Computing Progression Map – Woburn Lower School 2023-2024

Area of Learning		Key Stage 1		Lower Key Stage 2	
		Year 1	Year 2	Year 3	Year 4
Computer Science	**Knowledge**	• Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. • Create and debug simple programs. • Use logical reasoning to predict the behaviour of simple programs.	• Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. • Create and debug simple programs. • Use logical reasoning to predict the behaviour of simple programs	• 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	• 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.	provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration.
	Skills	• Children begin to understand that an algorithm is a precise, step by step instruction used to solve a problem or achieve an objective. • Children can use directional language to support their programming. • Children can order events to program and debug algorithms. • Children can identify that an unexpected outcome is a 'bug' and that these can be debugged using logical steps. • Children can begin to predict the outcome of a program by looking at the instructions or code.	• Children understand that an algorithm is a precise, step by step instruction used to solve a problem or achieve an objective. Children are precise when creating an algorithm. • Children use their current knowledge and apply logic when creating an algorithm rather than a constant 'trial and error' approach. • Children show an understanding of the 'cause and effect' needed for programming. • Children can identify that an unexpected outcome is a 'bug' and that these can be debugged using logical steps. • Children can predict the outcome of a program by looking at the instructions or code.	• Children can turn a real-life situation into an algorithm by breaking down its component parts. This includes simulating physical systems e.g. speeds and angles. • Children can create a sequential algorithm. • Children begin to use x,y and 'if' statements. • Children begin to use variables and explain their purpose. Children begin to use timings and repeats. • Children consistently use their current knowledge and apply logic when creating an algorithm rather than a constant 'trial and error' approach. • Children understand 'cause and effect' needed for programming. Children can confidently identify	• Children design algorithms for a purpose (e.g. real life situations) Children make more intuitive attempts to debug their own programs. • Children's use of programming commands is becoming more logical and deployed with increasing ease. • They understand 'if statements' and combine these with variables to achieve a desired outcome. They can use and manipulate the value of variables. • Children can make use of user inputs and outputs such as 'print to screen'. • They can trace code and use step-through methods to identify errors in code and make logical attempts to correct this. Children

				that an unexpected outcome is a 'bug' and that these can be debugged using logical steps. Children can predict the outcome of a program by looking at the instructions or code.	can predict the outcome of a an algorithm • Children recognise the main component parts of hardware which allow computers to join and form a network.
Information Technology	**Knowledge**	• Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	• Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	• 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 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.
	Skills	• Children can login using their own usernames and passwords. • Children can save learning into a folder. • Children can retrieve learning from a folder	• Children can organize their learning in a coherent method to aid in the saving and retrieving of files. • Children can use simple databases to analyse information.	• Children can use simple searches to retrieve information and digital content. • Children are aware some searches are local to a machine and others take	• Children understand the function, features and layout of a search engine. • They can appraise selected webpages for credibility and information at a basic

		• Children are becoming familiar with icons such as save, print, open and new.	• Children can edit more complex digital data such as music compositions. • Children use a range of media, including importing previously created media, for a desired purpose.	place through the internet. • Children can use databases to collect, analyse and evaluate information using a selection of software. • Children use appropriate software for appropriate tasks. • Children understand and use email attachments.	level. Children can make improvements to digital solutions based on feedback. • Children make informed software choices when presenting information and data. Children share digital information through appropriate platforms.
Digital Literacy	**Knowledge**	• Recognise common uses of information technology beyond school • 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.	• Recognise common uses of information technology beyond school • 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.	• Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact.	• Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact.

	Skills	• Children can discuss why their password needs to be kept safe and private. • Children can investigate objects to see if they use digital technology outside of school. • Children can discuss the steps to take if worried about something online. • Children begin to discuss the differences between old and new technology.	• Children are confident to discuss why their password needs to be kept safe and private. • Children know the implications of inappropriate searches. • Children can identify different trusted adults who can support them to stay safe online. • Children begin to understand how information is shared electronically and the e-safety implications of information sharing. • Children show an understanding of e-mail safety and etiquette.	• Children model password security consistently. • Children can identify multiple ways to keep themselves safe online e.g. trusted adults, content filters, safe searching techniques. • Children demonstrate the importance of having a secure password and not sharing this with anyone else. • They understand the importance of staying safe and the importance of their conduct when using familiar communication tools such as 2Email in Purple Mash. They know more than one way to report unacceptable content and contact	• Children can explore key concepts relating to online safety. • They can help others to understand the importance of online safety. • Children know a range of ways of reporting inappropriate content and contact.

Core Language Progression

Early Years	Key Stage One		Lower Key Stage Two	
	Year 1	Year 2	Year 3	Year 4
Click Computer Disks	Algorithm Avatar Coding	Animation Arrow Key Attachment	Address Book Audio Blog	Bold Computer Virus

Headphones Keyboard Laptop Monitor Mouse Speaker Tablet Type	Data Debug Input Instruction Internet Login Log out Notification Output Password Programme Repetition Save Selection Sequence Undo Username	Backspace Cells Copy and Paste Cursor Digital Footprint E-Book Email Font File Search Search Engine	Bottom Row Keys CC Command Communication technology Concept Map Design Templates Execute Flowchart Formatting Function Hardware Home Row Keys Information technology Logic Media Nesting Network Output PEGI Rating Presentation Procedure Programming language Save Draft Slideshow Software Spacebar Spoof Website Textbox Text Formatting Top Row Keys Variable Webpage	Cookies Copywrite Easter Egg Frame Identity theft Italic Malware Motherboard Phishing Plagiarism RAM Spam Stop Motion Transition Underline