

All things are possible for one who believes – Mark 9:23.

At Waverley Abbey School, it is our aim to prepare children with the skills and knowledge needed to be active participants in an ever changing digital world. Our approach to computing aims to develop a growth-mindset in our pupils with increasingly ambitious challenges as they master the various strands of computing. We equip pupils with the skills vital for their future prospects and to achieve their goals. At Waverley Abbey, we understand that pupils are unique and come to school with their own experiences of computing. Our teaching approach is able to support those who need it, and stretch those who are most able. All pupils develop key skills in computer science, information technology, digital literacy and online safety. This prepares them for their future education and the endless possibilities that the world can offer them.

Pupils should be 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.

Curriculum enrichment – Safer Internet Day (Tuesday, 7th February 2023)

Y3 – Explain the ways someone might change their identity depending on what they are doing. I can explain some strategies for keeping my password secret.

Y4 – Understand how I can search online to find information about others. I can explain ways that some of the information about others could have been created, copied or shared by others online.

Y5 – I understand how identity can be copied or modified online.

Y6 – I understand how someone would report online bullying in different contexts. I can describe different age-related content systems eg PEGI, BBFC. I understand features of persuasive design and how to keep users engaged.

		Year 3	Year 4	Year 5	Year 6
Topics studied	Aut 1	Digital literacy and online safety Online safety Sending emails	Digital literacy and online safety Online safety	Digital literacy and online safety Online safety	Digital literacy and online safety Online safety
	Aut 2	Computer Science Scratch	Computer Science Further coding with Scratch	Digital Literacy Search Engines	Computer Science Intro to Python
	Spring 1	Continue Computer Science Scratch	Digital Literacy/information technology HTML	Information technology Stop motion animation visualisers	Information technology Bletchley Park 1
	Spring 2	Information technology Top Trump databases	Information technology Website design	Information technology TinkerCAD	Information technology Big Data 1
	Sum 1	Information technology Using devices Flipcam/digital cam (Animal documentary)	Computer Science Computational thinking	Computer Science Programming with music	Information technology Web-based data delivery services - Digimaps
	Sum 2	Computer Science journey inside a computer <i>Inputs and outputs</i> <i>Building a paper laptop</i> <i>Following instructions</i> <i>Computer memory</i>			Computer Science Understanding computer networks

National Curriculum statements		Year 3	Year 4	Year 5	Year 6
<p>Key skills to progress – Computer Science (CS)</p>	<p>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.</p>	<p>Hardware</p> <ul style="list-style-type: none"> • Understanding what the different components of a computer do and how they work together • Drawing comparisons across different types of computers • Learning what a server does <p>Computational thinking</p> <ul style="list-style-type: none"> • Using decomposition to explain the parts of a laptop computer • Using decomposition to explore the code behind an animation • Using repetition in programs • Understanding that computers follow instructions • Using an algorithm to explain the roles of different parts of a computer • Using logical reasoning to explain how simple algorithms work • Explaining the purpose of an algorithm • Forming algorithms independently • Using logical thinking to explore more complex software; predicting, testing and explaining what it does • Incorporating loops to make code more efficient 	<p>Computational thinking</p> <ul style="list-style-type: none"> • Solving problems by decomposing them into smaller parts • Using decomposition to understand the purpose of a script of code • Using decomposition to help solve problems • Identifying patterns through unplugged activities • Using past experiences to help solve new problems • Using abstraction to identify the important parts when completing both plugged and unplugged activities • Creating algorithms for a specific purpose • Coding a simple game • Using abstraction and pattern recognition to modify code • Incorporating variables to make code more efficient • Remixing existing code • Using a more systematic approach to debugging code, justifying what is wrong and how it can be corrected 	<p>Computational thinking</p> <ul style="list-style-type: none"> • Decomposing animations into a series of images • Decomposing a program without support • Predicting how software will work based on previous experience • Writing more complex algorithms for a purpose • Iterating and developing their programming as they work • Beginning to use nested loops (loops within loops) • Debugging their own code • Writing code to create a desired effect • Using a range of programming commands • Using repetition within a program • Amending code within a live scenario 	<p>Hardware</p> <ul style="list-style-type: none"> • Learning about the history of computers and how they have evolved over time • Using the understanding of historic computers to design a computer of the future • Understanding and identifying barcodes, QR codes and RFID • Identifying devices and applications that can scan or read barcodes, QR codes and RFID • Acknowledging that corruption can happen within data during transfer (for example when downloading, installing, copying and updating files) • Understanding that computer networks provide multiple services <p>Computational thinking</p> <ul style="list-style-type: none"> • Decomposing a program into an algorithm • Using past experiences to help solve new problems • Writing increasingly complex algorithms for a purpose • Debugging quickly and effectively to make a program more efficient • Remixing existing code to explore a problem • Using and adapting nested loops • Programming using the language Python • Changing a program to personalise it • Evaluating code to understand its purpose • Predicting code and adapting it to a chosen purpose

		<ul style="list-style-type: none"> • Remixing existing code • Using a more systematic approach to debugging code, justifying what is wrong and how it can be corrected 			
Key skills to progress – Information Technology (IT)	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.	<p>Using software</p> <ul style="list-style-type: none"> • Taking photographs and recording video to tell a story. • Using software to edit and enhance their video adding music, sounds and text on screen with transitions <p>Using data</p> <ul style="list-style-type: none"> • Understanding the vocabulary associated with databases: field, record, data • Learning about the pros and cons of digital versus paper databases • Sorting and filtering databases to easily retrieve information • Creating and interpreting charts and graphs to understand data 	<p>Using software</p> <ul style="list-style-type: none"> • Understanding that websites can be altered by exploring the code beneath the site • Building a web page and creating content for it • Designing and creating a webpage for a given purpose 	<p>Using software</p> <ul style="list-style-type: none"> • Using logical thinking to explore software more independently, making predictions based on their previous experience • Using video editing software to animate • Identify ways to improve and edit an animation • Independently learning how to use 3D design software package TinkerCAD • Create and manipulate a range of 3D shapes using CAD software 	<p>Using software</p> <ul style="list-style-type: none"> • Using search and word processing skills to create a presentation • Planning, recording and editing a radio play • Creating and editing sound recordings for a specific purpose • Creating and editing videos, adding multiple elements: music, voiceover, sound, text and transitions to create a video advert <p>Using data</p> <ul style="list-style-type: none"> • Understanding how barcodes, QR codes and RFID work
Key skills to progress – Digital Literacy and online safety (DL)	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	<p>Using the Internet and email</p> <ul style="list-style-type: none"> • Learning to be a responsible digital citizen; understanding their responsibilities to treat others respectfully and recognising when digital behaviour is unkind • Learning about cyberbullying 	<p>Using the Internet</p> <ul style="list-style-type: none"> • Understanding why some results come before others when searching • Understanding that information on the internet is not all grounded in fact • Recognising what appropriate behaviour is when collaborating with others online • Recognising that information on the Internet might not be true or 	<p>Using the Internet</p> <ul style="list-style-type: none"> • Developing searching skills to help find relevant information on the internet • Understanding how apps can access our personal information and how to alter the permissions. • Identifying possible issues with online communication • Considering the effects of screen-time on physical and mental wellbeing • Learning about online bullying and where to seek advice 	<p>Using the Internet</p> <ul style="list-style-type: none"> • Understanding the importance of secure passwords and how to create them, along with two-step authentication • Using search engines safely and effectively • Recognising that updated software can help to prevent data corruption and hacking

	<p>(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.</p>	<ul style="list-style-type: none"> • Learning that not all emails are genuine, recognising when an email might be fake and what to do about it • Learning that not all information on the internet is factual • Understanding who personal information should/ should not be shared with <p>Using email</p> <ul style="list-style-type: none"> • Learning to log in and out of an email account • Writing an email including a subject, 'to' and 'from' • Sending an email with an attachment • Replying to an email 	<p>correct and that some sources are more trustworthy than others</p> <ul style="list-style-type: none"> • Learning about different forms of advertising on the internet. 		<ul style="list-style-type: none"> • Considering their digital footprint and online reputation and future implications they may have • Learning about how to collect evidence and report online bullying concerns
<p>Links to school values</p>	<p>Growth - The computing curriculum supports pupils as they seek to grow in courage as they discover their God-given potential.</p> <p>Compassion - Understanding how our behaviour online affects others.</p> <p>Honesty – The online safety teaching supports children in staying safe and making good choices in their spiritual journey.</p> <p>Courage – Computer science teaching encourages children to persevere with problems and develop a growth mindset. Where at first they encounter a problem, they can stick at it and achieve success</p> <p>Hope – Believe that technology can be used for good.</p> <p>Love - Showing love to others in a digital world.</p>				