

## **Codicote C of E School Progression of skills in Computing**

Computing	Algorithms	Programming and	Data and Data	Hardware and	Communication	Information
Progression		Development	Representation	Processing	and Networks	Technology
Foundation	Understands	Uses a simple	Begins to	Begins to operate	Begins to	Begins to know
Stage	simple	program on a	recognise the	simple equipment	understand how	that information
Emerging	instructions.	computer or a device.	different forms of	e.g. turns on CD	computers can be	can be retrieved
	Begins to follow		data. Graphs,	player and uses a	linked together.	on computers.
	simple		lists, webpages	remote control.	Begins to	
	procedures.		and tables.		understand email	
			Begins to collect		and websites.	
			and interpret			
			simple sets of			
			data.			
Foundation	Can understand	Completes a simple	Uses data to	Uses ICT	Uses digital	Use computer
Stage	and follow	program on a	answer questions	hardware to	devices and	devices and
Expected/Year 1	instructions and	computer or device.	e.g. favourite	interact with age	computers to	software to
Emerging	begin to write	Begins to write own	colour of class.	appropriate	communicate e.g.	create, research
	own algorithms.	program/sequences.	Uses computers	computer	webcams.	and store data.
			to make a table or	software.	Accesses and	Uses drawing
			list of data.	Start to recognise	saves information	software to
			Begins to collect	that computers	on a class	design a poster
			data on a data	need programs to	network folder.	for a purpose.
			logging device.	function.	Begins to obtain	Knows some
			Begin to		content from the	common uses of
			recognise that		world wide web	information
			digital content		using a web	technology
			can be in many		browser.	beyond the
			forms.			classroom.
Foundation	Begin to	Knows that users can	Recognises that	Understands that	Obtains content	Uses software

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Stage	understand what	develop their own	digital content	computers have	from the world	under supervision
Exceeding/Year	an algorithm is.	programs.	can be	no intelligence	wide web using a	to create, store
1 Expected	Begin to write a	Demonstrates this by	represented in	and can do	web browser.	and edit digital
	simple set of	creating simple	many forms.	nothing unless a	Understand the	content using
	instructions for a	programs e.g. on	Begins to	program is used.	importance of	appropriate files
	purpose using	programmable	distinguish	Recognises that	communicating	and folder names.
	symbols.	robots.	between some of	all software	safely and	Understands that
		Executes, checks and	these forms and	executed (used)	respectfully on	people interact
		changes programs.	can explain the	on digital devices	line and the need	with computers.
		Understands that	different ways	is programmed	for keeping	Shares their use
		programs execute by	that they	(look at	personal	of technology in
		following precise	communicate	examples)	information	school.
		instructions.	information.		private.	Knows common
			Organises, stores,		Knows what to do	use of
			edits and		when concerned	information
			manipulates data		about content or	technology
			in different digital		being contacted.	outside school.
			formats.			Talks about their
						work and makes
						changes to
						improve it.
Year 1	Understands what	Knows that users can	Recognises that	Understands that	Obtains content	Uses technology
Exceeding/Year	an algorithm is.	develop their own	digital content	computers have	from the world	with increasing
2 Emerging	Writes a set of	programs.	can be	no intelligence	wide web using a	independence to
	instructions for a	Demonstrates this by	represented in	and can do	web browser.	purposely
	purpose using	creating simple	many forms.	nothing unless a	Understand the	organise digital
	symbols, numbers	programs e.g. on	Begins to	program is used.	importance of	content.
	and words.	programmable	distinguish	Recognises that	communicating	Shows awareness
	Understands that	robots,.	between some of	all software	safely and	of the quality of
	computes need	Executes, checks and	these forms and	executed (used)	respectfully on	digital content

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	precise	changes programs.	can explain the	on digital devices	line (e-safety) and	collected.
	instructions.	Understands that	different ways	is programmed	the need for	Uses software to
	Shows care and	programs execute by	that they	(look at	keeping personal	manipulate and
	precision to avoid	following precise	communicate	examples)	information	present digital
	errors.	instructions.	information.	Begin to	private.	content: data and
		Begins to use logical	Organises, stores,	recognise and use	Knows what to do	information.
		reasoning to predict	edits and	a range of input	when concerned	Shares their
		the behaviour of	manipulates data	and output	about content or	experiences of
		programs.	in different digital	devices e.g	being contacted.	technology in
			formats.	robotics.	Begins to carry	school and
				Starts to	out simple web	outside school.
				understand how	searches to collect	Talks about their
				programs specify	digital content.	work and makes
				the function of a		some
				general purpose		improvements to
				computer.		solutions based
						on feedback
						received.
Year 2 Expected	Understands what	Develops their own	Recognises the	Recognises that a	Navigates the web	Uses technology
	an algorithm is	programs e.g. robots.	different types of	range of digital	and can carry out	with increasing
	and is able to	Uses arithmetic	data e.g. text and	devices can be	simple web	independence to
	express simple	operators and what if	number.	considered a	searches to collect	purposely
	linear (non-	statements and loops	Appreciates that	computer (look at	digital content.	organise digital
	branching)	within programs.	programs can	examples).	Demonstrates use	content.
	algorithms as	Uses logical	work with	Recognises and	of computers	Shows awareness
	symbols.	reasoning to predict	different types of	uses a range of	safely and	of the quality of
	Understands that	the behaviour of	data.	input and output	responsibly,	digital content
	computers need	programs and detects	Recognises that	devices (e.g.	knowing a range	collected.
	precise	and corrects simple	data can be	robotics)	of ways to report	Uses software to
	instructions.	semantic errors i.e.	structured in	Understands how	unacceptable	manipulate and

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	Demonstrates	debugging.	tables to make it	programs specify	content and	present digital
	care and precision		useful.	the function of a	contact when	content: data and
	to avoid errors.		Confidently	general purpose	online.	information.
	Understand that		organises, stores,	computer.		Shares their
	algorithms are		edits and			experiences of
	used on digital		manipulates data			technology in
	devices as		in a range of			school and
	programs.		digital formats.			outside school.
	Simple algorithms		Begins to			Talks about their
	using loops and		recognise the			work and makes
	selection (as		difference			some
	statements).		between data and			improvements to
	Uses logical		information.			solutions based
	reasoning to					on feedback
	predict outcomes.					received.
	Detects and					
	corrects errors					
	(debugging) in					
	algorithms.					
Year 2	Understands what	Develops their own	Recognises the	Recognises that a	Navigates the web	Uses technology
Exceeding/End	an algorithm is	programs e.g. robots.	different types of	range of digital	and can carry out	with increasing
of Key Stage	and is able to	Uses arithmetic	data e.g. text and	devices can be	simple web	independence to
	express simple	operators and what if	number.	considered a	searches to collect	purposely
	linear (non-	statements and loops	Appreciates that	computer (look at	digital content.	organise digital
	branching)	within programs.	programs can	examples).	Demonstrates use	content.
	algorithms as	Uses logical	work with	Recognises and	of computers	Shows awareness
	symbols.	reasoning to predict	different types of	uses a range of	safely and	of the quality of
	Understands that	the behaviour of	data.	input and output	responsibly,	digital content
	computers need	programs and detects	Recognises that	devices (e.g.	knowing a range	collected.
	precise	and corrects simple	data can be	robotics)	of ways to report	Uses software to

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	instructions.	semantic errors i.e.	structured in	Understands how	unacceptable	manipulate and
	Demonstrates	debugging.	tables to make it	programs specify	content and	present digital
	care and precision	Begins to create	useful.	the function of a	contact when	content: data and
	to avoid errors.	programs that	Confidently	general purpose	online.	information.
	Understand that	implement	organises, stores,	computer.	Begins to	Shares their
	algorithms are	algorithms to achieve	edits and	Begins to	understand the	experiences of
	used on digital	given goals.	manipulates data	recognise that	difference	technology in
	devices as		in a range of	computers collect	between the	school and
	programs.		digital formats.	data from various	internet and	outside school.
	Designs simple		Recognises the	input devices e.g.	internet services	Talks about their
	algorithms using		difference	sensors.	e.g. world wide	work and makes
	loops and		between data and		web.	some
	selection (as		information.			improvements to
	statements).					solutions based
	Uses logical					on feedback
	reasoning to					received.
	predict outcomes.					Begins to create
	Detects and					digital content to
	corrects errors					achieve a given
	(debugging) in					goal through
	algorithms.					combining
	Begins to use					software e.g.
	design solutions					blogs.
	e.g. repetition to					
	improve					
	algorithms.					
Year 3 Emerging	Designs some	Begins to create	Understands the	Begins to	Understands the	Collects,
	solutions	programs that	difference	recognise that	difference	organises and
	(algorithms) that	implement	between data and	computers collect	between the	presents data and
	use repetition and	algorithms to achieve	information.	data from various	internet and	information in

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	two way selection (i.e if, then, else.)	given goals. Identifies and assigns	Knows why sorting data in a	input devices e.g. sensors and	internet services e.g. world wide	digital content. Creates digital
	Uses diagrams to express solutions.	variables in programs.	'flat file' can improve	application software.	web. Shows some	content to achieve a given goal
	Starts to use logical reasoning to predict outputs,	Uses loop commands "until" and sequences of selection	searching for information. Begins to use	Begins to understand the difference	awareness of, and can use some internet services	through combining software,
	showing some awareness of inputs.	statements in programs, including if, then, else	filters or can perform single criteria searches	between hardware and application	such as VOIP. Recognises what is acceptable and	packages and internet services to communicate
	inputo.	statements.	for information.	software and their roles within a computer	unacceptable behaviour when using	with a wider audience e.g blogging.
				system.	technologies and online services.	Makes some appropriate improvements to solutions based
						on feedback received and can comment on the
						success of the solution.
Year 3 Expected	Designs solutions (algorithms) that use repetition and	Create programs that implement algorithms to achieve	Understands and can explain the difference	Recognise that computers collect data from various	Understands the difference between the	Confidently collects, organises and
	two way selection (i.e if, then, else.)	given goals. Identifies and assigns	between data and information.	input devices e.g. sensors and	internet and internet services	presents data and information in
	Uses diagrams to express solutions.	variables in programs.	Knows why sorting data in a	application software.	e.g. world wide web.	digital content. Creates digital
	Uses logical	Uses loop commands	'flat file' can	Understand the	Shows awareness	content to achieve

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	reasoning to	"until" and sequences	improve	difference	of, and can use	a given goal
	predict outputs,	of selection	searching for	between	some internet	through
	showing some	statements in	information.	hardware and	services such as	combining
	awareness of	programs, including	Uses filters or can	application	VOIP.	software,
	inputs.	if, then, else	perform single	software and	Recognises what	packages and
		statements.	criteria searches	their roles within	is acceptable and	internet services
			for information.	a computer	unacceptable	to communicate
				system.	behaviour when	with a wider
					using	audience e.g
					technologies and	blogging.
					online services.	Makes effective
						improvements to
						solutions based
						on feedback
						received and can
						comment on the
						success of the
						solution.
Year 3 exceeding	Designs solutions	Create programs that	Understands and	Recognise that	Understands the	Collects,
	(algorithms) that	implement	can clearly	computers collect	difference	organises and
	use repetition and	algorithms to achieve	explain the	data from various	between the	presents data and
	two way selection	given goals.	difference	input devices e.g.	internet and	information in
	(i.e if, then, else.)	Identifies and assigns	between data and	sensors and	internet services	digital content.
	Uses diagrams to	variables in	information.	application	e.g. world wide	Creates digital
	express solutions.	programs.	Knows why	software.	web.	content to achieve
	Uses logical	Uses loop commands	sorting data in a	Understand the	Shows awareness	a given goal
	reasoning to	"until" and sequences	'flat file' can	difference	of, and can use	through
	predict outputs,	of selection	improve	between	some internet	combining
	showing some	statements in	searching for	hardware and	services such as	software
	awareness of	programs, including	information.	application	VOIP.	packages and

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	inputs.	if, then, else	Uses filters and	software and	Recognises what	internet services
	Begins to show an	statements.	can perform	their roles within	is acceptable and	to communicate
	awareness of	Begins to understand	single criteria	a computer	unacceptable	with a wider
	tasks best	the difference	searches for	system.	behaviour when	audience e.g
	completed by	between 'if' and 'if',	information.	Begins to	using	blogging.
	humans or	then and else	Starts to perform	understand why	technologies and	Makes effective
	computers.	statements.	more complex	and when	online services.	improvements to
			searches for	computers are	Produces safety	solutions based
			information e.g.	used.	guidance on	on feedback
			relational		viruses, cyber	received and can
			operators.		bullying and	comment on the
					stranger danger.	success of the
						solution.
						Makes
						judgements about
						the effectiveness
						and suitability of
						the digital content
						for the targeted
						audience.
Year 4 Emerging	Shows an	Begin to understand	Understands and	Begins to	Understands how	Begins to make
	awareness of	differences between	can clearly	understand why	to effectively use	judgements about
	tasks best	'if' and 'if', then and	explain the	and when	search engines	digital content
	completed by	else statements.	difference	computers are	and knows how	when evaluating
	human or	Uses some variable	between data and	used.	search results are	and assigning it
	computers.	and relational	information.	Understands the	selecting	for a given
	Begins to design	operators within a	Knows why	main functions of	including that	audience.
	solutions by	loop to control	sorting data in a	the operating	search engines are	Recognises the
	decomposing a	'endings' in	'flat file' can	systems.	'web crawler	audience when
	problem.	programs.	improve	Begins to know	programs'	designing and

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	Begins to	Designs, writes and	searching for	the difference	Selects, combines	creating digital
	recognise that	debugs (modular)	information.	between physical,	and uses some	content.
	there is more than	programs using	Uses filters and	wireless and	internet services.	Understands the
	one solution to a	procedures	can perform	mobile networks.	Demonstrates	potential of
	problem.	(algorithms).	single criteria	Look at examples	responsible use of	information
		Begins to know that a	searches for	e.g. internet: how	technologies and	technology for
		procedure can be	information.	they provide	online services	collaboration
		used to hide details in	Starts to perform	multiple services	and knows how to	when computers
		programs.	more complex	such as the world	report concerns.	are networked.
			searches for	wide web.		Uses criteria to
			information e.g.			evaluate the
			relational			quality of
			operators.			solutions.
			Begins to analyse			
			and evaluate data			
			and information			
			and recognises			
			that poor quality			
			data leads to			
			unreliable results.			
Year 4 Expected	Knows which	Understands	Understands and	Understands why	Understands how	Makes
	tasks best	differences between	can clearly	and when	to effectively use	judgements about
	completed by	and appropriately	explain the	computers are	search engines	digital content
	human or	uses 'if' and 'if',	difference	used.	and knows how	when evaluating
	computers.	then and else	between data and	Understands the	search results are	and assigning it
	Designs solutions	statements.	information.	main functions of	selecting	for a given
	by decomposing a	Uses variable and	Knows why	the operating	including that	audience.
	problem and	relational operators	sorting data in a	systems.	search engines are	Recognises the
	creates a sub-	within a loop to	'flat file' can	Knows the	'web crawler	audience when
	solution for each	control 'endings' in	improve	difference	programs'	designing and

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	part of the	programs.	searching for	between physical,	Selects, combines	creating digital
	problem	Designs, writes and	information.	wireless and	and uses internet	content.
	(decomposition)	debugs (modular)	Performs more	mobile networks.	services.	Understands the
	Recognises that	programs using	complex searches	Look at examples	Demonstrates	potential of
	there is more than	procedures	for information	e.g. internet: how	responsible use of	information
	one solution to a	(algorithms).	e.g. using	they provide	technologies and	technology for
	problem.	Knows that a	Booleam and	multiple services	online services	collaboration
		procedure can be	relational	such as the world	and knows a	when computers
		used to hide details in	operators.	wide web.	range of ways to	are networked.
		programs.	Analyses and		report concerns.	Uses criteria to
			evaluates data and			evaluate the
			information and			quality of
			recognises that			solutions.
			poor quality data			Can identify
			leads to unreliable			improvements,
			results and			making some
			inaccurate			refinements to the
			conclusions.			solution and
						future solutions.
Year 4	Knows which	Understands	Clearly explain	Understands why	Understands how	Makes sound
Exceeding	tasks are best	differences between	the difference	and when	to effectively use	judgements about
	completed by	and appropriately	between data and	computers are	search engines	digital content
	human or	uses 'if' and 'if',	information,	used.	and knows how	when evaluating
	computers, giving	then and else	giving examples.	Understands the	search results are	and assigning it
	examples.	statements.	Knows why	main functions of	selecting	for a given
	Designs solutions	Uses variable and	sorting data in a	the operating	including that	audience.
	by decomposing a	relational operators	'flat file' can	systems.	search engines are	Recognises the
	problem and	within a loop to	improve	Knows the	'web crawler	audience when
	creates a sub-	control 'endings' in	searching for	difference	programs'	designing and
	solution for each	programs.	information.	between physical,	Selects, combines	creating digital

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	part of the	Designs, writes and	Performs more	wireless and	and uses internet	content.
	problem	debugs (modular)	complex searches	mobile networks.	services.	Understands the
	(decomposition).	programs using	for information	Look at examples	Demonstrates	potential of
	Recognises that	procedures	e.g. using	e.g. internet: how	responsible use of	information
	there are several	(algorithms).	Booleam and	they provide	technologies and	technology for
	solutions to the	Knows that a	relational	multiple services	online services	collaboration
	same problem and	procedure can be	operators.	such as the world	and knows a	when computers
	various	used to hide details in	Analyses and	wide web.	range of ways to	are networked.
	algorithms exist	programs.	evaluates data and	Begins to	report concerns.	Uses criteria to
	for different	Begins to recognise	information and	recognise the	Begins to	evaluate the
	purposes.	that programming	recognises that	function of the	understand how	quality of
		bridges the gap	poor quality data	main internal	search engines	solutions.
		between algorithms	leads to unreliable	parts of basic	rank results.	Can confidently
		and computers.	results and	computer designs		identify
			inaccurate	(architecture.)		improvements,
			conclusions.			making some
			Starts to			refinements to the
			understand key			solution and
			vocabulary e.g.			future solutions.
			binary and bit			
			patterns.			
Year 5 Emerging	Knows which	Begins to recognise	Knows why	Understands why	Begins to	Makes sound
	tasks are best	that programming	sorting data in a	and when	understand how	judgements about
	completed by	bridges the gap	'flat file' can	computers are	search engines	digital content
	human or	between algorithms	improve	used.	rank search	when evaluating
	computers.	and computers.	searching for	Understands the	results.	and assigning it
	Designs solutions	Has some practical	information.	main functions of	Understands how	for a given
	by decomposing a	experience of high	Performs more	the operating	to construct static	audience.
	problem and	level textural	complex searches	system.	web pages using	Recognises the
	creates a sub-	languages e.g.	for information	Knows the	HTML and CSS.	audience when

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	solution for each	standard libraries	e.g. using	difference	Begins to	designing and
	part of the	when programming.	Booleam and	between physical,	understand data	creating digital
	problem	Uses some operators	relational	wireless and	transmission	content, (makes
	(decomposition).	and expressions e.g.	operators.	mobile networks.	between digital	examples and
	Recognises that	Booleam.	Analyses and	Look at examples	computers over	tests them).
	there are several		evaluates data and	e.g. internet: how	networks	Understands the
	solutions to the		information and	they provide	including the	potential of
	same problem.		recognises that	multiple services	internet i.e. IP	information
	Understands that		poor quality data	such as the world	addresses and	technology for
	various		leads to unreliable	wide web.	packet switching.	collaboration
	algorithms exist		results and	Recognise the		when computers
	for different		inaccurate	function of the		are networked.
	functions.		conclusions.	main internal		Uses criteria to
			Starts to	parts of basic		evaluate the
			understand key	computer designs		quality of
			vocabulary e.g.	(architecture.)		solutions.
			binary and bit			Confidently
			patterns.			identify
			Begins to			improvements,
			understand that			making some
			digital computers			refinements to the
			are binary to			solution and
			represent all data.			future solutions.
Year 5 Expected	Knows and can	Understands that	Knows why	Recognise the	Understands how	Evaluates the
	explain which	programming bridges	sorting data in a	function of the	search engines	appropriateness
	tasks are best	the gap between	'flat file' can	main internal	rank search	of digital
	completed by	algorithmic solutions	improve	parts of basic	results and test	services, internet
	human or	and computers.	searching for	computer designs	some of these	services and
	computers.	Has practical	information.	(architecture.)	systems.	application
	Designs solutions	experience of high	Performs more	Begins to	Understands how	software to

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Progression	U	Development	Representation	Processing	and Networks	Technology
	by decomposing a	level textural	complex searches	understand the	to construct static	achieve given
	problem and	languages e.g.	for information	concept behind	web pages using	goals.
	creates a sub-	standard libraries	e.g. using	the fetch-execute	HTML and CSS.	Recognises
	solution for each	when programming.	Booleam and	cycle.	Understands data	ethical issues
	part of the	Uses some operators	relational	Starts to	transmission	surrounding the
	problem	and expressions e.g.	operators.	appreciate that	between digital	application of
	(decomposition).	Booleam.	Analyses and	there is a range of	computers over	information
	Recognises that	Starts to apply these	evaluates data and	operating	networks	technology
	there are several	in the context of	information and	systems and	including the	beyond school.
	solutions to the	program control (e.g.	recognises that	application	internet i.e. IP	Designs criteria
	same problem.	input/process/output.)	poor quality data	software for the	addresses and	to critically
	Understands that		leads to unreliable	same hardware.	packet switching.	evaluate the
	various		results and			quality of
	algorithms exist		inaccurate			solutions.
	for different		conclusions.			Uses the criteria
	functions.		Begins to			to identify
	Begins to identify		understand that			improvements,
	patterns in		digital computers			and can make
	algorithms that		are binary to			appropriate some
	help to solve		represent all data.			refinements to the
	specific problems.		Begins to			solution.
	ļ		understand how			
	ļ		bit patterns			
	ļ		represent			
			numbers and			
			images.			
Year 5	Explains	Understands that	Knows why	Recognises and	Understands how	Evaluates the
Exceeding	confidently which	programming bridges	sorting data in a	understands the	search engines	appropriateness
	tasks are best	the gap between	'flat file' can	function of the	rank search	of digital
	completed by	algorithmic solutions	improve	main internal	results and test	services, internet

Computing	Algorithms	Programming and	Data and Data	Hardware and	Communication	Information
Progression		Development	Representation	Processing	and Networks	Technology
	human or	and computers.	searching for	parts of basic	and evaluate some	services and
	computers.	Has practical	information.	computer designs	of these systems.	application
	Designs solutions	experience of high	Performs more	(architecture.)	Understands how	software to
	by decomposing a	level textural	complex searches	Understands the	to construct static	achieve given
	problem and	languages e.g.	for information	concepts behind	web pages using	goals.
	creates a sub-	standard libraries	e.g. using	the fetch-execute	HTML and CSS.	Recognises
	solution for each	when programming.	Booleam and	cycle.	Understands data	ethical issues
	part of the	Uses a range of	relational	Starts to	transmission	surrounding the
	problem	operators and	operators.	appreciate that	between digital	application of
	(decomposition).	expressions e.g.	Analyses and	there is a range of	computers over	information
	Recognises that	Booleam.	evaluates data and	operating	networks	technology
	there are several	Starts to apply these	information and	systems and	including the	beyond school.
	solutions to the	in the context of	recognises that	application	internet i.e. IP	Designs criteria
	same problem.	program control (e.g.	poor quality data	software for the	addresses and	to critically
	Understands that	input/process/output.)	leads to unreliable	same hardware.	packet switching.	evaluate the
	various		results and			quality of
	algorithms exist		inaccurate			solutions.
	for different		conclusions.			Uses the criteria
	functions.		Knows that			to identify
	Identifies patterns		digital computers			effective
	in algorithms that		use binary to			improvements,
	help to solve		represent all data.			and can make
	specific problems.		Understands how			appropriate some
			bit patterns			refinements to the
			represent			solution.
			numbers and			
			images.			
Year 6 Emerging	Begins to	Understands that	Knows that	Recognises and	Understands how	Begins to justify
	understand that	programming bridges	digital computers	understands the	search engines	the choice of,
	iteration is the	the gap between	use binary to	function of the	rank search	combines and

Computing	Algorithms	Programming and	Data and Data	Hardware and	Communication	Information
Progression		Development	Representation	Processing	and Networks	Technology
	repetition of a	algorithmic solutions	represent all data.	main internal	results and test	uses multiple
	process such as a	and computers.	Understands how	parts of basic	and evaluate some	digital devices,
	loop.	Has practical	bit patterns	computer designs	of these systems.	internet services
	Recognises that	experience of high	represent	(architecture.)	Understands how	and application
	different	level textural	numbers and	Understands the	to construct static	software to
	algorithms exist	languages e.g.	images.	concepts behind	web pages using	achieve given
	for the same	standard libraries	Begins to know	the fetch-execute	HTML and CSS.	goals.
	problem.	when programming.	that computers	cycle.	Understands data	Starts to evaluate
	Detects errors in	Uses a range of	transfer data in	Knows that there	transmission	the
	algorithms.	operators and	binary (code).	is a range of	between digital	trustworthiness of
	Rewrites own	expressions e.g.	Starts to	operating	computers over	digital content.
	tests and	Booleam.	recognise the	systems and	networks	Begins to
	sequences.	Starts to apply these	relationship	application	including the	consider how the
	Is able to identify	in the context of	between binary	software for the	internet i.e. IP	use of technology
	some similarities	program control (e.g.	and file size	same hardware.	addresses and	can impact on
	and differences in	input/process/output.)	(uncompressed)	Tests, compares	packet switching.	society.
	situations and can	Starts to select the	Defines data	and contrasts the	Begins to know	
	use these to solve	appropriate data	types: real	effectiveness of	the names of	
	problems (pattern	types.	numbers and	operating	hardware e.g hubs	
	recognition.)		booleam.	systems (eg.	and routers.	
			Queries data on	Windows		
			one table using	android)		
			typical query			
			language.			
Year 6 Expected	Understand that	Understands that	Knows that	Recognises and	Understands how	Justifies the
	iteration is the	programming bridges	digital computers	understands the	search engines	choice of,
	repetition of a	the gap between	use binary to	function of the	rank search	combines and
	process such as a	algorithmic solutions	represent all data.	main internal	results.	uses multiple
	loop.	and computers.	Understands how	parts of basic	Clearly evaluates	digital devices,
	Recognises that	Has practical	bit patterns	computer designs	these systems.	internet services

Computing	Algorithms	Programming and	Data and Data	Hardware and	Communication	Information
Progression		Development	Representation	Processing	and Networks	Technology
	different	experience of high	represent	(architecture.)	Understands how	and application
	algorithms exist	level textural	numbers and	Understands the	to construct static	software to
	for the same	languages e.g.	images.	concepts behind	web pages using	achieve given
	problem.	standard libraries	Knows that	the fetch-execute	HTML and CSS.	goals.
	Detects errors in	when programming.	computers	cycle.	Designs and	Evaluates the
	algorithms.	Uses a range of	transfer data in	Knows that there	creates own web	trustworthiness of
	Rewrites and tests	operators and	binary (code).	is a range of	pages for a	digital content.
	own tests and	expressions e.g.	Recognises the	operating	purpose.	Knows how the
	sequences.	Booleam and applies	relationship	systems and	Understands data	use of technology
	Is able to identify	them in the context	between binary	application	transmission	can impact on
	similarities and	of program control (	and file size	software for the	between digital	society.
	differences in	e.g.	(uncompressed)	same hardware.	computers over	Begins to design
	situations and can	input/process/output.)	Defines data	Tests, contrasts	networks	criteria for users
	use these to solve	Starts to select the	types: real	and evaluates the	including the	to evaluate the
	problems (pattern	appropriate data	numbers and	effectiveness of	internet i.e. IP	quality of
	recognition.)	types.	Booleam.	operating	addresses and	solutions and uses
			Queries data on	systems (eg.	packet switching.	the feedback to
			one table using	Windows		identify some
			typical query	android)		improvements.
			language.			
Year 6	Understands that	Understands that	Knows that	Recognises and	Understands how	Justifies the
Exceeding	iteration is the	programming bridges	digital computers	understands the	search engines	choice of, and
	repetition of a	the gap between	use binary to	function of the	rank search	independently
	process such as a	algorithmic solutions	represent all data.	main internal	results.	combines and
	loop.	and computers.	Understands how	parts of basic	Clearly evaluates	uses multiple
	Recognises that	Has practical	bit patterns	computer designs	these systems.	digital devices,
	different	experience of high	represent	(architecture.)	Understands how	internet services
	algorithms exist	level textural	numbers and	Understands the	to construct static	and application
	for the same	languages e.g.	images.	concepts behind	web pages using	software to
	problem.	standard libraries	Knows that	the fetch-execute	HTML and CSS.	achieve given

Computing	Algorithms	Programming and	Data and Data	Hardware and	Communication	Information
Progression		Development	Representation	Processing	and Networks	Technology
	Detects errors in	when programming.	computers	cycle.	Designs and	goals.
	algorithms.	Uses a range of	transfer data in	Tests, contrasts	creates own web	Evaluates the
	Rewrites and tests	operators and	binary (code).	and evaluates a	pages for a	trustworthiness of
	own sequences.	expressions e.g.	Recognises the	range of	purpose.	digital content
	Is able to identify	Booleam and applies	relationship	operating	Understands data	and considers the
	similarities and	them in the context	between binary	systems and	transmission	usability of visual
	differences in	of program control (	and file size	application	between digital	design features
	situations and can	e.g.	(uncompressed)	software that is	computers over	when designing
	use these to solve	input/process/output.)	Defines data	often used for the	networks	and creating
	problems (pattern	Starts to select the	types: real	same hardware.	including the	digital artefacts
	recognition.)	appropriate data	numbers and	Begins to	internet i.e. IP	for a known
	Begins to	types.	Booleam.	understand the	addresses and	audience.
	recognise that	Starts to appreciate	Queries data on	Von Neuman	packet switching.	Identifies and
	some problems	the need for and	one table using	architecture in	Knows key names	explains how the
	share the same	writes their own	typical query	relation to the	of hardware e.g.	use of technology
	characteristics	"custom" functions	language.	fetch-execute	hubs, routers,	can impact on
	and use the same	to improve programs.	Begins to	cycle, including	switches and the	society.
	algorithms to	Starts to detect and	understand how	how data is	names of	Designs criteria
	solve both	correct syntactical	numbers, images,	stored in	protocols	for users to
	(generalisation)	errors.	sounds and	memory.	e.g.SMTP, IMAP,	evaluate the
			character sets use	Understand the	POP, FTP,	quality of
			the same bit	basic function	TCP/IP associated	solutions and uses
			patterns.	and operation of	with computer	the feedback to
				location	systems.	identify some
				addressable		improvements
				memory.		and can make
						appropriate
						refinements to the
						solution.