

Curriculum Overview – Computing

Year group	Term	NC Objectives	Key Skills and Knowledge
Reception	Autumn	FS 30-50months Knows how to operate simple equipment. -Shows an interest in technological toys with knobs or pulleys, or real objects. -Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. -Knows that information can be retrieved from computers.	<ul style="list-style-type: none"> supported use of easi-ears, use of electronic role play equipment such as microwave, cash tills etc explore desktop computer programs e.g Early Years ICT
	Spring	FS 40-60months Completes a simple program on a computer. -Interacts with age-appropriate computer software.	<ul style="list-style-type: none"> complete simple computer programs on desktops and iPads e.g Busy Things introduce use of Beebots introduce use of remote control cars/walkie talkies use easi ears independently take photographs using iPad/camera continue more independent use of iPads/desktop to complete more complex programs
	Summer	FS Early Learning Goal Children recognise that a range of technology is used in places such as homes and schools. -They select and use technology for particular purposes.	<ul style="list-style-type: none"> log on to laptops and complete simple drawing programs use remote control cars /walkie talkies independently identify and use appropriate technology in own learning
Year 1	Autumn	-Understand what algorithms are how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions (NC 1) -Create and debug simple programs (NC 2) -Use logical reasoning to predict the behaviour of simple programs (NC 3)	<ul style="list-style-type: none"> Understand that an algorithm is a set of instructions for a specific task and begin using the word algorithm. Write algorithms for a Beebot by pressing buttons and predict what will happen for a short sequence of instructions. Understand that debugging is the process finding mistakes in an algorithm and begin using the word debugging. Find errors in an algorithm or program and try to correct them. <i>(Barefoot Computing: Bee-bots Basic, Bee-bots 1,2 3)</i>
	Spring	Use technology purposefully to create, organise, store, manipulate and retrieve digital content (NC 4) -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 (NC 6)	<ul style="list-style-type: none"> Use technology to paint pictures and record a sound. Use Book Creator software on an iPad to organise digital content and create an e-book. Learn how to save and retrieve information in an iPad. Learn how to retrieve digital content from the internet safely, knowing where to go for support if needed. <i>(Switched on Computing: We are Painters)</i>
	Summer	Use technology purposefully to create, organise, store, manipulate and retrieve digital content (NC 4) -Recognise common uses of information technology beyond school (NC 5) -Use technology safely and respectfully, keeping personal information	<ul style="list-style-type: none"> Recognise the way we use technology in school and at home and learn about different electronic devices such as PCs, Laptops, Chromebooks, tablets and Apple products.

Curriculum Overview – Computing

		private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies (NC 6)	<ul style="list-style-type: none"> Learn how to log on to the school laptops and identify the importance of keeping personal information private. Learn how to use the touchpad/mouse and keyboard. <p>Learn how to open programs on a laptop and how to save and retrieve files.</p>
Year 2	Autumn	Use technology purposefully to create, organise, store, manipulate and retrieve digital content (NC 4)	<ul style="list-style-type: none"> Learn how to copy and paste on a laptop. Learn how to use the space bar, delete button and backspace on a keyboard. Learn how to touch type on a keyboard. <p><i>(Touch typing club)</i></p>
	Spring	Use technology purposefully to create, organise, store, manipulate and retrieve digital content (NC 4) -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 (NC 6)	<ul style="list-style-type: none"> Use the internet safely to research a topic. Create a Word document on a laptop containing text and pictures using copy and paste. Learn how to save and retrieve files accurately on a laptop.
	Summer	Understand what algorithms are how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions (NC 1) -Create and debug simple programs (NC 2) -Use logical reasoning to predict the behaviour of simple programs (NC 3)	<ul style="list-style-type: none"> Learn about how <i>Scratch works</i> and how it can be used to create programs using lines of code. Explore programs in Scratch Jr and play around with the code. Understand that this is called tinkering. Create an animated knock knock joke by writing and debugging code in Scratch Jr. <p><i>(Barefoot: Tinkering with Scratch Jr, Scratch Jr Knock Knock Joke Activity)</i></p>
Year 3	Autumn	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 (NC 12) -Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact (NC 13)	<ul style="list-style-type: none"> Learn how to save, print, and open documents on laptops and Macs. Create a PowerPoint document using the skills saving, opening, copying, pasting and typing. Use the internet safely and responsibly to retrieve digital content.
	Spring	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts (NC 7) - Use sequence, selection, and repetition in programs; work with variables and various forms of input and output (NC 8) -Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs (NC 9)	<ul style="list-style-type: none"> Explore Scratch by tinkering with an existing project and playing with the code, identifying the sequence of commands. Start writing code in a blank Scratch project, creating simple algorithms that make a sprite move. Detect and correct errors in a Scratch algorithm. <p><i>(Barefoot: Scratch tinkering activity)</i></p>
	Summer	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,	<ul style="list-style-type: none"> Think of a question to investigate and create a survey using a word processor on laptops. Collect and analyse the data and present it in Google forms.

Curriculum Overview – Computing

		analysing, evaluating and presenting data and information (NC 12)	(Switched on Computing: We are opinion pollsters)
Year 4	Autumn	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 (NC 10) -Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact (NC 13)	<ul style="list-style-type: none"> Understand how the internet works and discuss the difference between the internet and the World Wide Web. Learn how communicate safely and responsibly online. (Switched On Computing: We are network engineers)
	Spring	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 (NC 10) -use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content (NC 11) - Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact (NC 13)	<ul style="list-style-type: none"> Learn how search engines select and rank results and how to use search technologies effectively and safely. Collaborate as a class to create a website about internet safety and responsible use of the internet using Google sites. (Switched On Computing: We are web developers)
	Summer	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts (NC 7) - Use sequence, selection, and repetition in programs; work with variables and various forms of input and output (NC 8) -Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs (NC 9)	<ul style="list-style-type: none"> Use logical reasoning to debug a program in Scratch demonstrating the water cycle. Create and debug a simple animated cartoon in Scratch (Barefoot: Bug in the water cycle) (Switched on: We are programmers)
Year 5	Autumn	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 (NC 12)	<ul style="list-style-type: none"> Learn how to use iMovie on iPads and Macs to edit and produce videos. Learn how green screen technology works and how to effectively use a green screen using the Do Ink app. Learn how stop motion animation works and how it could be used with green screen technology.
	Spring	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 (NC 12) -Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact (NC 13)	<ul style="list-style-type: none"> Use a range of software including Do Ink and iMovie to design, create and edit a short film using a green screen. Learn how to share videos safely, securely and responsibly and recognise the dangers of sharing videos online on platforms such as Youtube.
	Summer	Design, write and debug programs that accomplish specific goals, including	- Create and debug an animation in Scratch using 'if...then...' commands.

Curriculum Overview – Computing

		<p>controlling or simulating physical systems; solve problems by decomposing them into smaller parts (NC 7)</p> <p>- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output (NC 8)</p> <p>-Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs (NC 9)</p>	<ul style="list-style-type: none"> • Solve problems using logical reasoning and decomposition to split a program into smaller parts. • Use repetitions in a sequence using 'repeat...until...' commands. <i>(Barefoot: Animated poem decomposition)</i>
Year 6	Autumn	<p>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts (NC 7)</p> <p>- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output (NC 8)</p> <p>-Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs (NC 9)</p>	<ul style="list-style-type: none"> • Plan, design and program a working game in Scratch. • Debug errors in a game in Scratch using logical reasoning and decomposition. • Present and demonstrate a working game. <i>(Barefoot : Make a Game Project)</i>
	Spring	<p>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 (NC 12)</p> <p>-Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact (NC 13)</p>	<ul style="list-style-type: none"> • Learn that music can be produced electronically as well as on instruments, or by using a combination of both. • Learn about techniques such as sampling and repetition in producing music. • Produce digital music using Garageband on iPads <i>(Musicworks)</i>
	Summer	<p>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts (NC 7)</p> <p>- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output (NC 8)</p> <p>-Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs (NC 9)</p>	<ul style="list-style-type: none"> • I can explain the difference between an input and output and give examples of each. • Investigate different outputs by programming a moving toy using Lego WeDo. <i>(Barefoot: Investigating Outputs)</i>