Finlay Community School Computing

Our Whole School Curriculum Intent

At Finlay, we aim to teach a broad and balanced curriculum that enables children to enjoy, achieve and succeed in line with the National Curriculum. We provide apportunities to develop the children's cultural capital and ensure they are life-long learners, who are ready for the next step of the education and to thrive in Society. In addition to teaching the National Curriculum, we also aim for our children to leave school with a SMILE! Our SMILE values are: social awareness, mental health and wellbeing, independence, life skills and excellent aspirations. We provide apportunities to develop these values in all curriculum areas.

Our Computing Intent

At Finlay, we teach the National Curriculum. At Finlay, we understand that it is important for our pupils to continuously develop their skills within Camputing, as they are living in a digitally advancing world, and many of the jobs they will go on to apply for in later life will require secure skills in Camputing, with an increasing focus on computer science and coding. The National Curriculum mentions that, "a high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Camputing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of camputing is camputer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Camputing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world."

Reception 1: Interact and explore their environment using a range of multimedia equipment, including digital cameras, video cameras, microscopes etc. This could also include the use of tablets e.g. IPad to capture still and moving images. 2: Explore a teacher selected website to find a desired page using hyperlinks/navigation buttons 3: Collect information: by taking photographs. Use ICT to sort and sequence objects on a screen or interactive whitebox Year

1.1: We are treasure hunters.

1.2: We are TV chefs

1.3: We are digital artists

1.4: We are publishers

1.5: We are rhythmic

1.6: We are detectives

Computer Science

Information Technology

Digital Literacy

4: Explore a computer/laptop using keyboard and mouse

5: Use a simple programme such as paint to draw a

paint to draw a Computing)

Whole School Curriculum Overview: Computing Units (Switched on

Year 4

4.1: We are software developers

4.3: We are musicians

4.5: We are artists

4.4: We are bloggers

4.6: We are meteorologists

4.2: We are makers.

Year 3

3.1: We are programmers

3.2: We are bug fixers

3.4: We are who we are

3.3: We are presenters

3.5: We are co-authors

3.6: We are opinion pollsters

Year 2

2.1: We are astronauts

2.2: We are game testers

2.3: We are photographers

2.4: We are safe researchers

2.5: We are animators

2.6: We are zoologists

Year 5 5

5.1: We are game developers

5.2: We are cryptographers

5.3: We are architects

5.4: We are web developers

5.5: We are adventure gamers

5.6: We are VR designers

<u>Year 6</u>

6.2: We are computational thinkers.

6.4: We are connected

6.3: We are publishers

6.5: We are advertisers

6.6: We are AI developers

Computing Coverage Term by Term (EYFS - Year 6)

	Autum	n Term	Spring	J. Term	Sum	mer Term
	Autumn 1	Autumn 2	Spring I	Spring 2	Summer 1	Summer 2
Reception	Its Good to be Me	Let's Celebrate	I wander: What it's like in space? What it's like in Australia? What it's like in Antarctica?	I wander: What materials are waterproof? What the weather is like in each season? What it is like at The Farm?		lpon a Time ng on up!
Computing Unit	Interact and explore their environment using a range of multimedia equipment, including digital cameras, video cameras, microscopes etc. This could also include the use of tablets e.g. iPad to capture still	Explore a teacher-selected website to find a desired page, using hyperlinks and navigation buttons	Collect information, e.g., by taking photographs or collecting object. Use ICT to sort and sequence objects on a screen or interactive whiteboard.	Explores a computer / laptop using the keyboard and mouse.	Can use a simple programme such as paint to draw a picture	Interact and explore their environment using a range of multimedia equipment, including digital cameras, video cameras, microscopes etc. This could also include the use of tablets e.g. iPad to capture still and moving image

	and moving image						
Year I	Finlay To	y Factory	Where oh Where	is Finlay Bear	The Gred	rt Space Race	
Camputing Unit	1.1: We are treasure hunters	1.2: We are TV chefs	1.3: We are digital artists	1.4: We are publishers Information	1.5: We are rhythmic	1.6: We are detectives	
	Computer science	Information Technology Digital Literacy Computer science	Information Technology Digital Literacy	Technology Digital Literacy	Information Technology Digital Literacy	Information Technology Digital Literacy	
Year 2	The Great Fire of London & The Tudors			urld in Days et theme	Heroes in History Florence Nightingale and Mary Seacole		
Camputing Unit	2.1: We are astronauts	2.2: We are game testers	2.3: We are photographers	2.4: We are safe researchers	2.5: We are animators	2.6: We are zoologists	
	Computer science	Computer science	Computer science Information	Information Technology Digital	Information Technology Digital	Information Technology Digital Literacy	
	Digital Literacy	Digital Literacy	Technology Digital Literacy	Literacy	Literacy		
Year 3	Rock and Roll! Stone Age and Iron Age		Deadly Disasters		U	ing the Nile/ t Egyptians	
Computing Unit	3.1: We are programmers	3.2: We are bug fixers	3.4: We are who we are	3.3: We are presenters	3.5: We are co-authors	3.6: We are opinion pollsters Computer science	

	Computer science	Computer science	Information Technology Digital Literacy	Information Technology Digital Literacy	Computer science Information Technology Digital Literacy	Information Technology Digital Literacy
Year 4		Romans Glevum	U	re River Sea! . with Me!		t Greeks npics
Camputing Unit	4.1: We are software developers Computer science	4.3: We are musicians Computer science Information Technology Digital Literacy	4.5: We are artists Information Technology	4.4: We are bloggers Computer science Information Technology Digital Literacy	4.6: We are meteorologists Computer science Information Technology Digital Literacy	4.2: We are makers Computer science
Year 5		nd Settlers – ps and Mayans	The Rainfores	station t – North and	Ancient Ma	colate! ya and Aztec
Camputing Unit	5.1: We are game developers Computer science	5.2: We are cryptographers Computer science	5.3: We are architects Camputer science Information Technology	America 5.4: We are web developers Computer science Information Technology	5.5: We are adventure gamers Information Technology Digital Literacy	5.6: We are VR designers Computer science Information Technology

			Digital Literacy	Digital Literacy		
Year 6		et Again!		kplorer		tertain You!
	World	War 2	Arctic and	Antarctica	History of	Entertainment
Computing Unit	6.2: We are	6.4: We are	6.3: We are	6.5: We au	re advertisers	6.6: We are AI
	computational	connected	publishers			developers
	thinkers		•	Informatio	n Technology	,
		Computer	Computer	•	. Literacy	Computer science
	Computer	science	science		· ·	Information
	science	Information	Information			Technology
		Technology	Technology			
		Digital Literacy	Digital			
			Literacy			

Progression of Knowledge, Skills and Understanding in the National Curriculum

Computer Science - Problem Solving

	Birth to Three Year Olds	Three to Four Year Olds	Reception	Year I	Year 2	Year 3	Year 4	Year 5	Year 6
Salving	I can switch electronic toys on, such as a torch or remote cantrol car, and know how to press buttons or switches to make something happen. I can make toys, such as a wind- up toy, move	Use a variety of electronic toys in play situations, e.g., dance mats, Beebots, and remote control toys, using basic directional language. (forward, backwards, stop)		C.I.I.I. Understand what algorithms are. The pupil can understand algorithms as sequences of instructions in everyday contexts. The pupil can take real-world problems and then plan a sequence of steps to solve these. The problems could be moving a Blue-Bot from one point to another, or making some simple food items like a sandwich, smoothie or overnight oats. In I.I, recognise a set of directions as an algorithm. In I.2, recognise the steps of a	C.2.1.1. Understand what algorithms are. The pupil can understand algorithms as sequences of instructions or sets of rules in everyday contexts. The pupil can recognise that common sequences of instructions or sets of rules can be thought of as algorithms. Examples could include recipes, but might also be procedures or rules in class, spelling rules, simple arithmetic operations or number patterns. In 2.1, recognise sets of directions	C.3.1.1. Design, write and debug programs that accomplish specific goals. The pupil can design and write a program using a block language, without user interaction. A typical program might be a scripted animation for a joke, part of a story, or linked to another area of the curriculum. Programs could use pre-built sprites or ones designed by the pupil. Expect programs to include movement and dialogue; they may also include sound effects and some use of costumes to allow	C.4.1.1. Design, write and debug programs that accomplish specific goals. The pupil can design and write a program using a block language to a given brief, including simple interaction. The pupil can write a program in Scratch or MakeCode (or similar) in which the user has to provide some input, perhaps as an answer to a question on screen, or by using key presses or the mouse. The program could be a simple game or a set of	C.5.I.I. Design, write and debug programs that accomplish specific gaals The pupil can design, write and debug a program using a black language based on their own ideas. The pupil can design a program of their own and write this in a block-based language such as Scratch. The pupil can test and debug their code, explain what bugs they found and how they fixed them. The program need not be complex but it should be accomplished with a degree of	C.6.1.1. Design, write and debug programs that accomplish specific goals. The pupil can design, write and debug a program using a second programming language based on their own ideas. The pupil can design a program of their own and write this in a programming language other than Scratch (or whichever language has formed the focus for their programming in other years), such as MakeCode. The second language does not need to be text based, but Logo or Python

recipe as an algorithm.	as algorithms. In 2.2, recognise that the rules of a game are an algorithm. In 2.3, think of the steps to taking and editing photographs as an algorithm.)	for animated movement. There may be more than one sprite in the animation.	questions and typed responses.	independent working.	The pupil can test and debug their code, explain what bugs they found and how they fixed these. The program need not be complex.
C.I.I.2. Understand how algorithms are implemented as programs an digital devices; and that programs execute by following precise and unambiguous instructions. The pupil can program floor turtles using sequences of instructions to implement an algorithm. The pupil can create a Blue-Bot (or similar) program using a number of steps in order before pressing the Go button. The length of the pupil's programs might increase over the year. In I.I, create a Blue-Bot program, implementing the complete algorithm for their solution.	C.2.1.2. The pupil can understand how algorithms are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions. The pupil can program on screen using sequences of instructions to implement an algorithm. The pupil can create programs as sequences of instructions when programming on screen. Their program could be written using simple programming apps (such as Scratch Ir), perhaps using pre-prepared blocks and sprites.	C.3.1.2. Controlling or simulating physical systems. The pupil can explore simulations of physical systems on screen. The pupil can experiment with same on-screen simulations of physical systems, perhaps linked to topics from other curriculum areas, e.g. a hall bouncing on a bat or a car moving around a track. Many computer games include elements of computer simulations. The pupil can discuss what they have learned from using the simulation.	C.4.1.2. Controlling or simulating physical systems. The pupil can develop their own simulation of a simple physical system on screen.	C.5.1.2. Cantrolling ar simulating physical systems. The pupil can experiment with camputer control applications.	C.6.1.2. Cantrolling or simulating physical systems. The pupil can design, write and debug a program using a second programming language based on their own ideas. The pupil can design a program of their own and write this in a programming language other than Scratch (or whichever language has formed the focus for their programming in other years), such as MakeCode. The second language does not need to be text based, but Logo or Python could be used. The pupil can test and debug their code, explain what bugs they found

In 2.1, program sprites in ScratchIr to solve the problems given to them. In 2.2, recognise how the Scratch games implement sets of rules.				and how they fixed these. The program need not be complex.
	C.3.1.3: Salve problems by decomposing them into smaller parts. The pupil can plan a project. Working with the teacher and, perhaps, other pupils, the pupil can develop an outline plan for a project in camputing, involving multiple steps and resources, e.g. creating an animation, filming a video or conducting a survey. In video work, the plan might include identifying a subject; storyboarding the video; sourcing media; recording video; filming; editing; exporting.	C.4.1.3. Salve problems by decomposing them into smaller parts. The pupil can wark with others to plan a project. Given a particular project, the pupil can work as part of a team to plan how to accomplish their goal, breaking the project down into a set of tasks. Examples of projects could include creating an educational game or monitoring the weather.	C.5.1.3. Salve problems by decomposing them into smaller parts. The pupil can plan a solution to a problem using decomposition. The pupil can take a complex problem, identify component parts, use decomposition to break this problem down and then plan how they can solve the problem by working through the elements they have identified. Projects could include developing a computer game, creating a website or designing a building.	C.6.1.3. Salve problems by decomposing them into smaller parts. The pupil can solve problems using decomposition, tackling each part separately. The pupil can take a complex problem, identify component parts, use decomposition to break this problem down and then plan how they can solve the problem by working through the elements they have identified. they can then use their plan to solve the original problem.

Computer Science - Programming

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(forward, backwards, stop) using the Go button. The length of the pupil's programs might be expected to increase over the course of the year. In I.I., give the Blue-Bat a complete using the Go button. The scripted sorter. A typical program appropriate order. A typical program appropriate order. A typical program appropriate order. A typical program could be a simple stripted animation, e.g. animation, e.g. telling a joke, a conditions (e.g. solection would more place to another). In I.I., give the Blue-Bat a complete Using commands or blocks and same repetition. Repetition and selection. Repetition might include exit and selection. Repetition and selection. Repetition and selection might include exit also include exit also include exit conditions (e.g. repeatuntil). In pupil can debug any elsewhere on the music or a simple of an they can the plan to the problem do appropriate order. A typical program appropriat								· ·		
button. The stop) button. The length of the pupil's programs might be expected to increase over the course of the year. In I.I., give the Blue-Bot a complete button. The length of the pupil's programs might be supported to increase and some place to purpose in appropriate order. A typical program would typically be selection. Repetition and to break the appropriate order. A typical program would typically be selection. Repetition and to break the appropriate order. A typical program would typically be for a fixed number of times, but might conditions (e.g. also include exit then plan here are the conditions (e.g. also include exit to another). In I.I., give the Blue-Bot a complete blocks and some repetition. Repetition and to break the appropriate order. A typical program would typically be for a fixed number of times, but might conditions (e.g. also include exit to another). In appropriate order. A typical program would typically be selection. Repetition and to break the propriate order. A typical program would typically be selection. Repetition and to break the propriate order. A typical program would typically be selection. Repetition and to break the propriate order. A typical program would typically be of include exit to a fixed number of times, but might order. A typical program would typically be of an fixed number of times, but might order. A typical program would typically be of include exit to a fixed number of times, but might order. A typical program would typically be of an fixed number of times, but might order. A typical program would typically be of an fixed number of times, but might order. A typical program would typically be of an fixed number of times, but might order. A typical program would typically be of an fixed number of times, but might order. A typical program would typically be of an fixed number of times, but might order. A typical program would typically be of an fixed number of times, but might order. A typical program would typically be of an fixed number						· ·		,	•	problem, identify
stop) length of the pupil's programs and to increase over the course of the year. In 1.1, give the Blue-Bot a complete length of the pupil's programs a particular appropriate order. A typical program would typically be repetition. Repetition. Repetition. Repetition and selection. Repetition and selection. Repetition and problem do selection. Repetition and problem do selection. Repetition and selection and problem do selection and problem do selection. Repetition and selection and problem do selection and problem do selection and problem do selection and problem do structule exit then conditions (e.g. also include exit to another). In 1.1, give the Blue-Bot a complete A typical program would typically be for a fixed number of times, but might accorditions (e.g. also include exit to another). Selection would normally be of an the elements include simple if the course if they can the problem do selection. Repetition and selection and problem do selection. Repetition and selection and problem do selection. Repetition and selection and selection and problem do selection. Repetition and selection and selection and problem do another include exit to another appropriate order. A typical program would typically be of times, but might include exit to another along the problem do another appropriate order. A typical program would typically be of times, but might include exit to another appropriate order. A typical program would typically be of times, but might include exit to another appropriate order. A typical program would typically be of times, but might include exit to another appropriate order. A typical program would typically be of times, but might include exit to another appropriate order. A typical program would typically be of times, but might include exit to another appropriate order. A typical program would typically be of times, but another appropriate order. A typical program would typically be of times, also include exit appropriate order. A typical program would typically be of times, but			v					, v	0	component parts,
pupil's programs might be expected to increase over the course of the year. In 1.1, give the Blue-Bot a complete pupil's programs might be expected to increase and purpose in the course of the down and the expected to increase over the course of the year. In 1.1, give the Blue-Bot a complete A typical program would typically be for a fixed number of times, but might include exit then plan to could be a simple for a fixed number of times, but might include exit then plan to could be a simple for a fixed number of times, but might include exit then plan to could be a simple for a fixed number of times, but might include exit then plan to could be a simple for a fixed number of times, but might include exit then plan to conditions (e.g. selection would morking the problem do could be a simple for a fixed number of times, but might include exit then plan to conditions (e.g. selection would morking the problem do could be a simple for a fixed number of times, but might include exit then plan to could be a simple for a fixed number of times, but might include exit then plan to could be a simple for a fixed number of times, but might include exit then plan to could be a simple for a fixed number of times, but might include exit then plan to could be a simple for a fixed number of times, but might include exit then plan to could be a simple for a fixed number of times, but might include exit then plan to could be a simple for a fixed number of times, but might include exit then plan to could be a simple for a fixed number of times, but might include exit then plan to could be a simple for a fixed number of times, but might include exit then plan to could be a simple for a fixed number of times, but might include exit then plan to could be a simple for a fixed number of times, but might include exit then plan to could be a simple for a fixed number of times, but might include exit then plan then plan to conditions (e.g. of times, but might include exit then plan to conditions (e.g. of times, but might include exit t			,						· ·	use decomposition
might be expected to increase over the course of the year. In 1.1, give the Blue-Bot a complete might be expected to increase over the course of the down and the course of the debug any purpose in mind (e.g. scripted animation, e.g. animation, e.g. telling a joke, a conditions (e.g. repeatuntil). story or scripted animation, e.g. conditions (e.g. repeatuntil). story or scripted animation, e.g. conditions (e.g. repeatuntil). repeatuntil). repeatuntil). repeatuntil). rormally be of an the elements include simple ifthen or have identify the plan			swµ)						1 /	
to increase over the course of the year. In 1.1, give the Blue-Bot a complete to increase over the course of the year. In 1.2, give the Blue-Bot a complete mind (e.g. scripted animation, e.g. also include exit also include e						U				!
the course of the year. In 1.1, give the Blue-Bot a complete the course of the year. In complete the course of the year. In complete moving a sprite animation, e.g. also include exit conditions (e.g. cond						, , , , , , , , , , , , , , , , , , ,				they can solve the
gear. from one place telling a joke, a conditions (e.g. Selection would to another). In 1.1, give the Blue-Bot a complete from one place telling a joke, a conditions (e.g. story or repeatuntil). repeatuntil). Programs might ifthen or have identify include simple ifthenelse type. they can the complete debug any elsewhere on the music or a simple At this level, expect their plan to										
In 1.1, give the Blue-Bot a complete to another). story or repeatuntil). repeatuntil). repeatuntil). repeatuntil). repeatuntil). Programs might ifthen or have identify include simple ifthenelse type. they can the debug any elsewhere on the music or a simple At this level, expect their plan to					l •	0 1				working through
In 1.1, give the Blue-Bot a The pupil can idea taken from include simple ifthen or have identify they can the complete debug any elsewhere on the music or a simple At this level, expect their plan to						0 1	0 0		normally be of an	the elements they
complete debug any elsewhere on the music or a simple At this level, expect their plan t							explaining an			have identified.
						The pupil can	idea taken from	include simple	ifthenelse type.	they can then use
program. errors in their curriculum. The game, the pupil to be able the original					· · · · · · · · · · · · · · · · · · ·	debug any	elsewhere on the	music or a simple	At this level, expect	their plan to solve
					program.	errors in their	curriculum. The	game.	the pupil to be able	the original
own code. pupil's program to combine problem.						own code.				problem.
might include repetition with	!								1 /	
In 2.1, create multiple sprites; selection. Programs						,				
their own instructions could might include a	!									
program for include movement, computer game.	!						l		computer game.	
the rocket sprite on-screen text, in ScratchIr, sound and/or	!						·			
correcting any costume changes.	!						'			
errors.						0 0	wante annyes.			
						200000				

			T	
	C.3.2.2. Wark	C.4.2.2. Wark with	C.5.2.2. Work with	C.6.2.2. Work
	with various	various forms of	various forms of	with various
	forms of input	input and autput.	input and output.	forms of input
	and output	The pupil can write	The pupil can write	and output.
	The pupil can	a program that	a program that	
	write a program	accepts keyboard	accepts keyboard	The pupil can
	to produce output	input and produces	and mouse input	write a program
	on screen.	on-screen output.	and produces	that accepts
			output on screen	inputs other than
	The pupil can	In Scratch (or	and through	keyboard and
	create a program	similar), the pupil	speakers.	mouse and
	that produces	can write a		produces outputs
	output on screen,	program that	In Scratch (or	other than screen
	such as moving	displays a	similar), the pupil	or speakers.
	sprites or	question, accepts	can create a	
	displayed text,	typed input and	computer game	
	e.g. a simple	responds in an	using the keyboard	
	animation	appropriate way to	or mouse for input	
	program.	what is typed.	and the screen and	
		This might be used	speakers for	
		as the basis for a	output.	
		dialogue program		
		or a simple maths		
		game.		

Computer Science - Logical Thinking

	Birth to Three	Three- Four	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Year	Year							
	Olds	Olds							
Logical		Use a		C.1.3.1. Use	C.2.3.1. Use	C.3.3.1. Use	C.4.3.1. Use lagical	C.5.3.1. Use	C.6.3.1. Use
Thinking		shortcut		logical reasoning	logical reasoning	lagical reasoning	reasoning to	logical reasoning	logical reasoning
		such as		to predict the	to predict the	to explain how	explain haw same	to explain how	to explain how
		an icon		behaviour of	behaviour of	some simple	simple algorithms	some simple	some simple
		on the		simple programs.	simple programs.	algorithms work.	w.ork.	algorithms work.	algorithms work.
		.computer /		The pupil can give	The pupil can	The pupil can	The pupil can	The pupil can	The pupil can give
		iPad to		explanations for	give logical	explain a simple,	explain an	explain a rule-	clear and precise
		navigate		what they think a	explanations for	sequence-based	algorithm using	based algorithm	logical
		to a		program will do.	what they think a	algorithm in their	sequence and	in their own	explanations of a
		specific			program will do.	own words.	repetition in their	words.	number of
		website.		The pupil can			own words.		algorithms.
				explain to the	The pupil can	The pupil can		When provided	
				teacher, and to	give logical	give an explanation for a	Given an algorithm	with a rule-based	Given an

peers, what they think a program will do. This could be a program they or their peers have written, or it could be a familiar piece of software (including computer games). The pupil could use an audio recorder or video camera to capture their explanations. In 1.1, explain what their own or another pupil's program will do before it is run.)	explanations of what a program will do under given circumstances, including some attempt at explaining why it does what it does. The program could be one they have written ar it could be a computer game or a familiar piece of software. The pupil could use an audio recorder or a video camera to record their explanations. In 2.1, give logical explanations for what their own or their peers' programs will do. In 2.2, give logical	simple algorithm based on a sequence of instructions. The algorithm could be one of their own, or a simple one with which they have been provided. The algorithms could be recorded graphically, e.g. as a storyboard.	using both sequence and repetition, the pupil can give a coherent, logically reasoned explanation of what it does and how it works. Repetition is likely to be 'farever' or for a set number of times, although end conditions (e.g. repeatuntil) could be used.	algarithm (e.g. far a computer game), the pupil should be able to explain what it does and how it works, in their own words.	algorithm, the pupil can describe what it does and, using logical reasoning, give precise explanations of how it works. Algorithms could be linked to programming projects, but might include a key algorithm such as binary search.
	do. In 2.2, give				
	The second second	C.3.3.2. Use logical reasoning to detect and carrect errors in algorithms and programs.	C.4.3.2. Use logical reasoning to detect and correct errors in algorithms and programs.	C.5.3.2. Use logical reasoning to detect and correct errors in algorithms and programs.	C.6.3.2. Use logical reasoning to detect and carrect errors in algorithms and programs.
		The pupil can use logical reasoning to detect errors in programs. The pupil can	The pupil can use logical reasoning to detect and correct errors in programs.	The pupil can use logical reasoning to detect errors in algorithms. When given an	The pupil can use logical reasoning to detect and carrect errors in algorithms (and programs).

		T	I =		T
		give well-thought-	The pupil can give	algorithm for a	
		through reasons	well-thought-	particular	When given an
		for errors they	through reasons	purpose, e.g. a	algorithm for a
		find in programs.	for errors they	rule-based	particular
		Typically, the	find in programs	algorithm for a	purpose, e.g. a
		pupil can find	and explain how	computer game or	rule-based
		errors by	they have fixed	a sequence of	algorithm for a
		reasoning	these. The pupil	steps to draw a	smartphone app,
		logically about	can find and	geometric pattern,	the pupil can us
		the program	correct errors by	the pupil can use	logical reasonin
		code, but they	reasoning logically	logical reasoning	to identify
		might also be	about the program	to identify	possible errors .
		able to use	code; they might	possible errors in	the algorithm,
		logical reasoning	also be able to use	the algorithm,	explaining why
		to identify errors	logical reasoning	explaining why	they believe the
		in programs	to identify errors	they believe the	algorithm is
		when they are	in programs when	algorithm is	incorrect. The
		executed. The	executed and	incorrect.	pupil can use
		programs do not	confirm that they		logical reasonin
		have to be	have fixed these		to suggest
		written originally	by testing the new		possible
		by the pupil.	version of their		corrections to t
			program. The		algorithm,
			programs do not		explaining why
			have to be written		these would
			originally by the		correct the bug
			pupil.		they identified.
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Computer Science - Wider Understanding

	Birth to Three Year Olds	Three to Four Year Olds	Reception	Year I	Year 2	Year 3	Year 4	Year 5	Year 6
Wider Understanding			Explores a computer / laptop using the keyboard			C.3.3.3. Understand camputer networks including the Internet.	C.4.3.3. Understand computer networks including the Internet.	C.5.3.3. Understand computer networks including the Internet.	C.6.3.3. Understand camputer networks including the Internet.
			and mouse.			The pupil can understand that computer networks transmit information in a digital (binary)	The pupil can understand that the Internet transmits information as packets of data.	The pupil can understand how data routing works an the Internet.	The pupil can understand how mobile phone or other networks operate.

		format. The pupil can explain that any information has to be converted to numbers before it can travel through computer networks. The pupil should understand that this conversion happens according to an agreed system or code.	When working online, the pupil can explain that the information they send and receive is automatically broken down into packets of data, and that these sometimes take different routes across the Internet.	The pupil can give a coherent explanation of how data packets are routed from one computer to another on a separate network, which is also connected to the Internet.	The pupil can give an explanation of how networks operate: they should know that information is transmitted digitally, and have some understanding of the network topology involved.
		C.3.4.1. Understand how networks can provide multiple services, such as the Warld Wide Web. The pupil can understand that email and videoconferencing are made possible through the Internet. The pupil should know that email messages are sent and received through servers connected to the Internet. The pupil should know that other systems also work through the Internet, but these services may be direct, peer-to-peer connections rather than via servers.	C.4.4.1. Understand how networks can provide multiple services, such as the World Wide Web. The pupil can understand how the Internet makes the web possible. The pupil can give an explanation of how requests for web pages, and the HTML for those pages, are transmitted via the Internet.	C.5.4.1. Understand how networks can provide multiple services, such as the World Wide Web. The pupil can understand how web pages are created and transmitted. The pupil can explain how HTML is used to create a web page and how it is transmitted as packets of digital data over the Internet. The pupil should have an awareness of simple HTML tags for marking up a web page.	C.6.4.1. Understand how networks can provide multiple services, such as the World Wide Web. The pupil can understand how domain names are converted into IP addresses on the Internet. The pupil can give some explanation of how a domain name is converted into an IP address using the distributed domain name system (DNS) using something similar to a set of phone hooks. The pupil should show an awareness of the looked-up addresses (DNS records) being copied (cached),

circumstances.										and that more local records are used in preference to more authoritative records in most circumstances.
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Information Technology - Creating Content

	Birth to Three Year Olds	Three to Four Year Olds	Reception	Year I	Year 2	Year 3	Year 4	Year 5	Year 6
Creating Cantent			Collect information, e.g., by taking photographs or collecting object. Use ICT to sort and sequence objects on a screen or interactive whiteboard. Can use a simple programme such as paint to draw a picture.	C.I.I.I. Use technology purposefully to organise, store and retrieve digital content. The pupil can use digital technology to store and retrieve content. The pupil can use a range of digital technologies to store and access digital content. These might include laptop computers, tablets, smartphones, digital cameras, video cameras and audio recorders. Projects might include videoing one another cooking, developing an eBook or an	C.2.1.1. Use technology purposefully to organise, store and retrieve digital content. The pupil can store, organise and retrieve content on digital devices for a given purpose. With a given purpose, the pupil can use a range of digital technologies to retrieve, organise and store digital content. Technologies will typically include laptop computers, tablets and smartphones with access to the Internet, but the pupil might also be expected	C.3.1.1. Select, use and cambine a variety of saftware (including Internet services) on a range of digital devices. The pupil can use a range of programs on a computer. The pupil can use a range of software on laptop or tablet computers with some degree of independence. Software might include video editing, diagnostic tools, email clients, videoconferencing (with the teacher or another adult), survey design software, spreadsheets and presentation software.	C.4.1.1. Select, use and cambine a variety of software (including Internet services) on a range of digital devices. The pupil can use and combine a range of programs on a computer. The pupil can use multiple programs on laptop or tablet computers to achieve particular goals. For example, they might record audio and then use this as samples in a composition; create HTML content in a text editor and preview it in a browser; analyse data in a	C.5.1.1. Select, use and cambine a variety of software (including Internet services) on a range of digital devices. The pupil can use and combine a range of programs on multiple devices. The pupil can use multiple digital devices (such as tablets and laptops or digital cameras and laptops to achieve particular goals. The devices might include web servers, allowing them to use cloud-based applications. For example, they might use local media in	C.6.1.1. Select, use and cambine a variety of software (including Internet services) on a range of digital devices. The pupil can select, use and cambine a range of programs on multiple devices. The pupil can choose for themselves from a range of available programs on laptops, tablets or cloud-based services to achieve particular goals. For example, they might choose which image editors and presentation software to use

audiobook, to use digital spreadsheet and conjunction with creating a cameras, video then create a presentation to programming audio recorders (E.g. In 1.2, film (or the and upload a pupil cooking. an a tablet or In 1.3, save their smartphone).	presentation; which image and s audio editors to use when creating media content for an app; which
greetings card. (E.g. In 1.2, film and upload a pupil cooking. greetings card. cameras and audio recorders (or the analysis. presentation to programming platform, such a show the results of their analysis. Scratch; digital cameras and video cameras to vid	which image and s audio editors to use when creating media content for an app; which
audio recorders (E.g. In 1.2, film and upload a pupil cooking. on a tablet or show the results platform, such a show the results of their analysis.	s audio editors to use when creating media content for an app; which
(E.g. In 1.2, film (or the analysis. Scratch; digital and upload a equivalent apps pupil cooking. on a tablet or video cameras to	use when creating media content for an app; which
and upload a equivalent apps cameras and pupil cooking. on a tablet or video cameras to	media content for an app; which
pupil cooking. on a tablet or video cameras to	an app; which
	11.
In 1.3, save their smartphone).	
artwork and Projects might use on an	and website tools
retrieve it. include digital externally hosted	
In 1.4, open their photography, website or blog;	
eBook, import searching for digital camera to	
images sourced images online take photos they	
online to their and creating could import into	
eBook and save. image-based 3D design	
In 1.5, record presentation software on a	
audio, import it slides. laptop.	
to the computer	
and save their (E.g. In 2.3,	
work. review, reject	
In 1.6, open, and rate the	
modify, add photographs they	
images to and have taken.	
save their In 2.4, retrieve	
popplets; fill in information and	
spreadsheets and limages from	
Google Forms.) websites into	
presentations,	
and save their	
work.	
In 2.5, film and	
upload a	
working stop-	
motion video.	
In 2.6, use	
questions to sort	
and classify	
objects; take,	
upload and	
organise	
photographs;	
add information	
to a map.)	

Collect information, e.g., by taking photographs or collecting object. Use ICT to sort and sequence objects on a screen or interactive whiteboard. Can use a simple programme such as paint to draw a picture. Can wa a picture. Collecting photographs or collecting object. The pupil can create original content using digital technology digital technology. The pupil can create their own original digital content using a range of technologies. These might include laptop computers, tablets, smartphones, digital cameras, wideo cameras and audio recorders. Project might include wideoing one another cooking, developing an eBook or an audiobook, creating a greetings card. Look for some indication of the pupil's creativity in this work. (E.g. In 1.2, film	digital cantent. The pupil can create and edit original content for a given purpose using digital technology. The pupil can create and edit their own original digital content using a range of technologies. Content-creation technology might include laptop computers, stablets, smartphones with network connections, digital cameras, video cameras and audio recorders, although editing is likely to take place on laptops or tablets. Projects might include digital	C.3.1.2. Design and create a range of programs, systems and content that accomplish given goals. The pupil can design and create content on a computer. The pupil can plan and execute a project in which they use software on a laptop or tablet to create digital content with some degree of independence. For example, they could plan and shoot a video, plan and create a presentation on a given topic or plan and then create an online survey.	C.4.1.2. Design and create a range of programs, systems and content that accomplish given goals. The pupil can design and create content on a computer in response to a given goal. With a given goal, the pupil can plan and execute a project in which they use software on a laptop or tablet to create digital content with some degree of independence. For example, they could plan and compose ariginal music using sequencing software; plan and create a web page; plan how they could contribute to a shared wiki and then do so; plan and create a presentation about the weather. They should evaluate	C.5.1.2. Design and create a range of programs, systems and content that accomplish given goals. The pupil can design and create programs on a computer in response to a given goal. The pupil can design a program of their own in response to a given goal and write this in a block-based language such as Scratch. The program need not be complex - a simple game would suffice, but it should be accomplished with a degree of independent working.	C.6.1.2. Design and create a range of programs, systems and content that accomplish given goals. The pupil can design and create systems in response to a given goal. The pupil can plan, design and implement a system with multiple, interrelated components with a given goal in mind.
Look for some indication of the pupil's creativity in this work. (E.g. In 1.2, film	is likely to take place on laptops or tablets. Projects might include digital photography,		shared wiki and then do so; plan and create a presentation about the weather. They should evaluate		
digital video. In 1.3, create an original painting. In 1.4, create an eBook including images and original text.	creating image- based presentation slides, composing an email and creating simple		how effectively they have met the requirements of the original goal.		

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		In 1.5, create and	charts. Look for				
		record original	some indication				
		digital audio.	of the pupil's				
		In 1.6, create	creativity in this				
		data tables and	work and				
		trees.)	evidence that				
		,	they have edited				
			content.				
			contactu.				
			(5 - 1- 22				
			(E.g. In 2.3,				
			take and edit				
			original digital				
			photographs.				
			In 2.4, create				
			and edit their				
			own				
			presentation.				
			In 2.5, film and				
			edit a stop-				
			motion video.				
			In 2.6, take and				
			edit photographs				
			and create and				
			edit charts.)				
			eau Maris.)				
			eau chans.)	C 3 L 3 Callactina	C / 13 Callacting	C 5 L 3 Callactina	C 6 1 3
			eau Auns.)	C.3.1.3. Callecting,	C.4.1.3. Callecting,	C.5.1.3. Callecting,	C.6.1.3.
			eui cruris.)	analysing,	analysing,	analysing,	Callecting,
			eui cruris.)	analysing, evaluating and	analysing, evaluating and	analysing, evaluating and	Collecting, analysing,
			eui cruris.)	analysing, evaluating and presenting data and	analysing, evaluating and presenting data	analysing, evaluating and presenting data	Callecting, analysing, evaluating and
			eui cruris.)	analysing, evaluating and presenting data and information.	analysing, evaluating and presenting data and information.	analysing, evaluating and presenting data and information.	Collecting, analysing, evaluating and presenting data
			eui cruris.)	analysing, evaluating and presenting data and information. The pupil can	analysing, evaluating and presenting data and information. The pupil can	analysing, evaluating and presenting data and information. The pupil can	Collecting, analysing, evaluating and presenting data and information.
			eui suns.)	analysing, evaluating and presenting data and informatian. The pupil can collect and present	analysing, evaluating and presenting data and information.	analysing, evaluating and presenting data and information.	Callecting, analysing, evaluating and presenting data and information. The pupil can
			eui suns.)	analysing, evaluating and presenting data and information. The pupil can	analysing, evaluating and presenting data and information. The pupil can	analysing, evaluating and presenting data and information. The pupil can analyse and evaluate	Collecting, analysing, evaluating and presenting data and information.
			eui suns.)	analysing, evaluating and presenting data and informatian. The pupil can collect and present	analysing, evaluating and presenting data and information. The pupil can collect and present	analysing, evaluating and presenting data and information. The pupil can analyse and evaluate	Callecting, analysing, evaluating and presenting data and information. The pupil can
			eui suns.)	analysing, evaluating and presenting data and information. The pupil can collect and present information.	analysing, evaluating and presenting data and information. The pupil can callect and present data.	analysing, evaluating and presenting data and information. The pupil can analyse and	Callecting, analysing, evaluating and presenting data and information. The pupil can analyse and
			eui suns.)	analysing, evaluating and presenting data and information. The pupil can collect and present information. The pupil can use	analysing, evaluating and presenting data and information. The pupil can collect and present data. The pupil can use	analysing, evaluating and presenting data and information. The pupil can analyse and evaluate information.	Collecting, analysing, evaluating and presenting data and information. The pupil can analyse and evaluate data.
			eui suns.)	analysing, evaluating and presenting data and information. The pupil can collect and present information. The pupil can use computers to collect	analysing, evaluating and presenting data and information. The pupil can collect and present data. The pupil can use computers to	analysing, evaluating and presenting data and information. The pupil can analyse and evaluate information. Working with text,	Callecting, analysing, evaluating and presenting data and information. The pupil can analyse and evaluate data. The pupil can
			eui suns.)	analysing, evaluating and presenting data and information. The pupil can collect and present information. The pupil can use computers to collect information and	analysing, evaluating and presenting data and information. The pupil can collect and present data. The pupil can use computers to collect numerical	analysing, evaluating and presenting data and information. The pupil can analyse and evaluate information. Working with text, audio, images or	Callecting, analysing, evaluating and presenting data and information. The pupil can analyse and evaluate data. The pupil can evaluate the
			eui suns.)	analysing, evaluating and presenting data and information. The pupil can collect and present information. The pupil can use computers to collect information and present this to an	analysing, evaluating and presenting data and information. The pupil can collect and present data. The pupil can use camputers to collect numerical data and present	analysing, evaluating and presenting data and information. The pupil can analyse and evaluate information. Working with text, audio, images or video, the pupil	Callecting, analysing, evaluating and presenting data and information. The pupil can analyse and evaluate data. The pupil can evaluate the quality of
			eui suns.)	analysing, evaluating and presenting data and information. The pupil can collect and present information. The pupil can use computers to collect information and present this to an audience. For	analysing, evaluating and presenting data and information. The pupil can collect and present data. The pupil can use camputers to collect numerical data and present this to an	analysing, evaluating and presenting data and information. The pupil can analyse and evaluate information. Working with text, audio, images or video, the pupil can analyse	Callecting, analysing, evaluating and presenting data and information. The pupil can analyse and evaluate data. The pupil can evaluate the quality of numerical data,
			eui suns.)	analysing, evaluating and presenting data and information. The pupil can collect and present information. The pupil can use computers to collect information and present this to an audience. For example, they could	analysing, evaluating and presenting data and information. The pupil can collect and present data. The pupil can use computers to collect numerical data and present this to an audience. For	analysing, evaluating and presenting data and information. The pupil can analyse and evaluate information. Working with text, audio, images or video, the pupil can analyse information,	Callecting, analysing, evaluating and presenting data and information. The pupil can analyse and evaluate data. The pupil can evaluate the quality of numerical data, deciding the extent
			eui suns.)	analysing, evaluating and presenting data and information. The pupil can collect and present information. The pupil can use computers to collect information and present this to an audience. For example, they could shoot and then	analysing, evaluating and presenting data and information. The pupil can collect and present data. The pupil can use camputers to collect numerical data and present this to an audience. For example, they	analysing, evaluating and presenting data and information. The pupil can analyse and evaluate information. Working with text, audio, images or video, the pupil can analyse information, perhaps	Callecting, analysing, evaluating and presenting data and information. The pupil can analyse and evaluate data. The pupil can evaluate the quality of numerical data, deciding the extent to which it is
			eui suns.)	analysing, evaluating and presenting data and information. The pupil can collect and present information. The pupil can use computers to collect information and present this to an audience. For example, they could shoot and then show a video or	analysing, evaluating and presenting data and information. The pupil can collect and present data. The pupil can use computers to collect numerical data and present this to an audience. For example, they could collect and	analysing, evaluating and presenting data and information. The pupil can analyse and evaluate information. Working with text, audio, images or video, the pupil can analyse information, perhaps summarising this.	Callecting, analysing, evaluating and presenting data and information. The pupil can analyse and evaluate data. The pupil can evaluate the quality of numerical data, deciding the extent to which it is affected by
			eui suns.)	analysing, evaluating and presenting data and information. The pupil can collect and present information. The pupil can use computers to collect information and present this to an audience. For example, they could shoot and then show a video or conduct an online	analysing, evaluating and presenting data and information. The pupil can collect and present data. The pupil can use computers to collect numerical data and present this to an audience. For example, they could collect and present data about	analysing, evaluating and presenting data and information. The pupil can analyse and evaluate information. Working with text, audio, images or video, the pupil can analyse information, perhaps summarising this. They should	Callecting, analysing, evaluating and presenting data and information. The pupil can analyse and evaluate data. The pupil can evaluate the quality of numerical data, deciding the extent to which it is affected by systematic or
			eui suns.)	analysing, evaluating and presenting data and information. The pupil can collect and present information. The pupil can use computers to collect information and present this to an audience. For example, they could shoot and then show a video or conduct an online survey and present	analysing, evaluating and presenting data and information. The pupil can collect and present data. The pupil can use computers to collect numerical data and present this to an audience. For example, they could collect and present data about the weather over	analysing, evaluating and presenting data and information. The pupil can analyse and evaluate information. Working with text, audio, images or video, the pupil can analyse information, perhaps summarising this. They should evaluate the	Callecting, analysing, evaluating and presenting data and information. The pupil can analyse and evaluate data. The pupil can evaluate the quality of numerical data, deciding the extent to which it is affected by systematic or random errors.
			eui suns.)	analysing, evaluating and presenting data and information. The pupil can collect and present information. The pupil can use computers to collect information and present this to an audience. For example, they could shoot and then show a video or conduct an online survey and present the results. They	analysing, evaluating and presenting data and information. The pupil can collect and present data. The pupil can use computers to collect numerical data and present this to an audience. For example, they could collect and present data about the weather over a period of time.	analysing, evaluating and presenting data and information. The pupil can analyse and evaluate information. Working with text, audio, images or video, the pupil can analyse information, perhaps summarising this. They should evaluate the quality of the	Callecting, analysing, evaluating and presenting data and information. The pupil can analyse and evaluate data. The pupil can evaluate the quality of numerical data, deciding the extent to which it is affected by systematic or random errors. They should
			eui suns.)	analysing, evaluating and presenting data and information. The pupil can collect and present information. The pupil can use computers to collect information and present this to an audience. For example, they could shoot and then show a video or conduct an online survey and present	analysing, evaluating and presenting data and information. The pupil can collect and present data. The pupil can use computers to collect numerical data and present this to an audience. For example, they could collect and present data about the weather over	analysing, evaluating and presenting data and information. The pupil can analyse and evaluate information. Working with text, audio, images or video, the pupil can analyse information, perhaps summarising this. They should evaluate the	Callecting, analysing, evaluating and presenting data and information. The pupil can analyse and evaluate data. The pupil can evaluate the quality of numerical data, deciding the extent to which it is affected by systematic or random errors.

			degree of	with a degree of	or questioning	producing
			independence.	independence.	assumptions that	summary
					have been made.	statistics, looking
					For example, they	for relationships,
					could work with	trends and
					information on e-	exceptions.
					safety, evaluating	,
					its quality and	
					providing a clear	
					and coherent	
					summary.	
					σ	

Information Technology - Searching

	Birth to Three Year Olds	Three to Four Year Olds	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Searching		Use a shortcut such as an icon on the computer / iPad to navigate to a specific website.	Explore a teacher-selected website to find a desired page, using hyperlinks and navigation buttons			c.3.2.1. Use search technologies effectively. The pupil can search far information within a single site. The pupil can use browser-specific tools (e.g. the Find command) and site-specific tools (such as the search tools for Wikipedia or YouTube) to locate particular information on a web page or within a website.	C.4.2.1. Use search technologies effectively. The pupil can use a standard search engine to find information. The pupil can use a common search engine (such as Google with safe search mode locked in place) effectively, to search for particular information on the web, such as answers to questions they identify in a research project.	C.5.2.1. Use search technologies effectively. The pupil can use filters to make more effective use of a standard search engine. The pupil can use a common search engine (such as Google with safe search mode locked in place) effectively, to search for particular information on the web, such as answers to questions they identify in a research project. They should use built-in search	C.6.2.1. Use search technologies effectively. The pupil can make use of a range of search engines appropriate to finding information that is required. The pupil can show that they can use effectively a range of different search technologies, including alternatives to Google (such as Bing or Yahoo) and site-specific search engines (such as those for the App Store or Google Play).

					tools to filter their	E.g. They could
					results, such as	demonstrate how
					by time, location	they would use a
					or reading level.	range of search
					0	engines when
						researching
						available
						smartphone apps
						for a particular
						purpose.
			C.3.2.2. Appreciate	C.4.2.2. Appreciate	C.5.2.2.	C.6.2.2.
			how search	how search results	Appreciate how	Appreciate how
			results are selected	are selected and	search results are	search results are
			and ranked.	ranked.	search results are	search results are
			anu rankea.		ranked.	ranked.
			The munit	The pupil can		
			The pupil can	understand that	The pupil can	The pupil can
			understand that	search engines	understand that	appreciate that
			search engines	rank pages	search engines use	search engines
			select pages	according to	a cached copy of	rank pages based
			according to	relevance.	the crawled web	on the number
			keywords found in		to select and rank	and quality of in-
			the content.	The pupil can	results.	bound links.
				demonstrate their		
			When using search	understanding that	The pupil can	The pupil can
			engines, the pupil	search engine	explain how a	demonstrate some
			should	results are ranked	search engine	awareness of the
			demonstrate their	according to	creates an index	Page Rank
			understanding that	relevance, and that	from a cached	algorithm,
			the pages shown	normally the top	copy of the web	explaining that the
			include the	results on the first	and uses this to	quality of a page
			keywords they	page are likely to	select and rank	is determined
			have specified. The	be those most	results. The pupil	largely on the
			pupil can use this	relevant to their	might also show	basis of the
			knowledge by	query. If the pupil	an awareness of	number and
			thinking of good	is unable to find	the Page Rank	quality of links
			keywords	good results on	algorithm in	pointing to that
			appropriate for	the first page,	which results are	page in the
			what they are	expect them to	ranked according	engine's cached
			searching.	reconsider their	to the number and	copy of the web,
				keywords rather	quality of in-	and that quality
					bound links.	is itself determined
				than looking at	wina iinks.	recursively
				further pages of		
				results.		through Page
						Rank.

Digital Literacy - ESafety

Birth to Three Year	Three to Four Year	Pre-school and Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Be interested in pulley toys Can use age appropriate apps	Shows an interest in technology – wants to have a go on the whiteboard or use an iPad.	Interact and explore their environment using a range of multimedia equipment, including digital cameras, video cameras, microscopes etc. This could also include the use of tablets e.g. iPad to capture still and moving image.	C.1.1.1. Use technology safely and respectfully. The pupil can keep themselves safe while using digital technology. The pupil can understand that they need to keep safe when using digital technology. For example, they should know to use filtered Safe Search when looking for images on the web and that they should close the lid of a laptop (or turn over a tablet) and alert an adult if they come across unsuitable content. (E.g. In 1.3 and 1.4, close their laptop (or turn over their tablet) and tell a teacher if they find inappropriate images.)	C.2.1.1. Use technology safely and respectfully. The pupil can keep safe and show respect to others while using digital technology. The pupil should know that they need to keep themselves safe when using digital technology. E.g. They should know to use filtered SafeSearch when looking for images on the web and that they should close the lid of a laptop (or similar action) if they find inappropriate images. They should know to respect others' rights, including privacy and intellectual property when using computers, so should not look at someone else's work or copy it without permission and acknowledgement.	c.3.1.1. Use technology safely, respectfully and responsibly. The pupil can use digital technology safely and show respect for others when working anline. The pupil should know that they need to keep themselves safe when using digital technology. For example, they should show respect for others when filming and should not normally post videos anline. If responding to anline surveys, they should do so anonymously, thinking carefully about information they give out.	C.4.1.1. Use technology safely, respectfully and responsibly. The pupil can demonstrate that they can act responsibly when using computers. The pupil can act responsibly when using computers. For example, they should act responsibly when developing computer games or prototype products. They should behave responsibly when using sampled music or creating a composition. They should show responsibility when creating or remixing online content, including observing copyright and any terms and conditions. They should contribute positively to a shared wiki.	C.5.1.1. Use technology safely, respectfully and responsibly. The pupil can demonstrate that they can act responsibly when using the Internet. The pupil can act responsibly when using the Internet. For example, they should act responsibly when participating in an online community, such as the Scratch community, if permitted to do so. They should demonstrate that they understand the importance of encrypted (HTTPS) connections when browsing the web and of using strong passwords to protect their identity online. They should act responsibly when creating, editing or commenting on	C.6.1.1. Use technology safely, respectfully and responsibly. The pupil can show that they can think through the consequences of their actions when using digital technology. The pupil can discuss likely and potential consequences of their actions when using digital technology in a range of contexts. Contexts might include developing smartphone apps; using online project management tools; collecting information for market research; posting original content online.

	<u> </u>		They should		<u> </u>	web pages or blog	
			observe age			posts.	
			restrictions on			- According	
			computer games.				
			7				
			(E.g. In 2.2,				
			observe age				
			restrictions when				
			playing games out				
			of school.				
			In 2.3, ask before				
			taking photos of				
			others.				
			In 2.4, know				
			what to do if				
			they encounter				
			inappropriate				
			content;				
			acknowledge the				
			source of information they				
			use.				
			In 2.6, know not				
			to post images				
			with metadata to				
			the open web.)				
			'				
		C.I.I.2. Keeping	C.2.1.2. Keeping	C.3.1.2. Recagnise	C.4.1.2. Recognise	C.5.1.2. Recagnise	C.6.1.2. Recagnise
		personal	personal	acceptable/	acceptable/	.acceptable/	acceptable/
		information	information	unacceptable	unacceptable	unacceptable	unacceptable
		private.	private.	behaviour.	behaviour.	behaviour.	behaviour.
		The pupil can	The pupil can	The pupil can	The pupil can	The pupil can	The pupil can
		understand that	understand that	recognise	understand the	discuss the	identify principles
		information on	they should not	unacceptable	difference between	consequences of	underpinning
		the Internet can	share personal	behaviour when	acceptable and	particular	acceptable use of
		be seen by others.	information anline.	using digital	unacceptable	behaviours when	digital
		The pupil should	The pupil should	technology.	behaviours when	using digital	technologies.
		be aware that	understand that		using digital	technology.	
		information stored	personal	The pupil can	technology.		The pupil can
		on the web or	information	identify what		The pupil can	identify some
		transmitted via	should be kept	would be	The pupil can	discuss the likely	principles
		the Internet is	private: it should	unacceptable or	discuss the	or possible	underpinning
		available to other	not be posted	inappropriate	difference between	consequences of	acceptable
		people. E.g. They	online to a public	behaviour when	acceptable and	particular behaviours when	behaviour when
		should know that	audience and	using digital	unacceptable behaviaurs when		using technologies
		the images they	should only be	technology in a		using digital	in a range of contexts. Contexts
1		5 0	Ĭ	range of contexts.	using digital	technology in a	whilekis. Contexts

find online can be found by others too, and that the queries they type in can be seen by those who run the search engine they use and the school's network. (E.g. In 1.2, 1.3, 1.4 and 1.6, know that some personal information and images should be kept private, and understand what should not be posted online. In 1.3 and 1.4, realise that the images they search for can be seen by others.)	shared privately with those who they (or their parents) would trust. E.g. The pupil should recognise that photos they take in school should not normally be posted to the open web. They should know that photos taken with smartphones often contain hidden information about where the photo was taken. (E.g. In 2.2 and 2.6, know that photos of themselves or other people should not normally be uploaded to the open web. In 2.6, know that photos can contain metadata revealing where they were taken.)	For example, they should know what would be unacceptable when using anline communities, such as the Scratch website, or when shooting or publishing video. They should know what would be unacceptable use of the Command prampt, email or anline survey tools.	technology in a range of contexts. Contexts could include the Scratch website, or other anline communities; the use of athers' ariginal content, such as music samples or web pages; wikis, including Wikipedia.	range of contexts. Contexts could include the Scratch website, or other anline communities; using cryptography and passwords; creating websites or writing blog posts.	could include smartphone or tablet use; the use of online project management tools; antine surveys and recording of interviews; creating and sharing digital content.
C.1.1.3. Identify where to go for help and support when they have concerns about content or contact on the Internet or other online technologies. The pupil can understand what to do if they see	C.2.1.3. Identify where to go for help and support when they have concerns about	C.3.1.3. Know a range of ways to report concerns and inappropriate behaviour. Know who to talk to about concerns and inappropriate behaviour in school. Pupils should know	C.4.1.3. Know a range of ways to report concerns and inappropriate behaviour. Know who to talk to about concerns and inappropriate behaviour at home or in school. Pupils should	C.5.1.3. Know a range of ways to report concerns and inappropriate behaviour. Know how to report concerns and inappropriate behaviour in a range of contexts. Pupils should	C.6.1.3. Know a range of ways to report concerns and inappropriate behaviour. Know a range of ways to report concerns and inappropriate behaviour in a variety of contexts.

disturbing content concerns about to report know to report know how to anline at home or content or contact inappropriate inappropriate report at school. online. behaviour when behaviour when inappropriate using technology in using technology behaviour when The pupil should The pupil should school to their in school to their using technology know to close in school: know to close teacher, the teacher, the their laptop lid or their laptop lid or network manager network manager preferably this will turn their tablet turn their tablet or another trusted or another trusted be to their teacher. over if they find over if they find adult, and that adult, and that the network content, such as content, such as they can discuss they can discuss manager or another trusted inappropriate inappropriate any concerns they any concerns they images, which images, which have with their have with their adult. They should might disturb might disturb them teacher or other teacher or other know how to them or other or other pupils; if trusted adults in trusted adults in report any pupils. They someone they don't school. school. They concerns over should know to trust contacts should also know inappropriate tell their teacher them online; if that any concerns behaviour with or their someone makes digital technology over, or parents/carers if inappropriate at home. inappropriate this happens. contact online. behaviour with, Preferably this They should know digital technology would be through (E.g. In 1.3 and to tell their teacher at home can be discussion with or their 1.4, know to discussed with their parents, with parents/carers if close their laptop their parents, with you or with lid or turn their this happens, and another trusted you or with tablet over and be aware that another trusted adult. Pupils adult. tell a teacher or they could talk to should also know another trusted their how to report parents/carers if adult or to inappropriate Childline about they find behaviour to those inappropriate this. running websites images.) which they (E.g. In 2.4, regularly use, and know to close to Childline, CEOP their laptop lid or or to the police. turn their tablet over and tell a teacher, their parents/carers, another trusted adult or an agency such as Childline if they

find inappropriate

content.)

Pupils should

know how to

inappropriate

in school: preferably this

behaviour when

using technology

will be to their

network manager

or another trusted adult. They

should know how

concerns over, or

behaviour with,

Preferably this

digital technology

would be through

their parents, with

should also know

discussion with

another trusted

you or with

adult. Pupils

how to report

inappropriate

behaviour to

CEOP or the

police. Pupils

those running

websites which

they regularly use,

and to Childline,

should know that

illegal content or

activities can be

reported to CEOP

or the police.

to report any

inappropriate

at home.

teacher, the

report

	C.3.I.X. Be discerning in evaluating in content. The pupil conducted whete web page in relevant for given purpor question. The pupil conducted in a judgement.	digital evaluating digital cantent. The pupil can decide whether digital content is relevant for a given purpose or question. The pupil can tabout larm a judgement	C.5.I.X. Be discerning in evaluating digital content. The pupil can decide whether digital content is reliable and unbiased. The pupil can discuss whether particular content	C.6.I.X. Be discerning in evaluating digital content. The pupil can form an opinion about the effectiveness of digital content. Taking into account the intended audience
	whether a negative page is apply for finding answer to negation the or for a girpurpose.	about whether a web page, such as a Wikipedia a article, or other ey have digital content is	(such as a web page, other pupils' pages or blog posts) is reliable and whether it has been written from a neutral point of view. They should be able to spot same examples of bias in digital content.	and purpose of the content, the pupil can form a judgement as to, and provide reasons for, the extent to which they consider digital content to be effective. The content might be media resources or marketing materials.
	C.3.1.4. Un the apportu networks of cammunical collaboratio The pupil co email and videoconfer in class.	Inities Understand the opportunities is an and on. In use The pupil can work collaboratively with classmates on a shared wiki. The pupil can work collaboratively collaboratively collaboratively collaboratively	C.5.1.4. Understand the appartunities networks after for communication and collaboration. The pupil can work collaboratively with classmates on a class website or blog. The pupil can work productively and positively	C.6.1.4. Understand the opportunities networks offer for cammunication and collaboration. The pupil can use online tools to plan and carry out a collaborative project. The pupil can make use of an and carry tools and carry out a collaborative project.
		with their peers on a shared project, such as a class	and positively with others when developing a	online tool to plan and carry out a

			wiki, making useful contributions and providing feedback to others.	shared website or contributing to a class blog.	collaborative project.

Digital Literacy - Using IT Beyond School

Birth to	Three to	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Three	Four Year							
Year	Olds							
	Oitas							
Olds								
Shows an	Shows an	Interact and	C.I.2.I. Recognise	C.2.2.1. Recagnise				
interest in	interest in	explore their	common uses of	common uses of				
pulley toys	technology -	environment	information	information				
	wants to have	using a range	technology beyond	technology beyond				
	a go on the	of multimedia	school.	school.				
	whiteboard or	equipment,	The pupil can	The pupil can				
	use an ipad.	including	show an	show an				
	Haa a wastah	digital	awareness of how	awareness of				
	Use a variety	cameras, video	IT is used for	how IT is used				
	of electronic	cameras,	communication	for a range of				
	toys in play	microscopes etc. This could	beyond school.	purposes beyond				
	situations, e.g., dance mats,	also include		school.				
	Bee-bots, and	the use of	The pupil can					
	remote control	tablets e.g.	mention some of	The pupil can				
	toys, using	iPad to capture	the ways in which	name a number				
	basic	still and	IT is used to	of purposes for				
	directional	moving image.	communicate	which IT is used				
	language.	arouge.	beyond school.	beyond school.				
	(forward,	Collect	E.g. They might	The pupil might				
	backwards,stop)	information,	know that some	know that adults				
	,, ,, ,, ,, ,	e.g., by taking	people use social	can share work				
		photographs	media such as	and discuss				
		or collecting	Facebook, email,	ideas in anline				
		object.	video calls or	communities; that				
			online greetings to	photos can be				
			say happy birthday	taken, edited and				
			to their friends.	shared easily				
			(E = I= 16	using digital				
			(E.g. In 1.6	technology; that the web is made				
			recognise online collaboration tools	up of information				
				, , ,				
			such as Google	shared by people				

Forms and the	and
Google Suite.)	organisations;
	that people use
	email for a range
	of purposes and
	in a variety of
	contexts; that
	scientists use
	computers when
	collecting and
	analysing data.
	Muligary Auto.
	(E.g. In 2.1 and
	2.2, recognise
	that people can
	share work and
	discuss ideas
	using online
	communities.
	In 2.3, recognise
	that people take,
	edit and share
	photographs
	using digital
	technology.
	In 2.4, recognise
	that people
	publish useful
	information on
	the web.
	In 2.5, recognise
	that videos can
	be edited digitally
	to great effect.
	In 2.6, recognise
	that scientists use
	a range of digital
	technologies when
	collecting and
	analysing data.)
	mumpm of natural

Characteristics of Effective Computing Teaching What would I see in a unit of Computing? What would I see in a Lesson?

Exploration of new software and	Developing competency in Computing	Opportunity to develop an understanding
hardware – incidental learning occurs	skills and understanding: teaching in a	of Computer Science, Information
this way	sequential manner; learning is	Technology and Digital Literacy within
	progressive.	blacks of work.
Practical, hands on learning	5-minute recap at the beginning of each	Opportunities to use and develop
opportunities.	lesson to encourage retention of key	Computing technical vocabulary e.g.
	knowledge and vocabulary.	cading, debugging, algarithm
Problem solving and reasoning	Range of activities both using	Development of knowledge, skills and
	technology and unplugged.	understanding in line with the National
		Curriculum.