep their work safe. In addition, they will be able to create projects using a range of online platforms that utilise programming, sequencing and debugging skills. Throughout the creating process, children will be able to evaluate with a critical mind for how to improve and adapt their work. In addition, they will also be able to present data findings from research in appropriate and clear formats.

St Mary's four curriculum drivers:

- Belief
- Rights
- Environment
- Wellbeing.

The planning of Computing within our school curriculum ensures that these four drivers are embedded throughout.

The aims of the 2013 National Curriculum are to ensure that children:

- 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

The national curriculum sets out an overview for intended skills that should have been taught by the end of each key stage to ensure fluidity and progressive development of IT skills.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/239033/PRIMARY_national_curriculum_-_Computing.pdf IT is a subject that can be used interchangeably throughout different subjects to deepen a mastery approach to learning. Children should be able to make practical links between prior IT experiences and implement them to new tasks in each year group. The expectation of children is that they will all progress through the curriculum at the same pace for an inclusive learning environment. Assessment will be made by each teacher to determine the additional support any child may need throughout the duration of IT lessons to ensure that they all progress collectively as a year group.

Implementation

The computing curriculum will be delivered throughout the academic year with a cross-curricular approach in order to enhance our children's learning of our wider curriculum. The computing curriculum will be taught with six main focuses throughout the year; Multimedia Text and Images, Multimedia Sound and Motion, Data Handling, Information Technology, Coding and Programming and Digital Literacy (Online Safety). These have been derived from the 3 core strands of computing, outlined by the government's National Curriculum; Information Technology, Computer Science and Digital Literacy. Our IT Curriculum focuses are based on the MrP ICT scheme of work which will allow the children to learn about and navigate IT in a creative way.

Planning

The planning of IT will be integrated within our wider and core curriculum. Staff will embed all elements of the computing curriculum into their main teaching input for the wider curriculum. Teachers will allow allocated "tinkering" time for pupils at the beginning of any cross curricular or standalone computing sessions, so that children are able to explore specific software and to become familiar with its features. Teachers will ensure all skills required for an embedded session with use of either Laptops or iPads will be explicitly taught to ensure the children become familiar and fluent with software and technology.

With regards to standalone computing projects, teachers will allow the children to follow the DARES planning structure (MrP ICT). Below is the structure children will follow to plan computing project:

- **D** - Design: Pupils start to discuss the desired outcome for their project and are given time to tinker with the software before planning what they will do to achieve their outcome.
- **A** - Apply: Pupils are given the opportunity to create, make and produce content using the app or software explored in the Design lesson(s)
- **R** - Refine: Pupils spend time considering ways to modify and improve their projects to get the best results possible.
- **E** - Evaluate: Upon completing their desired outcome, pupils are given the opportunity to reflect and consider how effectively they have achieved their goal.
- **S** - Share: Learners are given the opportunity to publish and exhibit their work to the world embedding skills from the Digital Literacy curriculum.

Image 1. Example student project plan for Year 5 coding and programming

Key stage 1 Pupils should be taught to:

1a. *understand what algorithms are; how they are implemented as programs on digital devices; and those programs execute by following precise and unambiguous instructions*

1b. *create and debug simple programs*

1c. *use logical reasoning to predict the behaviour of simple programs*

1d. *use technology purposefully to create, organise, store, manipulate and retrieve digital content*

1e. *recognise common uses of information technology beyond school*

1f. *use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.*

Key stage 2 Pupils should be taught to:

2a. *design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts*

2b. *use sequence, selection, and repetition in programs; work with variables and various forms of input and output*

2c. *use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs*

2d. *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*

2e. *use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content*

2f. *select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information*

2g. *use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.*

Curriculum

Information Technology; **Data Handling, Multimedia Text and Images, Multimedia Sound and Motion and Information Technology**. These strands of our computing curriculum focus on the children's development of skills to use a wide range of word processing software. This software includes; Microsoft Word, Microsoft Powerpoint and Microsoft Excel. The word processing skills the children will develop will be transferred into mini projects within the wider curriculum. Projects may include; green screen videos, digital art collage, powerpoint animations or presentations, graphs of data. Additionally, children will make links to Digital Literacy by learning how the wide web works and how they can access information online; identifying safe ways to search for appropriate information.

Digital Literacy; Digital Literacy. This strand of the computing curriculum focuses heavily on the relationships, presence and attitude children should develop when online. The children will progressively increase their knowledge of safe relationships online and ways to identify and report cyberbullying. They will begin to explore how information shared online is not private, but that there are ways to copyright and protect your work/personal information. They will explore how digital permission can affect them and the effects consenting or not consenting to share information online can have. By the end of Key Stage 2, students will be able to confidently identify and respond to a multitude of risks they may encounter online and confidently know the correct strategies to reporting issues.

Computer Science; Coding and Programming. This strand of the computing curriculum will be delivered through Code.org. From this, children will learn and develop their skills of creating code. They will explore making animations, apps, websites and games. They will endeavour on a journey learning to debug codes, create algorithms, use a range of loops, create sprites and create sequential patterns. The children's progress will be monitored through code.org with a consistent analysis of the children's skill occurring throughout the lessons. By the end of Key Stage 2, children will be able to apply their knowledge of coding and programming to additional

Assessment

The assessment of children's work will take place through verbal feedback within lessons with ways to adapt and improve work. In addition to this, children will be able to complete work and upload and save it to their shared drive folders for self and peer-assessment. Self and peer assessment can be done through commenting suggestions on each other's work via google classroom or by an assessment sheet.

Image 2. Example self-assessment sheet (MrP ICT)

My Computing Project Evaluation

What Was I Trying to Achieve?

How Effective Was My Project?

0   1   2   3   4   5   6   7   8   9   10

What Did I Do Well?

What Challenged Me and How Did I Deal With It?

What Will I Improve Next Time?

Marking

Marking of work will be done in line with the schools marking and feedback policy. This is to be done live in the lesson to ensure children are aware of how to adapt and improve their work. The marking policy can be found here. feedbackpolicy.pdf (smrc.school)

Monitoring and Evaluation

Computing will be monitored throughout the year by the Computing Coordinator. Samples of work from each year group and Computing Strand will be saved on our shared drives at the end of the year. Childrens work on their personal drives and planning will also be monitored to ensure that the year group appropriate skills are being taught effectively, and the needs and abilities of the children are being catered for. Lessons may be monitored to help promote the quality of learning and standards of achievement in Computing. At the end of the academic year, staff and pupil voice will be carried out by the coordinator to gather a consensus of where improvements can be made to enhance the children's learning in the following academic year.

Role of the Subject Leader

-   Monitor, evaluate and enhance the quality of teaching, learning and assessment in computing
-   Support, guide and motivate colleagues as well as build capacity across the school: CPD
-   Identify the subject's needs and prioritise them in the context of whole-school decision-making, to ensure a broad and balanced curriculum
-   Provide strategic direction and development of computing across the school
-   Create Long-term planning for the school
-   Support staff with medium term planning for computing
-   Raise the profile of Computing in the school
-   Create, record and analyse staff voice questionnaires
-   Create, record and analyse pupil voice questionnaires
-   Download tips for the teachers
-   Research apps, websites and useful tools to support teachers with the children's learning