



St Nicholas Church of England First School

Progression of Disciplinary Knowledge

Computing

The What and The Why

What does this progression document outline?

This progression document outlines the disciplinary knowledge we aim for our children to acquire and apply; it outlines **what we expect children to do to gain new knowledge, and what they do with that new knowledge**. On the other hand, essential substantive knowledge related to this subject are mapped out on a separate document to outline what we need and aim for our children to know and remember.

What is the rationale behind our building block approach for disciplinary knowledge?

- We recognise and appreciate that our children will progress at different rates and therefore it is important to be open-minded and flexible with how their disciplinary knowledge is developed, as opposed to being prescriptive; this is why our disciplinary knowledge has been organised across the school by Key Stage; it is equal in ambition, accessibility, and appreciation of children's development.
- We have set out our disciplinary knowledge into progressive building blocks (that build on and feed into one another) with clearly set expectations that these will lead to by the end of each key stage.
- Plans for units of learning set out the focused building blocks of disciplinary knowledge that children will aim to develop; our building block approach means that prior building blocks of disciplinary knowledge are activated and applied over time for greater depth and breadth.

St Nicholas CE First School
Key Stage 1 Progression in Computing

	The Emerging KS1 Digital Ambassador	The KS1 Digital Ambassador Building Blocks		By the End of KS1
Computer Science				
Problem solving	Understand that goals can be achieved by following a sequence of steps.	Understand algorithms as sequences of instructions in everyday contexts.	Appreciate the need for precise and unambiguous instructions in algorithms.	Appreciate that some algorithms are more efficient than others.
	Program using individual instructions according to a plan.	Program using sequences of instructions to implement an algorithm.	Appreciate that programming a digital device involves commands in a formal language.	Understand how same algorithm can be implemented in multiple programming languages.
Programming	Give instructions, one at a time for a program.	Give a sequence of instructions for a program.	Correct mistakes in a sequence of instructions.	Create more complex programs, correcting any errors.
Logical thinking	Make predictions about what a program will do.	Give explanations for what they think a program will do.	Give logical explanations of what a program will do and why it might do it.	Take a program and reverse engineer at least some of the steps or rules that were present in the underlying algorithm.
Information Technology				
Creating Content	Store content on digital devices.	Use digital technology to store and retrieve content.	Use digital technology to organise, store and retrieve content	Store, organise and retrieve content on digital devices for a given purpose.
	Create content on a digital device.	Create original content using digital technology.	Create and edit original content using digital technology.	Create and edit original content for a given purpose, paying attention to the intended audience.
Digital Literacy				
Online Safety	Acknowledge the need to stay safe when using technology.	Keep safe while using digital technology.	Keep safe and show respect to others while using digital technology.	Stay safe and act respectfully and responsibly when using digital technology.
	Understand that some information should be kept private.	Understand that information on the internet can be seen by others.	Identify what information about myself should be kept private.	Explain broader risks and issues around online privacy.
	Understand what to do if they see disturbing content online at school	Understand what to do if they see disturbing content online at home or at school.	Understand what to do if they have concerns about content or contact online.	Identify strategies for dealing with concerns over content or contact online.
Technology Beyond School	Name some uses of IT beyond school.	Show an awareness of how IT is used for communication beyond school.	Show an awareness of how IT is used for a range of purposes beyond school.	Explain why IT is important when used for different purposes.

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Lower Key Stage 2 Progression in Computing

	The Emerging LKS2 Digital Ambassador	The LKS2 Digital Ambassador Building Blocks	By the End of Lower Key Stage 2
Computer Science			
Problem solving	Design and implement parts of a program using a block language, which can run automatically.	Design and write a program using a block language, without user interaction.	Design, write and debug a program using a block language, without user interaction.
	Understand that physical systems can be simulated on screen.	Explore simulations of physical systems on screen.	Develop their own simulations of a simple physical system on screen.
	Identify parts of a project.	Identify different ways to tackle a project.	Plan a project involving multiples steps and resources.
Programming	Understand that programs include sequences of instructions.	Use sequence in programs.	Use sequence and repetition in programs.
	Understand that computers accept input and produce output.	Write a program to produce output on screen.	Write a program to produce output on screen and through speakers/headphones.
Logical thinking	Predict what an algorithm will do.	Explain a simple, sequence-based algorithm.	Explain an algorithm using sequence and repetition.
	Spot errors in programs.	Use logical reasoning to detect errors in programs.	Use logical reasoning to detect and correct errors in programs.
Communication	Identify ways that the Internet can be used to provide different methods of communication.	Understand that email and video conferencing are made possible through the Internet.	Understand that the internet can provide a number of services in addition to the web.
Information Technology			
Creating Content	Use some simple programs on a computer.	Consider what programs are most appropriate for a given task.	Use and combine a range of programs on a computer.
	Create content on a computer.	Design and create content on a computer.	Design and create content on a computer in response to a given goal.
	Use technology to collect information.	Use technology to collect and present information.	Use technology to collect, evaluate and present information.
Searching	Search for information on a web page.	Search for information within a single site.	Use a standard search engine to find information.
	Understand that search engines make it easier to find content online.	Understand that search engines select pages according to keywords found in the content.	Understand that search engines rank pages according to relevance.
Digital Literacy			

Online Safety	Use digital technology safely.	Use digital technology safely and show respect for others when working online.	Demonstrate that I can act responsibly when using computers.	Appreciate the importance of using encryption to keep information private and the need for strong passwords to protect identity.
	Give examples of things that I should or should not do when using digital technology.	Recognise unacceptable behaviour when using digital technology.	Understand the difference between acceptable and unacceptable behaviour when using digital technology.	Discuss the consequences of particular behaviours when using digital technology.
	Know who to talk to about inappropriate digital behaviour in school.	Know who to talk to about concerns and inappropriate behaviour in school.	Know who to talk to about concerns and inappropriate behaviour at home or in school.	Know how to report concerns and inappropriate behaviour in a range of contexts.
	Make choices about which web page they consider most useful.	Decide whether a web page is relevant for a given purpose or question.	Decide whether digital content is relevant for a given purpose or question.	Decide whether digital content is reliable and unbiased.

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