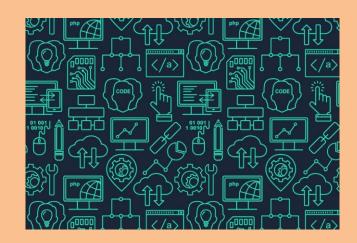
Curriculum Skills and Progression Map Computing: 2022 to 2023











The Computing Curriculum and Christian Distinctiveness

at Horsford CofE VA Primary School

At Horsford C of E Primary School, our values **compassion**, **courage** and **responsibility** are promoted and heavily featured in our Computing curriculum. Pupils are living within an increasingly technological world and aim to develop confidence and knowledge in this area and to share their Christian values through different elements of technology. In school we drive to take responsibility for our actions and learning attitudes using technology. We reflect on the story 'The wise and foolish man' and take responsibility by not always taking the easy option and try something that might challenge us but will broadly benefit ourselves and people around us. Online safety continues to be at the forefront of learning and we have a huge focus on online behaviour and how to have a positive online presence. We take courage from Esther who spoke out when she saw her people being treated unfairly (Esther 2-9) to help us report any online incidents or concerns children may have.

'Spirituality is the bitter-sweet yearning for beauty, truth, love and wonder beyond ourselves. It is a longing we pursue together and a treasure we glimpse in ourselves and one another and seek beyond us into eternity. It is life in all its fullness.'







The Computing Curriculum and Provision for Pupils with SEND

At Horsford C of E VA Primary school, we believe all pupils should have the opportunity to learn to the best of their capabilities through a broad and balanced, inclusive curriculum. For our pupils with a Special Educational Need, we scaffold their learning to provide them with the strongest opportunities for success in our school. We believe firmly in the SEND Code of Practice's statement that 'every teacher is a teacher of SEN' and that our pupils with SEN should be provided with the same opportunities as their peers in our school. This means that, with their learning being personalised to meet their areas of need, they feel included in the classroom and make progress year on year. Reasonable adjustments are made in all lessons to enable this.

The Computing curriculum can be adapted to meet the needs of children with SEND in the following ways.

Word Banks for pre-learning and to support during topics and themes	Visual Timetables – class and individual
Breaking down lessons into short, manageable chunks	Fidget toys available
Mixed ability groups – using peers as support and role models	Word lists of key vocabulary for pre-learning and as prompts
Adult assistance nearby	Trying a 1:1 adult/adult nearby
Using another student as a reader/support	Checking seating position – sight problems – near the back for sensory
	needs
Knowledge map/Mind Maps	A safe/quiet space in or near the classroom
Recording devices to record their answers/sentences – talking tins, iPad	Extra time for the trickier tasks
Printing work larger and in smaller chunks	Use of a scribe
Breaks	Simplified work
Now/Next	

When planning for Computing class teachers should adapt their lessons where necessary using ideas taken from this list, however it is important to remember this list is not exhaustive and other adaptations may be needed for children with specific needs.



	COMPUTING AGE RELATED STATUTORY COVERAGE	
EYFS	KEY STAGE ONE LEARNING	KEY STAGE TWO LEARNING
EYFS No EYFS guidance and ELG for this area	 KEY STAGE ONE LEARNING Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions Create and debug simple programs Use logical reasoning to predict the behaviour of simple programs Use technology purposefully to create, organise, store, manipulate and retrieve digital content Recognise common uses of information technology beyond school Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. Both Key Stages: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	 KEY STAGE TWO LEARNING Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Use sequence, selection, and repetition in programs; work with variables and various forms of input and output Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content to accomplish given goals

Computational Thinking Skills							
Tinkering	Making	Collaboration	Persevering	Logic	Pattern	Abstraction	Algorithms and Decomposition



	Computing EYFS Curriculum	
No EYFS guidance and ELG for this area		
	Vocabulary	
Computer Internet Laptop Computing is covered throughout the year through weekly	 Program Technology Inquiry themes taken from the interests of the children. A weel 	Website Ipad Touch screen kly hook sheet is published, and specific projects are
identified on them. Weekly enhanced provision is planned 'Computational thinking' skills will also be encouraged as an in everyday life.		
	Early Years – Computing	
Network and Internet	Using ICT	Making Things Happen
 E Safety Can they act if they find something they are unsure of (including identifying people who can help)? 	 Can they make marks using technology? Can they tinker with technology and learn from this? 	 Can they explore and interact using a range of equipment? Can they preserve with a task until it is complete? Can they sequence things in the correct order?
Problem Solving and Logical Thinking	Creative Content	Digital Literacy
 Can they break down a problem into simpler steps? Can they begin to plan and test instructions? Can they work out different ways to do something? Can they show that they are applying logic to a simple task? 	 Can they create original content? Can they make something, check it works and fix it if they need to? 	 Can they collect information using ICT? (e.g. take photographs, voice recordings, text)
	Early Years - Greater Depth	•
• Can they follow and evaluate a set of instructions (simple algorithm)?	Can they save or capture and retrieve their origina	Il content?



Computing Skills Map KS1							
	C	omputationa	al Thinking Skills				
Tinkering Creating Collaboratio	n Persevering Debugging	³ Logic	Pattern	Abstraction	Algorithms and Decomposition		
Cycle Can they recognise ICT around them? Can ICT sources?	they explore information fr (All Year)	rom various	ICT sources? (Al	ll Year)	Cycle 2 em? Can they explore information from various		
Autumn 1	<u>Autumn 2</u>			<u>tumn 1</u>	Autumn 2		
Computer Skills Can they use names for ICT components? Can they move objects around on a screen? Can they develop awareness and use of keyboard layout and use navigation skills appropriately? <u>Word Processing</u> Can they create original content using digital technology and save it? Can they type a simple phrase using a keyboard? Can they explore different features of a word processing application?	Online Safety Do they know that personal information should not be shared online? Do they understand that we need permission to use someone else's things? Do they understand if someone owns something it is theirs? Do they understand that you need permission to use digital things and there might be rules about what you can do with it if you have permission?		Can they use na components? Can they move screen? Can they develo use of keyboard navigation skills <u>Pow</u> Can they resize	objects around or op awareness and l layout and use appropriately? <u>verPoint</u> a picture? a simple slideshov	should not be shared online? Do they recognise the different forms of digital communication? Can they recognise advertising on websites and learn to ignore it and know that everything on the internet isn't true?		
Spring 1	Spring 2		<u>Sr</u>	oring 1	Spring 2		
simple series of algorithms (instructions)? Can they begin to plan and test their instructions? Can they use logical reasoning to solve a problem? Can they repeat a series of Can they begin to write and debug a			Can they unders something mov Can they give a make something Can they progra	single instruction	instructions? to Can they plan, create and debug a simple programme?		



		Can they explain what has happened when using ICT for control?			
Summer 1	Summer 2	Summer 1	Summer 2		
<u>Computer Art</u> Can they use a simple art program? Can they create original content using digital technology and save it? Can they tinker, create and save a piece of art using technology?	Using and applying skills Can they create original content using digital technology and save it? Can they recognise different ways of using ICT and decide which to use? Can they understand that technology is used in a range of ways?	<u>Computer Art</u> Can they use a simple art program? Can they create original content using digital technology and save it? Can they use shape tools to draw? Can they understand that technology is used in a range of ways? Can they tinker, create and save a piece of art using technology?	Internet and PowerPoint Can they find information on the internet? Can they understand the importance of ICT? Can they experiment with various features to create content (in a small group or alone)? Can they create, edit and format text?		
	Year 1/2 - 0	Greater Depth			
Can they use digital technology to	king to solve a problem involving progra organise and edit content? (e.g. text in a orithms are more efficient than others a	an app, editing images)	iese?		
	Deeper	Learning			
and the skills taught within the les	he words to form a deeper learning que son but as a starting point use the quest logy needs the internet to work. Do you	ion words and question stems to supp agree/disagree? Why? Give examples			
 Odd one out Sometimes, always, never Convince me (Convince me that I need to be safe on the internet) Prove it- Prove that algorithms need to be put in the correct order. 					
True or False	- Eurthor I	What's the same/difference nformation	:f		
See Appendix A for long term plan for each See Appendix B for Assembly plan overview See Appendix C for definitions for Comput	n combined year groups. N	mormation			



	Computing Skills Map KS2 – Lower School									
	Computational Thinking Skills									
Tinkering	Making	Collabora	tion	Persevering	Debugging	Log	-	Pattern	Abstraction	Algorithms and Decomposition
					Year 3	/4 – C	Compu	iting		
		<u>Cyc</u>							<u>Cycl</u>	
Can they reco		· · · · · · · · · · · · · · · · · · ·		n the real world	d? Can they us	se	Can	they recognise th		ICT in the real world? Can they use
		across subj	ects?					• •	ICT across subje	
	<u>utumn 1</u>			Autum				Autumn	_	<u>Autumn 2</u>
	puter Skills		<u>P</u>	rogramming- S				Computer S		Computer Animation
Can they use @		•		abstrac				iey navigate a we	ebsite by	Do they understand how
navigate a web	•	-		they understan			clicking on links?			computers have made a
links? Are they				ortance of clear	and precise		Are they confident typing and			difference?
confident to us	e a compute	er?		uctions?			confident to use a computer? Do they understand what			
	<u>Word</u>		Can	they use algorit	thms to contr			PowerPo		animation means?
Can they use IC	-		movement?			Do they know how to manipulate text		•	Can they create a short computer	
present their w		•	Can they make accurate predictions			(e.g. underline text, centre text,			animation?	
and position te	-			about the outcome of a program			change font and size)?			Can they use a variety of software
align text? Can they format text the		they have written?		(Can they save files (e.g. word doc,		. word doc,	to design and create content		
towards a specific purpose? Can		Can they write a program with a		I	pictures) to an appropriate folder?			that accomplishes given goals?		
		ence of instruc	tions?	(Can they insert media into a					
numbering? Can they order and		I	preser	ntation?						
organise text us	organise text using a word		(Can th	iey create a prese	entation that is				
processing program? Can they use			aimed	at a specific aud	ience?					
the automatic s	spell checker	r to edit								
spellings?										



Spring 1	Spring 2	Spring 1	Spring 2
Online Safety and Being Cyber	Programming- designing and	Online Safety	Programming- Algorithms
Smart	<u>debugging</u>	Can they understand the importance	Designing and Debugging
Can they recognise that cyber	Can they create and debug simple	of having a safe profile online?	Can they make accurate
bullying is unacceptable and will be	programs?	Can they understand the importance	predictions about the outcome of
sanctioned in line with the school's	When a program goes wrong, can	of keeping personal information safe?	a program they have written?
policy?	they debug it?	Can they identify and understand	Can they understand what is
Do they understand some of the law	Can they decompose a game into	what cyberbullying looks like?	important and what is
around what it is illegal to do with	its parts?	Can they recognise that cyber bullying	unimportant?
computers? Can they give examples	Can they design, program, debug,	is unacceptable and will be sanctioned	Are they aware that thinking
of activities which break the law	present and evaluate a game?	in line with the school's policy?	about what is ignored or included
using computers? Can they identify		Can they explain how to be a	in computer simulations and
victims of cybercrime?		responsible digital citizen?	games is an important aspect of
		Can they explain the term	design?
		'plagiarism'?	
Summer 1	Summer 2	Summer 1	Summer 2
Internet Research and	Using and applying	Excel	Using and applying
Communication	Can they present information using	Can they recognise terms – e.g. cell,	Can they combine text and images
Do they understand the need for	a range of software?	row, column?	and show awareness of audience?
caution when using an internet	Desktop Publishing	Can they fill in a data collection sheet?	Can they present information
search for images? Can they	Can they combine text and images	Can they understand what a spread	using a range of software?
recognise an email address and	and show awareness of audience?	sheet is and the benefits of using one?	Can they record using video, and
different ways to send a message?	Can they insert media into a		amend what they have recorded?
Can they find relevant information	presentation? Do they know how		
by browsing?	to manipulate text, underline text,		
Can they use a search engine to find	centre text, change font and size		
a specific website?	and save text to a folder?		



Year 3/4 - Greater Depth

Can they recognise the impact of keyword choice on search engine results? (e.g. results ranked according to relevance or reliability of content and credibility of sources)

Can they evaluate content (created/researched) against a given goal?

Can they can give reasons for errors in programs and explain how they have corrected these through decomposition and debugging?

Deeper Learning

Blooms Taxonomy Questions (See Appendix C)

• Using the pyramid choose one of the words to form a deeper learning question for the children. These will vary all depending on the child, lesson outcomes and the skills taught within the lesson but as a starting point use the question words and question stems to support with this.

Other Ideas

Here are a few ideas to support with creating questions or next steps to develop the children's deeper thinking of computing.

- Odd one out
- Sometimes, always, never
- True or False
- Convince me (Convince me that I need to be safe on the internet)
- Prove it- Prove that algorithms need to be put in the correct order.
- What's the same/difference?
- Statements- Josie thinks all technology needs the internet to work. Do you agree/disagree? Why? Give examples.

Further Information

See Appendix A for long term plan for each combined year groups.

See Appendix B for Assembly plan overview

See Appendix C for definitions for Computational Thinking Skills



	Computing Skills Map								
	KS2 – Upper School Computational Thinking Skills								
	• • • •								
Tinkering	Creating	Collabor	ation Persevering	00 0	Logic	Pattern	Abstraction	Algorithms and D	Decomposition
				Year 5/6	– Comp	uting			
		<u>Cycl</u>			-			<u>cle 2</u>	
Can they recog			f ICT in the real wor	d? Can they use	Can	they recognise ti		of ICT in the real world	d? Can they use
		across subj	ects? (All Year)					ojects? (All Year)	
	utumn 1		<u>Autur</u>			<u>Autumn 1</u>		Autum	
	osoft Recap		Online			<u>Microsoft Re</u>		<u>Online Sa</u>	
Can they add, a			Can they independ			hey add, amend a		Do they know that co	-
different forms		ion in	regard for e-safety	•		ent forms of info	rmation in	is extremely difficult	
different ways?	•		appropriate comm		differ	ent ways?		Can they decide whic	
-	<u>Word</u>		to solve problems	, ,	Word			appropriate to copy and paste from	
Can they confide	•		and communicating with others			Can they confidently choose the		at least two web pages?	
correct page set		when	within and beyond			ct page set up op	tion when	Do they understand that some	
creating a docur			Do they understan	•	creating a document?			material on the inter	
	werPoint		not publish other p			PowerPoint		copyrighted and may	not be copied
Can they use a r	range of pre	sentation	or tag them on the internet without			Can they use a range of		or downloaded?	
applications?			permission?			presentation applications?		Do they recognise the	
Can they add sp			Do they know that content put			Can they add special effects to		of using internet communication	
the appearance	e of a graphic	c?	online is extremely difficult to		alter	the appearance o	of a graphic?	tools and understand how to	
	Excel		remove?			<u>Excel</u>		minimise those risks (including scams	
Can they unders	stand the pu	urpose of	Do they know what consent means			Can they understand the purpose		and phishing)?	
spreadsheets?		when we agree to terms and		of sp	of spreadsheets?		Do they understand that some		
	conditions online?					malicious adults may			
Year 6 may need	•		Do they know the			6 may need some	•	techniques to make o	
-			social media organ			thinking challenges to extend their		personal information	•
learning as thes		repeated	our personal inform	nation		learning as these skills are repeated		, , , , ,	
in Cycle 1 and 2.					in Cyc	cle 1 and 2.		cyber criminals? Can	
								common features and	d themes of
								phishing?	



Spring 1	Spring 2	Spring 1	Spring 2
Excel	Programming- Algorithms and	Kodu	Programming- Algorithms and
Can they understand the purpose of	debugging	Can they adapt and modify	debugging
spreadsheets?	Can they adapt and modify	programs and add refinements?	Can they adapt and modify programs
Can they enter data and formulae	programs and add refinements?	Can they make predictions about	and add refinements?
into a spreadsheet?	Can they explain how an algorithm	what might happen in a game	Can they explain how an algorithm
Can write a simple formula in a	works?	program?	works?
spreadsheet?	Can they detect errors in a program	Can design, write and debug their	Can they detect errors in a program
Can they change data in a	and correct them?	own programme?	and correct them?
spreadsheet to answer 'what if?'	Can they explain 'what if'	Can in detail explain what happens	Can they understand the importance
questions and check predictions	scenarios?	in their programme?	of successful sequence, code and
	Can they explore 'what if' questions	Can I design and code in Kudo?	algorithms?
	by planning different scenarios for		Can they write a program that uses
	controlled devices?		the repeat command? Can they
	Can they write a program using		explain what the repeats in the
	selection?		program do?
Summer 1	Summer 2	Summer 1	Summer 2
Understanding the internet	Programming- Developing games	3D Modelling	Using and applying
Can they conduct a safe internet	Can they make predictions about	Can they create and use a 3D	Can they work on simple film editing?
search and refine it for both speed	what might happen in a game	modelling application?	Can they create a sophisticated
and accuracy?	program?	Can they plan, create and evaluate	multimedia presentation?
Know how to distinguish between	Can they plan a solution to a	their content?	Can they add, amend and combine
good and bad information found on	problem using decomposition?	Can they create a 3D shape? Can	different forms of information in
the internet.		they add detail?	different ways?
Can they rank information found on		Can they create a complex 3D	Can they add special effects to alter
the internet in order of importance		design?	the appearance of a graphic?
and relevance? Can they			
understand that poor input equals			
unreliable results? Can they explain			
how the internet provides access to			
the WWW?			



Year 5/6 - Greater Depth
Can they recognise the impact of keyword choice on search engine results? (e.g. results ranked according to relevance or reliability of content and
credibility of sources)
Can they evaluate content (created/researched) against a given goal?
Can they can give reasons for errors in programs and explain how they have corrected these through decomposition and debugging?
Can they compare the information provided on two tabbed websites looking for bias and perspective? (e.g. evaluating the source of content, reliability
and credibility of content, sharing information on secure and encrypted websites)
Can they apply a range of logical and computational thinking to a program and simulate this using an appropriate application?
Deeper Learning
Blooms Taxonomy Questions (See Appendix C)
• Using the pyramid choose one of the words to form a deeper learning question for the children. These will vary all depending on the child, lesson outcomes and the skills taught within the lesson but as a starting point use the question words and question stems to support with this.
Other Ideas
Here are a few ideas to support with creating questions or next steps to develop the children's deeper thinking of computing.
Odd one out
Sometimes, always, never
• True or False
 Convince me (Convince me that I need to be safe on the internet)
• Prove it- Prove that algorithms need to be put in the correct order.
What's the same/difference?
• Statements- Josie thinks all technology needs the internet to work. Do you agree/disagree? Why? Give examples.
Further Information
See Appendix A for long term plan for each combined year groups.
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Computing Skills Map Whole School E – Safety Assemblies						
Knowledge and Understanding	Skills					
 Do they understand the need for rules to keep them safe when exchanging learning and ideas online? Can they recognise that information on the internet may not be accurate or reliable and may be used for bias, manipulation or persuasion? Do they understand that the internet contains fact, fiction and opinion and begin to distinguish between them? Do they understand the need for caution when using an internet search for images and what to do if they find an unsuitable image? Do they understand that copyright exists on most digital images, video and recorded music? Do they understand the need to keep personal information and passwords private? Do they understand that if they make personal information available online it may be seen and used by others? Do they know how to respond if asked for personal information or feel unsafe about content of a message? Can they recognise that cyber bullying is unacceptable and will be sanctioned in line with the school's policy? Do they know how to report an incident of cyber bullying? 	 Do they follow the school's safer internet rules? Can they begin to identify when emails should not be opened and when an attachment may not be safe? 					



COMPUTING VOCABULARY MAP								
EYFS	KEY STAGE ONE	LOWER KEY STAGE TWO	UPPER KEY STAGE TWO					
 Computer IPad Laptop Touch screen Program Technology Website Internet 	 Save Print Edit Search Icon Font Text Coding Algorithm Application Software Debug Keyboard E-safety Copy Paste Toolbar Tinkering 	 Digital footprint Format World Wide Web (WWW) Search engine Browser Spam Social media Email Attachment Network Insert Text box Spell check Cursor Search engine Programming Sequence Stop-Frame Animation 	 Selection, Manipulate, Plagiarism Formula Input Output Spreadsheet Variable Digital citizen, Hyperlink Computer network Align Decomposition Abstraction Repetition Phishing Component 					



Computing Long Term Plan Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cycle 1						
Years 1 & 2	Computer skills Word Processing Skills	Online Safety	Programming- Algorithms	Programming- designing and debugging	Computer Art	Using and applying skills
Years 3 & 4	Computer skills Microsoft Word	Programming- Sequence and Abstraction	Online Safety and Being Cyber Smart	Programming- designing and debugging	Internet Research and Communication	Using and Applying Skills Desktop Publishing
Years 5 & 6	Microsoft Application Recap	Online safety	Excel	Programming- Algorithms and debugging	Understanding the Internet	Programming- Developing Games
Cycle 2						
Years 1 & 2	Computer skills Microsoft PowerPoint	Online Safety	Programming- Algorithms	Programming- designing and debugging	Computer Art	Internet and PowerPoint
Years 3 & 4	Computer skills Microsoft PowerPoint	Computer Animation	Online Safety	Programming- algorithms designing and debugging	Excel	Using and Applying Skills
Years 5 & 6	Microsoft Application Recap	Online Safety	Kodu	Programming- Algorithms and debugging	3D Modelling	Using & Applying Skills