



Offwell C of E Primary School Computing Curriculum Progression Map

EYFS – KS1 – KS2



Area	EYFS – pre-requisite skills			Key Stage 1 NC attainment targets	Key Stage 2 NC attainment targets
	3-4 Year olds	Reception	ELG		
Computer Science (CS)	Remember rules without needing an adult to remind them. (PSED) Match their developing physical skills to tasks and activities in the setting. (PD) Explore how things work. (UW)	Show resilience and perseverance in the face of a challenge. (PSED) Know and talk about the different factors that support their overall health and wellbeing: sensible amounts of 'screen time'. (PSED) Develop their small motor skills so that they can use a range of tools competently, safely and confidently. (PD)	Explain the reasons for rules, know right from wrong and try to behave accordingly. (PSED) (Managing Self) Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. (PSED) (Managing Self) Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. (EA&D) (Creating with materials)	1. Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions 2. Create and debug simple programs 3. Use logical reasoning to predict the behaviour of simple programs	4. Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts 5. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output 6. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 7. Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web 8. Appreciate how [search] results are selected and ranked
Information Technology (IT)				1. Use technology purposefully to create, organise, store, manipulate and retrieve digital content	2. Use search technologies effectively 3. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
Digital Literacy (DL)				1. Recognise common uses of information technology beyond school 2. 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	3. Understand the opportunities [networks] offer for communication and collaboration 4. Be discerning in evaluating digital content 5. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact



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EYFS (not Explicitly part of EYFS curriculum. See above for pre-requisite skills) – KS1 – KS2

Concept/ Strand	Sub-strand	Key Stage 1		Lower Key Stage 2		Upper Key Stage 2	
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Science	Algorithms, problem solving and programming	Describe algorithms as sequences of instructions in everyday contexts.	Describe algorithms as sequences of instructions or sets of rules in everyday contexts; understand the importance of order and accuracy of these.	Design and write a program using a block language (programs to include movement, dialogue, sound effects, stages, sprites, loops and variables) without user interactions.	Design and write a program using a block language to a given brief, including simple interaction (programs to include variables, stages, artificial intelligence and a scoring system).	Design, write and debug a program using a block language based on their own ideas (programs to include multiple sprites, multiple variables, sensors and conditional statements).	Design, write and debug a program using a second programming language based on their own ideas (using loops, sprites that move in a variety of ways, allowing them to disappear and appear randomly, manipulate variables and use operators that determine an outcome of a conditional statement).
		Plan a sequence of steps to solve real- life problems.	Program on screen using sequences of instructions to implement an algorithm.	Use sequence in programs.	Use sequence and repetition in programs.	Use sequence, selection and repetition in programs.	Use sequence, selection, repetition and variables in programs.
		Program floor robots using sequences of instructions (using directional language) to implement an algorithm.	Create programs as sequences of instructions when programming on screen, correcting any errors.	Write a program to produce output on screen.	Write a program that accepts keyboard input and produces on-screen output.	Write a program that accepts keyboard and mouse input and produces output on screen and through speakers.	Write a program that accepts inputs other than keyboard and mouse and produces outputs other than screen or speakers.
		Create programs for floor robots and sprites on the screen using a number of steps in order before pressing the Go button.	Begin to experiment with variables.	Explain how loops and random numbers are used in a program.	Develop their own simulation of a simple physical system on screen.	Develop their own simple computer control application.	Design, write and debug their own computer control application.
		Begin to use conditional language like “if” and “when.”		Explain how conditional statements are used in a program.		Plan a solution to a problem using decomposition.	Solve problems using decomposition, tackling each part separately.
				Understand what it means to decompose an algorithm and decompose a program into smaller parts.			Understand that coding is the use of programming languages to make games, programs and computers things.
							Write and adapt programmes using Javascript and Python (print command, run button, input command, random command).

	Logical Reasoning	Explain what they think a program will do.	Give logical explanations of what a program will do under given circumstances, including some attempt at explaining why it does what it does.	Use logical reasoning to predict outcomes and detect errors in programs.	Use logical reasoning to detect and correct errors in programs.	Explain a rule-based algorithm in their own words.	Give clear and precise logical explanations of a number of algorithms.
				Use and explain a simple, sequence- based algorithm in their own words.	Explain an algorithm using sequence and repetition in their own words.	Use logical reasoning to detect errors in algorithms.	Use logical reasoning to detect and correct errors in algorithms (and programs).
	Networks and Search Engines		Explain and understand how an email is sent.	Understand that email and videoconferencing are made possible through the internet.	Use and explain how search engines work.	Explain how search engines are ranked.	Understand how mobile phone or other networks operate
					Explain how the internet makes the web possible.	Understand how data routing works on the internet.	Understand how domain names are converted into IP addresses on the internet.
					Understand that search engines rank pages according to relevance.	Explain how web pages are created and transmitted in their own words.	Appreciate that search engines rank pages based on the number and quality of in-bound links
Information Technology	Digital Productivity Creating content	Use digital technology to store and retrieve content.	Store, organise and retrieve content on digital devices for a given purpose.	Use a range of programs on a computer.	Use and combine a range of programs on a computer.	Use and combine a range of programs on multiple devices.	Select, use and combine a range of programs on multiple devices.
		Identify different kinds of content.	Create and edit original content for a given purpose using digital technology.	Design and create content on a computer.	Design and create content on a computer in response to a given goal.	Design and create programs on a computer in response to a given goal.	Design and create systems in response to a given goal.
		Create original content using digital technology.	Present findings using software and interpret the data.	Collect and present information.	Collect, analyse and present data.	Analyse and evaluate information.	Analyse and evaluate data using their chosen software and graphs.
		Use a mouse to navigate around the computer screen.	Input data accurately and present this information in graphical format.				
	Searching			Search for information within a single site.	Use a standard search engine to find information using a range of strategies to be more successful in finding reliable information.	Use filters to make more effective use of a standard search engine. Understand that search engines use a cached copy of the crawled web to select and rank results.	Make use of a range of search engines appropriate to finding information that is required.
				Describe how search engines select pages according to keywords found in the content.			

Digital Literacy	Digital Citizenship & Technology / Digital Creativity	Identify what personal information is.	Explain what personal information is and develop awareness of why it is special and should not be shared.	Identify who they can trust and share their personal information with online.	Demonstrate that they can act responsibly when using computers.	Demonstrate that they can act responsibly when using the internet.	Show that they can think through the consequences of their actions when using digital technology.
		Identify what to do if they see disturbing content online at home or at school.	Explain what to do if they have concerns about content or contact online.	Use digital technology safely and show respect for others when working online.	Identify and explain the differences between acceptable and unacceptable behaviours when using digital technology.	Discuss the consequences of particular behaviours when using digital technology.	Identify principles underpinning acceptable use of digital technologies.
		Identify ways to keep themselves safe while using digital technology.	Keep safe and show respect to others while using digital technology.	Identify how to report 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.	Know a range of ways to report concerns and inappropriate behaviour in a variety of contexts.
		Understand that information on the internet can be seen by others.	Identify ways they can use the Internet to communicate with family and friends.	Recognise unacceptable behaviour when using digital technology.	Decide whether digital content is relevant for a given purpose or question.	Decide whether digital content is reliable and unbiased.	Articulate an opinion about the effectiveness of digital content.
		Describe some of the risks that occur on the internet.	Show an awareness of how IT is used for a range of purposes beyond school.	Decide whether a web page is relevant for a given purpose or question. Use email and videoconferencing in class appropriately.	Collaboratively communicate with peers on a shared wiki appropriately. Begin to use a range of online communication tools, such as forums, email and polls in order to formulate, develop and exchange ideas.	Work collaboratively with peers on a class website or blog.	Use online tools to plan and carry out a collaborative project successfully.
		Show an awareness of how IT is used for communication beyond school.		Explain and understand online protocols, in order to stay safe on the web.	Describe the meaning of copyright and the importance of acknowledging sources.	Explain what is meant by copyright	
				To identify cyberbullying and its consequences.			
				Identify the risks on online gaming and know how to protect themselves.			

Inclusive Provision for Computing	
SEND	Adaptations to meet the range of Special Educational Needs and Disabilities
Social & Emotional	Ensure high expectations of computing that raise learner's self belief. Build relationships with learners to identify opportunities to connect learning to their personal experience.
Communication & Interaction	Ensure learners are familiar with tier 2 vocabulary through lessons. This will empower them to access a higher level of language with which they can communicate and understand ideas across the curriculum.

Cognition & Learning	Practical activities that encourage them to get hands-on with problems can help them visualise solutions. Teach learners the correct technical terminology within lessons, to ensure that misconceptions are not embedded early into their computing education. Learners should also be shown how to use technology safely, respectfully and responsibly. Learners need to be able to identify unacceptable behaviour and know how to report concerns.
Physical & Sensory	Carefully consider what inclusive practices are appropriate. For example, embedding the use of braille, allowing learners to orient themselves to the classroom space, careful selection of colours within resources, installing a screen reader and magnifier aids. Together these approaches support learners in solving complex challenges. Include examples of learners and professionals with disabilities, the representation of a diverse range of figures in computing can send a powerful message to your learners.
EDI	Adaptations to promote equality and reflect diversity
Age	Consideration around 'your trusted adult' who makes you feel safe and who you could talk to. Learn about PEGI and age ratings for online games/apps 3,7,12,16,18. App permission and consent. How online identity can be copied, modified and altered. Age, appearance, gender.
Disability, race and gender, sexual orientation.	Discuss 'communicate' – to pass information to others by speaking, writing, moving your body or other signals (sign language). Positive and negative comments linked to appearance in online imagery. Negative comments about someone's race, gender, disability or sexuality. Sharing of imagery that is considered discrimination. Considerations towards stereotypes made online around some of the protected characteristics. This could include stereotypes around jobs in computing and comments made online.
Religion or belief.	When managing online information, learn about what is fact, opinion or belief online.
Protected characteristics that fall under 'personal data'.	Privacy and security of personal data stored online or in other computer systems.