

Computing Whole School Overview

In Computing, children in KS1 and KS2 will mainly be taught using the National Centre for Computing Education (NCCE), Teach Computing curriculum set out by the Department for Education (DfE). We have ensured that all areas of the National Curriculum are covered as well as the three of the strands of computing (see below). The Teach Computing Curriculum is a spiral curriculum, which means topics like programming are taught every year for 6 to 12 weeks. In EYFS the children will complete computing tasks related to their learning that half term. Some of these units will be units from Barefoot Computing at School and others will be lessons where the children use technology in their setting e.g. beebots and sound recorders. When teaching online safety teachers will use the Project Evolve curriculum to supplement their lessons. Eight key areas of online safety will be taught over the course of a 2-year cycle. These will then be revisited as the children progress through school. The teaching of computing allows our children to be prepared for the digital world that we are living in and provides them with the foundations needed in order to progress through KS1 and KS2 and beyond. The teaching of computing is progressive and has links to other subjects such as; Maths, Science and DT. There are opportunities for both formative and summative assessment planned into lessons.

Three strands of computing:

Information technology: The use of computers for functional purposes such as collecting and presenting information or using search technology.

Computer Science: Introduces children of all ages to understanding how computers and networks work. It also gives all children the opportunity to learn basic computer programming, from simple floor robots in Years 1 and 2, right up to creating on-screen computer games and programmes by Year 6.

Digital literacy: This is about the safe and responsible use of technology, including recognising its advantages for collaboration or communication. This also includes the skills and knowledge required to be an effective safe and discerning user of a range of computer systems.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery	Computer Science	Computer Science	Information Technology	Computer Science	Computer Science	Computer Science
	Busy Bodies- <i>Barefoot</i> <i>Computing Unit</i> <i>Online safety: Self-image</i> <i>and identity- Project Evolve</i>	Autumn- <i>Barefoot</i> <i>Computing Unit</i>	Use recordable technology to add sound effects/speech to a story. Online safety: Online relationships- Project Evolve.	Technology around us To identify technology in the home and school. Online safety: Online bullying- Project Evolve.	Springtime -Barefoot Computing Unit	Programmable toys- beebot- link to minibeasts. <i>Online safety: Privacy and</i> <i>security- Project Evolve.</i>



Reception	Information Technology	Computer Science	Computer Science	Computer Science	Computer Science	Computer Science
	Digital Painting To use a paint app to create a self-portrait. Online safety: Health, wellbeing and lifestyle- Project Evolve	Moving programmable toys- cars/beebots Online safety: Online reputation- Project Evolve	Winter Warmer <i>-Barefoot</i> <i>Computing Unit</i>	Technology around us To identify technology linked to people who help us such as x-rays. Online safety: Managing online information- Project Evolve	Boats Ahoy- <i>Barefoot</i> <i>Computing Unit</i>	Summer- <i>Barefoot</i> <i>Computing Unit</i> <i>Online safety: Copyright</i> <i>and ownership- Project</i> <i>Evolve</i>
Year 1	Computer Science COMPUTING SYSTEMS AND NETWORKS	Information Technology CREATING MEDIA	Computer Science PROGRAMMING A	Information Technology DATA AND INFORMATION	Information Technology CREATING MEDIA	Computer Science PROGRAMMING B
	Technology around us	Digital Painting	Moving a robot	Grouping data	Digital writing	Introduction to animation
	To identify technology. To identify a computer and its main parts. To use a mouse in different ways. To use a keyboard to type. To use the keyboard to edit text. To create rules for using technology responsibly. Digital Literacy skills taught Basic keyboard skills: typing letters, numbers, symbols, backspace, Enter key Additional keyboard skills: Shift key for upper-case	I o describe what different freehand tools do. To use the shape tool and the line tools. To make careful choices when painting a digital picture. To explain why they chose the tools that they used. To independently use a computer to paint a picture. To compare painting a picture on a computer and on paper. Digital Literacy skills taught Basic mouse skills: move, left-click, drag	I o explain what a given command will do. To act out a given word. To combine forwards and backwards commands to make a sequence. To combine four direction commands to make sequences. To plan a simple program. To find more than one solution to a problem. Digital Literacy skills taught Recognise and control programmable toys	I o label objects. To identify that objects can be counted. To describe objects in different ways. To count objects with the same properties. To compare groups of objects. To answer questions about groups of objects. Digital Literacy skills taught Collect, count, group, and compare simple data. <i>Online safety: Online</i> <i>bullying- Project Evolve.</i>	I o use a computer to write. To add and remove text on a computer. To identify that the look of text can be changed on a computer. To make careful choices when changing text. To explain why they have used the tools that they choose. To compare writing on a computer with writing on paper. Digital Literacy Skills taught Basic keyboard skills: typing letters, numbers, symbols,	I o choose a command for a given purpose. To show that a series of commands can be joined together. To identify the effect of changing a value. To explain that each sprite has its own instructions. To design the parts of a project. To use their algorithm to create a program. Online safety: Privacy and security- Project Evolve.
	letters or symbols, arrow keys, Del key	Create and edit (text and images)	Online safety: Online relationships- Project Evolve.		backspace, Enter key	



	Basic mouse skills: move, left-click, drag Use equipment safely Create and edit (text and images) Access computing devices: power, login, etc. Compare technology at home and school Use technology safely and respectfully	Save and open files Contrasting digital/manual creation activities Online safety: Self-image and identity- Project Evolve.			Additional keyboard skills: Shift key for upper-case letters or symbols, arrow keys, Del key Additional mouse skills: scroll, right-click, double- click Create and edit (text and images Save and open files Contrasting digital/manual creation activities.	
Year 2	Computer Science COMPUTING SYSTEMS AND NETWORKS	Information Technology CREATING MEDIA	Computer Science PROGRAMMING A	Information Technology DATA AND INFORMATION	Information Technology CREATING MEDIA Making music	Computer Science PROGRAMMING B
	Information to shool or	Digital photography	Robot algorithms	Pictograms	Ta agu haur munia agu maha	Introduction to quizzes
	around us	To know what devices can be used to take	To describe a series of instructions as a sequence.	To recognise that we can count and compare objects	us feel. To identify that there are	To explain that a sequence of commands has a start.
	To recognise the uses and	photographs.	To explain what happens	using tally charts.	patterns in music.	To explain that a sequence
	features of information	To use a digital device to	when we change the order of	To recognise that objects	To describe how music can	of commands has an
	technology. To identify information	take a photograph. To describe what makes a	Instructions.	can be represented as	be used in different ways.	outcome. To create a program using
	technology in the home	aood photograph	predict the outcome of a	To create a pictoaram	from a series of notes	a aiven desian
	To identify information	To decide how photographs	program (series of	To select objects by	To create music for a	To change a given design.
	technology beyond school.	can be improved.	commands).	attribute and make	purpose.	To create a program using
	To explain how information	To use tools to change an	To explain that programming	comparisons.	To review and refine our	their own design.
	technology benefits us.	image.	projects can have code and	To recognise that people	computer work.	To decide how their project
	To show how to use	To recognise that images	artwork.	can be described by		can be improved.
	information technology	can be changed.	lo design an algorithm.	attributes.		
	safely.	Distant Linear an ability and the	To create and debug a	To explain that we can		Unline safety: Copyright
	To recognise that choices	Lise digital cameras	program that they have	present information using a		ana ownersnip- Project
	information technology	Create and edit (text and	written.	computer.		LVOIVE
	agornation technology.	images)	Diaital Literacy skills taught	Digital Literacy skills tought		
	Digital Literacy skills taught	Save and open files				
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ear 3	Use equipment safely. Compare technology at home and school. Use technology safely and respectfully.	Online safety: Health, wellbeing and lifestyle- Project Evolve Information Technology	Recognise and control programmable toys Online safety: Online reputation- Project Evolve	Contrasting digital/manual creation activities. Collect, count, group, and compare simple data. Online safety: Managing online information- Project Evolve Information Technology	Information Technology	Computer Science
	COMPUTING SYSTEMS AND NETWORKS	CREATING MEDIA	PROGRAMMING A Sequence in music	DATA AND INFORMATION Branchina databases	CREATING MEDIA	PROGRAMMING B
	Connecting Computers To explain how digital devices function. To identify input and output devices. To recognise how digital devices can change the way we work. To explain how a computer network can be used to share information. To explore how digital devices can be connected. To recognise the physical components of a network. Online safety: Self-image and identity- Project Evolve	To explain that animation is a sequence of drawings or photographs. To relate animated movement with a sequence of images. To plan an animation. To identify the need to work consistently and carefully. To review and improve an animation. To evaluate the impact of adding other media to an animation. Digital Literacy skills taught Create multimedia (text, sounds, images, video, and 3D objects) Apply common skills in new contexts	To explore a new programming environment and identify that each sprite is controlled by the commands they have chosen. To explain that a program has a start. To recognise that a sequence of commands can have an order. To change the appearance of their project. To create a project from a task description. <i>Online safety: Online relationships- Project Evolve.</i>	To create questions with yes/no answers. To identify the object attributes needed to collect relevant data. To create a branching database. To identify objects using a branching database. To explain why it is helpful for a database to be well structured. To compare the information shown in a pictogram with a branching database. Digital Literacy skills taught Organise and present data <i>Online safety: Online</i> <i>bullying- Project Evolve.</i>	To recognise how text and images convey information. To recognise that text and layout can be edited. To choose appropriate page settings. To add content to a desktop publishing publication. To consider how different layouts can suit different purposes. To consider the benefits of desktop publishing. Digital Literacy skills taught Make use of cut, copy, paste, as well as formatting tools Create multimedia (text, sounds, images, video, and 3D objects) Select appropriate content (purpose, accuracy Apply common skills in new contexts	To explain how a sprite moves in an existing project. To create a program to move a sprite in four directions. To adapt a program to a new context. To develop their program by adding features. To identify and fix bugs in a program. To design and create a maze-based challenge. Online safety: Privacy and security- Project Evolve.



Year 4	Computer Science	Information Technology	Computer Science	Information Technology	Information Technology	Computer Science
	COMPUTING SYSTEMS	CREATING MEDIA	PROGRAMMING A	DATA AND INFORMATION	CREATING MEDIA	PROGRAMMING B
	AND NETWORKS					
		Audio editing	Repetition in shapes	Data logging	Photo editing	Repetition in games
	The internet	T	T . 1		-	-
		To identify that sound can	To identify that accuracy in	To explain that data	To explain that digital	To develop the use of
	Io describe how networks	be digitally recorded.	programming is important.	gathered over time can be	images can be changed Io	count-controlled loops in a
	physically connect to other	To use a digital device to	To create a program in a text-	used to answer questions.	change the composition of	different programming
	networks.	record sound.	based language.	Io use a digital device to	an image To describe how	environment.
	I o recognise how	Io explain that a digital	Io explain what 'repeat'	collect data automatically.	images can be changed for	To explain that in
	networked devices, make up	recording is stored as a file.	means.	To explain that a data	different uses To make good	programming there are
	the internet.	Io explain that audio can	Io modify a count-controlled	logger collects 'data points'	choices when selecting	infinite loops and count
	To outline how websites can	be changed through editing.	loop to produce a given	from sensors over time.	different tools To recognise	controlled loops.
	be shared via the World	To show that different types	outcome.	To use data collected over a	that not all images are real	To develop a design which
	Wide Web.	of audio can be combined	To decompose a program into	long duration to find	To evaluate how changes	includes two or more loops
	To describe how content	and played together.	parts.	information.	can improve an image	which run at the same
	can be added and accessed	To evaluate editing choices	To create a program that uses	To identify the data needed		time.
	on the World Wide Web.	made.	count-controlled loops to	to answer questions.	Digital Literacy skills taught	To modify an infinite loop
	To recognise how the		produce a given outcome.	To use collected data to	Create multimedia (text,	in a given program.
	content of the WWW is	Digital Literacy skills taught		answer questions.	sounds, images, video, and	To design a project that
	created by people.	Capture digital content	Online safety: Online		3D objects)	includes repetition.
	To evaluate the	using devices including	reputation- Project Evolve	Digital Literacy skills taught	Select appropriate content	To create a project that
	consequences of unreliable	sound recorders, video		Capture digital content	(purpose, accuracy	includes repetition.
	content.	cameras, sensors, and		using devices including	Select appropriate content	Online safety: Copyright
		controllers (Includes		sound recorders, video	(ownership, copyright)	and ownership- Project
	Online safety: Health,	embedded devices, e.g. an		cameras, sensors, and	Apply common skills in new	Evolve
	wellbeing and lifestyle-	integrated tablet camera		controllers (Includes	contexts.	
	Project Evolve	Create multimedia (text,		embedded devices, e.g. an		
		sounds, images, video, and		integrated tablet camera		
		3D objects)		Organise and present data		
		Select appropriate content		Use equipment safely		
		(purpose, accuracy				
		Select appropriate content		Online safety: Managing		
		(ownership, copyright)		online information- Project		
		Use equipment safely		Evolve		



		Apply common skills in new contexts				
Year 5	Computer Science COMPUTING SYSTEMS AND NETWORKS	Information Technology CREATING MEDIA	Computer Science PROGRAMMING A	Information Technology DATA AND INFORMATION	Information Technology CREATING MEDIA	Computer Science PROGRAMMING B
		Video editing	Selection in physical	Flat-file databases	Vector drawing	Selection in quizzes
	Sharing information	5	computing	,	5	٢
	5 5	To recognise video as		To use a form to record	To identify that drawing	To explain how selection is
	To explain that computers	moving pictures, which can	To control a simple circuit	information.	tools can be used to	used in computer programs.
	can be connected together	include audio.	connected to a computer.	To compare paper and	produce different outcomes.	To relate that a conditional
	to form systems.	To identify digital devices	To write a program that	computer-based databases.	To create a vector drawing	statement connects a
	To recognise the role of	that can record video.	includes count-controlled	To outline how grouping	by combining shapes. To use	condition to an outcome.
	computer systems in our	To capture video using a	loops.	and then sorting data	tools to achieve a desired	To explain how selection
	lives.	digital device.	To explain that a loop can	allows us to answer	effect. To recognise that	directs the flow of a
	To recognise how	To recognise the features of	stop when a condition is met,	questions.	vector drawings, consist of	program.
	information is transferred	an effective video.	e.g. number of times.	To explain that tools can be	layers. To group objects to	To design a program which
	over the internet.	To identify that video can	To conclude that a loop can	used to select specific data.	make them easier to work	uses selection.
	lo explain how sharing	be improved through	be used to repeatedly check	To explain that computer	with. To evaluate their	I o create a program which
	information online lets	reshooting and editing.	whether a condition has been	programs can be used to	vector drawing.	uses selection.
	people in different places	To consider the impact of	met.	compare data visually.		To evaluate their program.
	work together.	the choices made when	To design a physical project	To apply their knowledge of	Digital Literacy skills taught	
	To contribute to a shared	making and sharing a video.	that includes selection.	a database to ask and	Make use of cut, copy,	Online safety: Privacy and
	project online.	Distant Literature shills show the	To create a controllable	answer real-world questions.	paste, as well as formatting	security- Project Evolve.
	To evaluate different ways	Digital Literacy skills taught	system that includes selection	Dicital Literacy shills toy sht	tools	
	of working together online.		Digital Literacy shills tay abt	Organica and present data	Create multimeata (text,	
	Digital Litoracy skills tayaht	asing devices including	Capture digital contant using	Organise and present data	3D objects)	
	Find suitable information	cameras sensors and	devices including sound	Onlina safatu, Onlina	Apply common skills in new	
	online	controllers (Includes	recorders video cameras	bulluing Project Evolve	contexts	
	Select appropriate	embedded devices e a an	sensors and controllers	ounging- 1 10ject 2001ve.		
	communication tools	integrated tablet camera)	(Includes embedded devices			
	Use collaboration tools (e.g.	Create multimedia (text	e.a. an integrated tablet			
	shared documents).	sounds, images, video, and	camera)			
		3D objects)	Use equipment safely.			



	Online safety: Self-image and identity- Project Evolve	Select appropriate content (purpose, accuracy) Select appropriate content (ownership, copyright) Use equipment safely. Apply common skills in new contexts. Online safety: Online relationships- Project Evolve.				
Year 6	Computer Science COMPUTING SYSTEMS AND NETWORKS	Information Technology CREATING MEDIA	Computer Science PROGRAMMING A	Information Technology DATA AND INFORMATION	Information Technology CREATING MEDIA	Computer Science PROGRAMMING B
		Web page creation	Variables in games	Spreadsheets	3D modelling	Sensing
	Communication					
		To review an existing	To define a 'variable' as	To identify questions which	To use a computer to create	To create a program to run
	To identify how to use a	website and consider its	something that is changeable.	can be answered using data.	and manipulate three-	on a controllable device.
	search engine.	structure.	To explain why a variable is	Io explain that objects can	dimensional (3D) digital	I o explain that selection
	I o describe how search	To plan the features of a	used in a program.	be described using data.	objects. To compare working	can control the flow of a
	engines, select results.	web page.	To choose how to improve a	To explain that formula can	digitally with 2D and 3D	program.
	To describe how search	To consider the ownership	game by using variables.	be used to produce	graphics. To construct a	To update a variable with a
	engines, select results.	and use of images	To design a project that	calculated data.	digital 3D model of a	user input.
	To explain how search	(copyright).	builds on a given example.	To apply formulas to data,	physical object. To identify	To use a conditional
	results are ranked.	To recognise the need to	To use their design to create		that physical objects can be	statement to compare a
	To recognise why the order	preview pages.	a project.	To create a spreadsheet to	broken down into d	variable to a value.
	of results is important, and	To outline the need for a	To evaluate their project.	plan an event.	collection of 5D snapes. To	To design a project that
	To recognize how we	To recognize the	Opling safety, Opling	To choose suitable ways to	combining 3D objects. To	a controllable device
		implications of linking to	ranutation Project Evolva	present data.	develop and improve a	To develop a program to
	tachnology	content owned by other	Τεραιατιοπ-ΤΤοjεει Ενοινε	Digital Literacy skills taught	digital 3D model	use inputs and outputs on a
	To evaluate different	neonle		Organise and present data	aigital 3D model.	controllable device
	methods of online	people.		organise and present data.	Digital Literacy skills taught	controllable device.
	communication	Digital Literacy skills taught		Online safetu: Manaaina	Make use of cut copu	Digital Literacy skills
		Create multimedia (text.		online information- Project	paste, as well as formatting	tauaht
	Digital Literacy skills taught	sounds, images, video, and		Evolve	tools	Capture digital content
	Find suitable information	3D objects)			Create multimedia (text,	using devices including
	online	Find suitable information			sounds, images, video, and	sound recorders, video
		online			3D objects)	cameras, sensors, and



Select appropriate	Select appropriate content		Apply common skills in new	controllers (Includes
communication tools	(purpose, accuracy)		contexts.	embedded devices, e.g. an
	Select appropriate content			integrated tablet camera
Online safety: Health,	(ownership, copyright)			Use equipment safely.
wellbeing and lifestyle-	Apply common skills in new			
Project Evolve	contexts			Online safety: Copyright
				and ownership- Project
				Evolve