


Computing Overview 2022-2024.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Computational thinking	Date	Hardware/Software	Networks	Issues/Impact	6.1 Develop code
Year 10	Topic 1: Computational thinking – understanding of what algorithms are, what they are used for and how they work; ability to follow, amend and write algorithms; ability to construct truth tables.	Topic 2: Data – understanding of binary, data representation, data storage and compression.	Topic 3: Computers – understanding of hardware and software components of computer systems and characteristics of programming languages.	Topic 4: Networks – understanding of computer networks and network security.	Topic 5: Issues and impact – awareness of emerging trends in computing technologies, and the impact of computing on individuals, society and the environment, including ethical, legal and ownership issues.	6.1.1 be able to use decomposition and abstraction to analyse, understand and solve problems 6.1.2 be able to read, write, analyse and refine programs written in a high-level programming language 6.1.3 be able to convert algorithms (flowcharts, pseudocode*) into programs 6.1.4 be able to use techniques (layout, indentation, comments, meaningful identifiers, white space) to make programs easier to read, understand and maintain 6.1.5 be able to identify, locate and correct program errors (logic, syntax, runtime) 6.1.6 be able to use logical reasoning and test data to evaluate a program's fitness

						for purpose and efficiency (number of compares, number of passes through a loop, use of memory)
Assessment	EOU tests MCQ's	EOU tests MCQ's	EOU tests MCQ's	EOU tests MCQ's	EOU tests MCQ's	EOU tests MCQ's
	6.2 Constructs	6.3 Data types and structures	6.4 Input/output	6.5 Operators	6.6 Subprograms	
Year 11	<p>6.2.1 understand the function of and be able to identify the structural components of programs (constants, variables, initialisation and assignment statements, command sequences, selection, repetition, iteration, data structures, subprograms, parameters, input/output)</p> <p>6.2.2 be able to write programs that make appropriate use of sequencing, selection, repetition (count-controlled, condition-controlled), iteration (over every item in a data structure) and single entry/exit points from code blocks and subprograms</p>	<p>6.3.1 be able to write programs that make appropriate use of primitive data types (integer, real, Boolean, char) and one- and two-dimensional structured data types (string, array, record)</p> <p>6.3.2 be able to write programs that make appropriate use of variables and constants</p> <p>6.3.3 be able to write programs that manipulate strings (length, position, substrings, case conversion)</p>	<p>6.4.1 be able to write programs that accept and respond appropriately to user input</p> <p>6.4.2 be able to write programs that read from and write to comma separated value text files</p> <p>6.4.3 understand the need for and be able to write programs that implement validation (length check, presence check, range check, pattern check)</p> <p>6.4.4 understand the need for and be able to write programs that implement authentication (ID and password, lookup)</p>	<p>6.5.1 be able to write programs that use arithmetic operators (addition, subtraction, division, multiplication, modulus, integer division, exponentiation)</p> <p>6.5.2 be able to write programs that use relational operators (equal to, less than, greater than, not equal to, less than or equal to, greater than or equal to)</p> <p>6.5.3 be able to write programs that use logical operators (AND, OR, NOT)</p>	<p>6.6.1 be able to write programs that use pre-existing (built-in, library) and user-devised subprograms (procedures, functions)</p> <p>6.6.2 be able to write functions that may or may not take parameters but must return values, and procedures that may or may not take parameters but do not return values</p> <p>6.6.3 understand the difference between and be able to write programs that make appropriate use of global and local variables</p>	

Assessment	Exam Board Guidance	Exam Board Guidance	EOU tests MCQ's – Program notes	EOU tests MCQ's – Program notes	EOU tests MCQ's	
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FRED LONGWORTH

HIGH SCHOOL

