

Computing

How to think like a computer scientist:

What do I want to achieve? What will I use to achieve my goal? Does it work? Can I detect any errors? Can I correct any errors? What is the problem? I can I solve this problem? How can I use this technology safely and responsibly? How can I collect, analyse, evaluate and present my information?

Year 1				
	Multimedia: text, sound, images and motion	Coding and programming	Using technology safely and responsibly	Technology in our lives
Vocabulary – technology, computer, tablet, Chromebook, iPad, record, touchpad, mouse, keyboard, save, open, icon, file, e-book, algorithm, debugging, Beebot, instructions, sequence, predict, login, password				
Autumn			<ul style="list-style-type: none"> To identify the importance of keeping personal information private. To understand the importance of saving, storing and organising their work. 	<ul style="list-style-type: none"> To recognise the ways we use technology in school and at home and learn about different electronic devices. To learn how to log on to the school Chromebooks and Macs. To start learning how to use a touchpad and keyboard. To begin learning how to open programs and how to save and retrieve files. <i>(Teach Computing)</i>
Spring	<ul style="list-style-type: none"> To use technology to create pictures and record sounds. To learn how to save and retrieve information from the internet on an iPad. To create an e-book on an iPad using Book Creator. 		<ul style="list-style-type: none"> To learn how to retrieve digital content from the internet safely, knowing where to go for support if needed. To understand how to use the internet safely and responsibly. <i>(Internet Safety Day)</i> 	<ul style="list-style-type: none"> To understand that technology is used in the wider world to create books, art and audio and how it can make the process quicker.
Summer		<ul style="list-style-type: none"> To begin learning that an algorithm is a set of instructions for a specific task and that it can be used to make a process quicker. To write algorithms for a Beebot by pressing buttons and 		

		<p>predicting what will happen for a sequence of instructions.</p> <ul style="list-style-type: none"> • To understand that debugging is the process of finding mistakes in an algorithm. • To begin debugging by finding errors in an a Beebot algorithm and trying to correct them. <p><i>(Barefoot Computing)</i></p>		
Year 2				
	Multimedia: text, sound, images and motion	Coding and programming	Using technology safely and responsibly	Technology in our lives
Vocabulary – technology, computer, tablet, Chromebook, iPad, touchpad, mouse, keyboard, save, open, retrieve, copy, paste, space bar, delete, backspace, home keys, code, program, algorithm, debugging, tinkering, Beebot, instructions, sequence, predict, login, password, file, icon				
Autumn			<ul style="list-style-type: none"> • To learn how to log on to a website safely. • To understand the importance of keeping login details private. 	<ul style="list-style-type: none"> • To learn how to copy and paste on a Chromebook or Mac. • To know how to use the space bar, delete button and backspace on a keyboard. • To begin learning how to touch type on a keyboard and understand why it is an important skill to learn. <i>(Typing Club)</i>
Spring	<ul style="list-style-type: none"> • To create a Google Docs document containing text and pictures using copy and paste. • To save and retrieve files on a Chromebook or Macbook. 		<ul style="list-style-type: none"> • To use the internet safely to research a topic. • To know where to go for support if they come across something they are unsure about. • To understand how to stay safe online. <i>(Internet Safety Day)</i> 	
Summer		<ul style="list-style-type: none"> • To understand that we can make programs in software like Scratch by writing algorithms in lines of code. 		

		<ul style="list-style-type: none"> • To explore programs in Scratch Jr and predict what will happen when they make changes to the code. • To understand that making changes to the code is called tinkering. • To create an animated 'knock knock' joke by writing and debugging algorithms in Scratch Jr. (<i>Barefoot Computing</i>) 			
Year 3					
	Multimedia: text, sound, images and motion	Coding and programming	Using technology safely and responsibly	Technology in our lives	Data Handling
	Vocabulary – technology, computer, tablet, Chromebook, iPad, touchpad, mouse, keyboard, save, open, retrieve, copy, paste, space bar, delete, backspace, home keys, code, program, algorithm, debugging, tinkering, instructions, sequence, predict, sprite, Google, Google Slides, slide, animation, Google Forms, digital content, icon, file				
Autumn	<ul style="list-style-type: none"> • To create a presentation document around a topic using Google Slides. 		<ul style="list-style-type: none"> • To use the internet safely and responsibly to retrieve digital content. • To know how and where to report any concerns they might have about content they find. 	<ul style="list-style-type: none"> • To learn how to confidently save, print, copy, paste and open documents on Chromebooks or Macs. • To use continue using internet search technologies effectively. • To continue learning how to touch type on a keyboard. (<i>Typing Club</i>) 	
Spring	<ul style="list-style-type: none"> • To present simple data and information from a survey using Google Docs. 		<ul style="list-style-type: none"> • To understand how to communicate safely and responsibly on the internet and to know how and where to report any concerns. • To understand how to stay safe online. (<i>Internet Safety Day</i>) 	<ul style="list-style-type: none"> • To understand how data is collected and analyzed using computer programs in the wider world. 	<ul style="list-style-type: none"> • To create a simple survey using Google Forms. • To collect, analyse and evaluate data using Google Forms.

Summer		<ul style="list-style-type: none"> • To create simple algorithms that make a sprite move. • To understand that a sprite is a computer image that performs actions in a program. • To debug errors in a Scratch algorithm. • To create sequences by linking lines of code together. • To understand the importance of the sequence of commands in a program. <i>(Teach Computing)</i> 			
Year 4					
	Multimedia: text, sound, images and motion	Coding and programming	Using technology safely and responsibly	Technology in our lives	Data Handling
	<p>Vocabulary – technology, computer, tablet, Chromebook, iPad, touchpad, mouse, keyboard, save, open, retrieve, copy, paste, space bar, delete, backspace, code, program, algorithm, debugging, tinkering, instructions, sequence, predict, reasoning, loops, infinite loop, controlled loop, repetition, repeat...until, digital content, input, output, the internet, website, internet search, Google, Bing, World Wide Web, spreadsheet, data, formula, analyse, evaluate</p>				
Autumn	<ul style="list-style-type: none"> • To collaborate as a class to create a website using Google Sites. 		<ul style="list-style-type: none"> • To learn how to communicate safely and responsibly online and to know how and where to report any concerns. • To learn how to use search technologies safely and responsibly. 	<ul style="list-style-type: none"> • To understand how computer networks work and to identify different inputs and outputs in a network. • To understand how the internet works and the difference between the internet and the World Wide Web. • To understand how search engines work and how to use search 	

				<ul style="list-style-type: none"> technologies effectively. To understand how web designers use similar software to design websites in the wider world. 	
Spring			<ul style="list-style-type: none"> To understand how to stay safe online. <i>(Internet Safety Day)</i> 	<ul style="list-style-type: none"> To continue learning how to touch type on a keyboard and to explain why typing is an important skill to learn. <i>(Typing Club)</i> To understand how computers are used to handle data quickly and efficiently. 	<ul style="list-style-type: none"> To collect and record data and input it into Google Sheets. To analyse and evaluate a set of data. To use formulas in spreadsheets to convert data. <i>(Barefoot Computing)</i>
Summer		<ul style="list-style-type: none"> To understand that repetition and loops can be used in a program to save time. To use repetition, infinite loops and count controlled loops in a program using repeat commands. To use logical reasoning and debugging skills to detect and correct errors in an algorithm. <i>(Teach Computing)</i> 		<ul style="list-style-type: none"> 	
Year 5					
	Multimedia: text, sound, images and motion	Coding and programming	Using technology safely and responsibly	Technology in our lives	Data Handling
	Vocabulary – technology, computer, tablet, Chromebook, iPad, touchpad, mouse, keyboard, save, open, retrieve, copy, paste, space bar, delete, backspace, code, program, algorithm, debugging, tinkering, instructions, sequence, predict, reasoning, repetitions, if...then, repeat... until, loops, events, timed events, if...then, repeat... until, if...else, digital content, the internet, website, internet search, spreadsheet, data, database, field, records, group, sort, formula, analyse, evaluate, collect, presentation, Google Forms, Google Slides,				

	stop motion, animation, video editing, edit, green screen, import, trim, split, storyboard, shots, special effects, animations, transitions				
Autumn				<ul style="list-style-type: none"> • To continue learning how to touch type on a keyboard. (<i>Typing Club</i>) • To understand that many jobs in the wider world require typing as a skill. • To understand that computers are used to store data as they have the capacity to hold incredibly large amounts of information. 	<ul style="list-style-type: none"> • To understand that a database is a collection of information stored in a single table. • To learn how to group and sort information in a database. • To know how to search a database for specific information. (<i>Teach Computing</i>)
Spring	<ul style="list-style-type: none"> • To produce a green screen video using iPads, a green screen and video editing software. • To produce a stop motion animation using modelling materials, iPads, a green screen and video editing software. 		<ul style="list-style-type: none"> • To learn how to share videos safely, securely and responsibly and recognise the dangers of sharing videos online. • To know how and where to report concerns about content or contact they experience online. • To understand how to stay safe online (<i>Internet Safety Day</i>). 	<ul style="list-style-type: none"> • To learn how to use video editing software to produce videos. • To understand how green screen technology works in videos and images. • To understand how stop motion animation works and how it could be used with green screen technology. • To understand how people working in film/TV production use cameras, video editing software and green screen technology to make films. 	
Summer		<ul style="list-style-type: none"> • To begin using events and timed events in programs. • To start adding conditionals into programs using if/else and if/then statements. • To continue using sequences, repetition and loops in programs 			

		<p>using repeat...until and repeat...while commands.</p> <ul style="list-style-type: none"> To start debugging larger amounts of code. (<i>Hour of Code</i>) 			
Year 6					
	Multimedia: text, sound, images and motion	Coding and programming	Using technology safely and responsibly	Technology in our lives	Data Handling
Vocabulary — technology, computer, tablet, Chromebook, iPad, touchpad, mouse, keyboard, save, open, retrieve, copy, paste, space bar, delete, backspace, code, program, algorithm, debugging, tinkering, instructions, sequence, predict, reasoning, repetitions, if...then, repeat... until, if...else, decomposition, digital content, the internet, website, internet search, spreadsheet, data, formula, analyse, evaluate, collect, presentation					
Autumn				<ul style="list-style-type: none"> To continue learning how to touch type on a keyboard and to understand why the skill will be so important in secondary school. (<i>Typing Club</i>) To understand how computers can be used to display data visually in a variety of ways. 	<ul style="list-style-type: none"> To collect, analyse and evaluate data using Google Sheets. To present data in a range of different ways using Google Sheets. (<i>Teach Computing</i>)
Spring	<ul style="list-style-type: none"> To produce digital music using Garageband on iPads using techniques such as sampling and repetition in producing music. 		<ul style="list-style-type: none"> To understand how to stay safe online (Internet Safety Day) 	<ul style="list-style-type: none"> To learn that music can be produced electronically as well as on instruments, or by using a combination of both. To learn that professional musicians record music using digital technology and how this can be easier and more accessible than traditional methods. 	

Summer		<ul style="list-style-type: none">• To understand the difference between an input and output and investigate examples of both using a Microbit.• To plan, design and program a working game in Scratch.• To debug errors in a Scratch game using logical reasoning and decomposition to break the code into smaller parts.• To present and demonstrate a working game with a inputs and outputs using Microbits.		<ul style="list-style-type: none">• To understand that game designers design video games by designing and debugging algorithms.	
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