



# Computing/ ICT Department

## Curriculum overview

Computing and ICT is a core subject at Woolton High School. It is designed in order to provide all pupils with a broad, balanced education to understand the digital world they live and how to interact within it safely. We aim to prepare pupils with the necessary skills for success when using a computer for a variety of things. We follow the Key stage 3 Computing framework and progress to complete ICT functional skills at Key Stage 4. Programming is taught through visual and text-based methods such as Scratch and Python. Other topics include creating audio books, collecting and exploring data, understanding networks, creating digital art and 3D models and learning to communicate using digital tools. E-safety forms an important part of all lessons and is also taught through PSHE lessons.

### Departmental Staff

Miss M Cooper      ICT Teacher

ICT and Computing curriculum

**KS3 Long term plan**

KS3 Term 1	<b>Pupils should be able to:</b> <ul style="list-style-type: none"> <li>design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems</li> <li>understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems</li> <li>create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability</li> <li>understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits</li> </ul>					
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	Year 7		Year 8		Year 9	
Subject focus	History of technology Inputs and outputs	Desktop Publishing	Technology-Hardware/Software	Desktop publishing	Technology Society, Hardware (internal & external)	Technology continued Binary, Networks, filetypes

KS3 Term 2	<b>Pupils should be able to:</b> <ul style="list-style-type: none"> <li>understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits</li> <li>undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users</li> <li>create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability</li> <li>understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.</li> </ul>					
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	Year 7		Year 8		Year 9	
Subject focus	Spreadsheets	Databases	Spreadsheets	Creative multimedia	Spreadsheets	PowerPoints and emails

KS3 Term 3	<b>Pupils should be able to:</b> <ul style="list-style-type: none"> <li>understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem</li> <li>use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions</li> <li>understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]</li> <li>understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems</li> </ul>					
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	Year 7		Year 8		Year 9	
Subject focus	Programming - Scratch	Programming - Scratch	Programming - Scratch	Python turtle/ Microbit	Programming —Python	Python Turtle/ Micro-bit

ICT and Computing curriculum

**KS4 pupils at Woolton High School level 1 & 2 Functional Skills ICT**

Level 1 Functional Skills	Level 2 Functional Skills
<ul style="list-style-type: none"> <li>identify the ICT requirements needed to solve a straightforward task and apply their knowledge and understanding to produce an appropriate solution (complexity)</li> <li>apply their knowledge and skills within a non-routine but familiar context (familiarity)</li> <li>apply a range of techniques in a number of applications to produce an appropriate outcome (technical demand)</li> <li>• solve problems that are essentially instructor/ tutor guided, demonstrating the confidence to make informed choices and knowing when to seek guidance (independence)</li> </ul>	<ul style="list-style-type: none"> <li>Analyse multi-step tasks and separate the components, identifying the relevant ICT requirements and applying their knowledge and understanding to produce an appropriate solution (complexity)</li> <li>apply their knowledge, skills and understanding within non-routine and non-familiar contexts (familiarity)</li> <li>demonstrate the application of a wide range of techniques across several applications to produce an appropriate outcome (technical demand)</li> <li>solve problems independently, overcoming challenges to produce successful outcomes (independence)</li> </ul>

**KS4 Long term plan**

KS4 Term 1	<b>All pupils should be able to:</b> <ul style="list-style-type: none"> <li>develop their capability, creativity and knowledge in computer science, digital media and information technology</li> <li>understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to identify and report a range of concerns.</li> </ul>			
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	Year 10		Year 11	
Subject focus	Ethical, Legal and environment issues —Desktop publishing	Searching information & Desktop publishing	Ethical Legal and environment issues —Desktop publishing	Searching information & Desktop publishing

KS4 Term 2	<b>All pupils should be able to:</b> <ul style="list-style-type: none"> <li>develop their capability, creativity and knowledge in digital media and information technology</li> <li>develop and apply their analytic, problem-solving, design, and computational thinking skills</li> <li>understand how changes in technology affect safety, including new ways to protect their online privacy &amp; identity, and how to identify and report concerns.</li> </ul>			
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	Year 10		Year 11	
Subject focus	Spreadsheets	Security and Emails	Spreadsheets	Security and Emails

KS4 Term 3	<b>All pupils should be able to:</b> <ul style="list-style-type: none"> <li>develop their capability, creativity and knowledge in computer science, digital media and information technology</li> <li>develop and apply their analytic, problem-solving, design, and computational thinking skills</li> <li>understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to identify and report a range of concerns.</li> </ul>			
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	Year 10		Year 11	
Subject focus	Functional Skills revision	Web Development	Functional Skills revision	