Computing Performance Descriptors

	Computer Science - foundations	IT - applications	Digital Literacy - implications
Year 9 45 44 43 42 41 40 39	Design computational abstractions Model behaviour of physical systems Understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching] Use two or more programming languages (at least one of which is textual) to solve a variety computational problems Use logical reasoning to compare the utility of alternative algorithms for the same problem Develop modular programs that use procedures or functions Understand uses of Boolean logic in circuits Understand how computer systems components communicate with one another Understand how computer systems communicate with other systems Understand how instructions are executed by computer systems Understand how sounds can be manipulated digitally in the form of binary digits	Combine multiple applications to achieve challenging goals (NB. This needs to involve selecting, using and combining multiple applications across a range of devices) Create digital artefacts for a given audience Repurpose digital artefacts for a given audience Attend to design of digital artefacts Select multiple applications to achieve challenging goals	Understand a range of ways to use technology securely Understand a range of ways to use technology responsibly
Year 8 38 37 36 (35)	Evaluate computational abstractions Model state of physical systems Model the behaviour of real-world problems Understand several key algorithms that reflect computational thinking Use at least one additional programming language (that must be textual) to solve computational problems Make use of appropriate data structures Design modular programs that use procedures or functions Understand uses of Boolean logic in programming (e.g. AND, OR, and NOT) Be able to carry out simple operations on binary numbers Understand the hardware and the software components that make up computer systems Understand how instructions are stored by computer systems Understand how text can be manipulated digitally in the form of binary digits Understand how sounds can be represented digitally in the form of binary digits Understand how pictures can be manipulated digitally in the form of binary digits	Combine multiple applications to achieve challenging goals (NB. This needs to involve selecting, using and combining multiple applications) Analyse data Revise digital artefacts for a given audience Meet the needs of known users	Attend to trustworthiness of digital artefacts Protect online identity Protect privacy
Year 7 35 34 33 (32)	Use computational abstractions Model the state of real-world problems Use a programming language to solve computational problems Understand simple Boolean logic Understand how numbers can be represented in binary Understand the hardware components that make up computer systems Understand how text can be represented digitally in the form of binary digits Understand how pictures can be represented digitally in the form of binary digits	Undertake creative projects with challenging goals Use multiple applications [Work with] applications across a range of devices Collect data Reuse digital artefacts for a given audience	Understand a range of ways to use technology respectfully Recognise inappropriate content Recognise inappropriate contact Recognise inappropriate conduct Know how to report concerns Attend to usability of digital artefacts Understand a range of ways to use technology safely

	Computer Science - foundations	IT - applications	Digital Literacy - implications
Year 6 32 31 30 (29)	Design, write and debug programs that accomplish specific goals 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 Use logical reasoning to detect and correct errors in algorithms and programs Understand computer networks including the internet Appreciate how search results are selected and ranked	Combine a variety of software to accomplish given goals Select, use and combine software on a range of digital devices Analyse data Evaluate data Design and create systems	Understand the opportunities computer networks offer for collaboration Be discerning in evaluating digital content
Year 5 29 28 27 26	Design and write programs that accomplish specific goals Debug programs that accomplish specific goals Use repetition in programs Control or simulate physical systems Use logical reasoning to detect and correct errors in programs Understand how computer networks can provide multiple services, such as the world wide web Appreciate how search results are selected	Select a variety of software to accomplish given goals Select, use and combine internet services Analyse information Evaluate information Collect data Present data	Understand the opportunities computer networks (inc. the internet) offer for communication Identify a range of ways to report concerns about content Recognize acceptable / unacceptable behaviour
Year 4 25 24 23 22	Write programs that accomplish specific goals Use sequence in programs Work with various forms of input Work with various forms of output	Use search technologies effectively Use a variety of software to accomplish given goals Collect information Design and create content Present information	Use technology responsibly Identify a range of ways to report concerns about contact
Year 3	Understand that algorithms are implemented as programs on digital devices Understand that programs execute by following precise and unambiguous instructions Debug simple programs Use logical reasoning to predict the behaviour of simple programs	Use technology purposefully to organise digital content Use technology purposefully to manipulate digital content	**Use technology respectfully** Identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies
Year 2	Understand what algorithms are Create simple programs	Use technology purposefully to create digital content Use technology purposefully to store digital content Use technology purposefully to retrieve digital content	**Use technology safely** Keep personal information private Recognise common uses of information technology beyond school