Introduction to Computing and ICT at Ks1 and Ks2

 "Across the three technology disciplines we aim to enthuse the next generation of technologists to develop the analytical and creative skills necessary to design and create amazing solutions.

We are fortunate enough to be able to rotate students between the Food Technology, Resistant Materials and Computing disciplines which offers the opportunities for them to design, make and critique through a medium that compliments their strengths or future aspirations.

The department are confident that the curricula offered will lay the practical and theoretical foundations to inspire entrepreneurs, who remember St Martins School as the place where their ideas and passionate pursuit of creativity was stimulated."

Computing and ICT at Key Stages 1-4

The Technology department (Computing & ICT) focuses on learning numeracy and literacy skills through the appropriate use of efficient computational thinking, effective/creative data presentation and critical reflection of modern electronic communication.

By the end of Key Stage 1 it is important that a pupil:

Understands what an algorithm is and that computers need precise instructions.
Knows that users can develop their own programs, and can demonstrate this by creating a simple program.

Recognises that digital content can be represented in many and can explain the different ways that they communicate information.

Understands that computers have no intelligence and that computers can do nothing unless a program is executed.

Obtains content from the World Wide Web using a web browser and understands how to communicate safely and respectfully online.

Uses software under the control of the teacher to create, store and edit digital content using appropriate file and folder names. Understands that people interact with computers. Shares their use of technology in school. Knows common uses of information technology beyond the classroom. Talks about their work and makes changes to improve it.

Topics include:

Information Posters using numbers, symbols and words
Creating task instructions and making them more efficient
Creating a mood board of colours, expressions and number data
Accessing Internet content and understanding how to be polite to owners of that content

Key stage 2

Pupils are taught to:

- design, write and debug 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
- use logical reasoning to explain how some simple algorithms work 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
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- 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
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

By the end of this Key Stage it is important that a pupil:

Shows an awareness of tasks best completed by humans or computers. Designs solutions by decomposing a problem and creates a sub-solution for each of these parts (decomposition). Recognises that different solutions exist for the same problem.

Understands the difference between, and appropriately uses if and if, then and else statements. Uses a variable and relational operators within a loop to govern termination.

Designs, writes and debugs modular programs using procedures. Knows that a procedure can be used to hide the detail with sub-solution (procedural abstraction).

Performs more complex searches for information e.g. using Boolean and relational operators. Analyses and evaluates data and information, and recognises that poor quality data leads to unreliable results, and inaccurate conclusions.

Understands why and when computers are used. Understands the main functions of the operating system. Knows the difference between physical, wireless and mobile networks.

Understands how to effectively use search engines, and knows how search results are selected, including that search engines use 'web crawler programs'. Selects, combines and uses internet services. Demonstrates responsible use of technologies and online services, and knows a range of ways to report concerns.

Makes judgements about digital content when evaluating and repurposing it for a given audience. Recognises the audience when designing and creating digital content. Understands the potential of information technology for collaboration when computers are networked. Uses criteria to evaluate the quality of solutions, can identify improvements making some refinements to the solution, and future solutions.