ICT Performance Descriptors

	Computing	Information Technology	Digital Literacy
Year 9 41 40 39 (38)	• Understands a recursive solution to a problem repeatedly applies the same solution to smaller instances of the problem. • Recognises that some problems share the same characteristics and use the same algorithm to solve both (generalisation). • Understands the notion of performance for algorithms and appreciates that some algorithms have different performance characteristics for the same task. • Uses nested selection statements. • Appreciates the need for, and writes, custom functions including use of parameters. • Knows the difference between, and uses appropriately, procedures and functions. • Understands and uses negation with operators. • Uses and manipulates one dimensional data structures. • Detects and corrects syntactical errors. • Understands how numbers, images, sounds and character sets use the same bit patterns. • Performs simple operations using bit patterns e.g. binary addition. • Understands the relationship between resolution and colour depth, including the effect on file size. • Distinguishes between data used in a simple program (a variable) and the storage structure for that data. • Understands the von Neumann architecture in relation to the fetch-execute cycle, including how data is stored in memory. • Understands the basic function and operation of location addressable memory.	• Knows the names of hardware e.g. hubs, routers, switches, and the names of protocols e.g. SMTP, iMAP, POP, FTP, TCP/IP, associated with networking computer systems. • Justifies the choice of and independently combines and uses multiple digital devices, internet services and application software to achieve given goals. • Evaluates the trustworthiness of digital content and considers the usability of visual design features when designing and creating digital artifacts for a known audience. • Designs criteria for users to evaluate the quality of solutions, uses the feedback from the users to identify improvements and can make appropriate refinements to the solution.	• Uses technologies and online services securely, and knows how to identify and report inappropriate conduct. • Identifies and explains how the use of technology can impact on society.

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	Computing	Information Technology	Digital Literacy
Year 8 38 37 36 (35)	• Understands that iteration is the repetition of a process such as a loop. Can use different type of loop with increasing skill. • Recognises that different algorithms exist for the same problem. • Understands that programming bridges the gap between algorithmic solutions and computers. • Uses a range of operators and expressions e.g. Boolean, and applies them in the context of program control. • Knows that digital computers use binary to represent all data. • Understands how to construct static web pages using HTML using a text editor and using specialist software. Knows the advantage and disadvantage of each solution.	• Evaluates the trustworthiness of digital content and considers the usability of visual design features when designing and creating digital artefacts for a known audience. • Uses tools in a rule based system to achieve desired goals. • Designs criteria for users to evaluate the quality of solutions, uses the feedback from the users to identify improvements and can make appropriate refinements to the solution.	• Recognises ethical issues surrounding the application of information technology beyond school. • Uses technologies and online services securely, and knows how to identify and report inappropriate conduct. • Identifies and explains how the use of technology can impact on society.
Year 7 35 34 33 (32)	• Shows an awareness of tasks best completed by humans or computers. • Implement solutions by decomposing a problem and creates a sub-solution for each of these parts. • Recognises that different solutions exist for the same problem. • Use different types of loops appropriately. • Designs, writes and debugs modular programs. • Understands why and when computers are used and the main functions of the operating system. • Recognises and understands the function of the main internal parts of basic computer architecture. • Understands the Von Neumann architecture in relation to the fetch- execute cycle, including how data is stored in memory. • Understands how bit patterns represent numbers and images. • Knows that computers transfer data in binary. • Performs simple operations using bit patterns e.g. binary addition.	• Analyses and evaluates data and information, and recognises that poor quality data leads to unreliable results, and inaccurate conclusions. • Recognises the audience when designing and creating digital content. • Uses criteria to evaluate the quality of solutions, can identify improvements making some refinements to the solution, and future solutions.	• Makes judgements about digital content when evaluating and repurposing it for a given audience. • Demonstrates responsible use of technologies and online services, and knows a range of ways to report concerns. • Recognises ethical issues surrounding the application of information technology beyond school.

ICT Performance Descriptors

	Computing	Information Technology	Digital Literacy
Year 6 32 31 30 (29)	• Designs solutions that use sequences, repetition and decisions • Uses diagrams to express algorithmic solutions. • Uses logical reasoning to design inputs and predict outputs. • Creates programs that implement algorithms to achieve given goals. • Check programs for errors and correct them when necessary	• Understands the difference between data and information. • Uses filters or can perform single criteria searches for information. • Collects, organises and presents data and information in digital content. • Makes appropriate improvements to solutions based on feedback received, and can comment on the success of the solution	• Makes judgements about digital content when evaluating and repurposing it for a given audience. • Demonstrates responsible use of technologies and online services, and knows a range of ways to report concerns. • Understands the potential of information technology for collaboration when computers are networked
Year 5 29 28 27 (26)	• Understands that algorithms are implemented on digital devices as programs. • Uses simple algorithms and programs using loops, and selection i.e. 'if' statements. • Uses logical reasoning to predict outcomes. • Detects and corrects errors in programs and algorithms.	• Recognises that a range of digital devices can be considered a computer, and recognise a range of input and output devices. • Can execute menu selections and tool choices in a logical order to achieve a goal. • Uses technology with increasing independence to purposefully organise digital content. • Shares their experiences of technology in school and beyond the classroom.	• Demonstrates use of computers safely and responsibly, knowing a range of ways to report unacceptable content and contact when online. • Shows an awareness for the quality of digital content collected. • Recognises what is acceptable and unacceptable behaviour when using technologies and online services.
Year 4 26 25 24 (23)	• Understands what an algorithm is and is able to express simple linear (non-branching) algorithms symbolically. • Understands that computers have no intelligence, that all information is created by the user and that they need precise instructions. • Knows that users can develop their own programs, and can demonstrate this by creating a simple program in an environment that does not rely on text e.g. programmable robots etc. • Executes, checks and changes programs.	• Recognises that digital content can be represented in many forms. • Distinguishes between some of these forms and can explain the different ways that they communicate information. • Obtains content from the world wide web using a web browser. • Uses software under the control of the teacher to create, store and edit digital content using appropriate file and folder names. • Understands that people interact with computers. • Talks about their work and makes changes to improve it.	• Understands the importance of communicating safely and respectfully online, and the need for keeping personal information private. Knows what to do when concerned about content or being contacted. (AL) • Knows common uses of information technology beyond the classroom. • Shares their use of technology in school.