

Computing department - Year 11 computer science scheme of work

Term	Title	Unit content	Key vocabulary
Autumn Week 1 - 5	Programming fundamentals	2.2.1 – Variables: inputs, outputs, and assignments	Input, Output, Assignment, Pseudocode, Flowchart, Identifier, Variable, CONSTANT, Concatenation, Memory locations, Parameters
		2.2.1 – Variables: operators	Arithmetic, Boolean, String, Concatenate (join), Substring, Delimiter, SPLIT, Left, Mid, Right
		2.2.1 – Program flow: Sequencing	Sequence/algorithm, Instructions, Efficiency, Structured
		2.2.1 – Flow: Selection	IF, ELSE IF, ELSE, SELECT CASE, Boolean, Nested, Selection, Condition, Criteria, True, False
		2.2.1 – Iteration (count- and condition-controlled loops)	While, For, Counter, Condition, Boolean, Iteration, Break, Nested iteration, Exit condition, Stepping, Increment/decrement, Larger/Greater, Greater or Equal, Smaller or Equal
		2.2.2 – String manipulation	String, Concatenate, Substring, Character, Escape character
		2.2.3 – Additional programming techniques	EOF – end of file, EOL – end of line, New Line Character (CR or Carriage Return) or LineFeed, File mode, Commit, Append, Overwrite, Tabulation/Table, Serialise, Deserialise, Delimiter, Schema

		2.2.3 – Data persistence: Records	SELECT, WHERE, LIKE, SQL, Query, Criteria, Record array, VARCHAR, CHAR, TYPE, Record, Field
		2.2.3 – Data persistence: SQL Select	SQL
		2.2.3 – Data structure: Arrays	Index, Elements/items, Dimensions, Concatenate/Join, Split, Iterating, Non-sequential, Zero-based, Empty array, Plural naming, Adding and removing data, Overflow, Removing, NULL, Randomly choosing, Out-of-index error, Bubble Sort, Column, Linear search, 1D and 2D
		2.2.3 – Sub programs practical	BLOCK Coding
		2.2.3 – Sub programs	Parameter, Function, Procedure, Argument, Variable, Program
		2.2.2 – Variables: Data types	Variable, Integer, Real, Boolean, Character and String, Casting, Data types, Character, Sets, ASCII, Unicode
		2.2.3 Random number generation	Random, Integer, Real, Selection, Library
Autumn Week 6 - 10	Producing robust programs	2.3.1 – Defensive design Defensive design considerations	Robust, Misuse, Defensive design, Authentication
		Input validation	Validation, Input, Authentication
		Sub programs	Sub program, Procedure, Function, Maintainability
		Naming conventions/indentation	Maintainability, Convention, Indentation
		Commenting	Comment, Execution, Maintainability
		2.3.2 – Testing	Iterative testing, Final testing
		2.3.2 – Testing	Syntax error, Logic error
		2.3.2 – Testing	Normal, Boundary, Invalid/Erroneous

		Refining algorithms	Refine, Robust
Autumn Week 11 - 15	Boolean logic	2.4.1 Boolean logic	Logic gate, Transistor, Bit (Binary Digit), Logic circuit, AND, OR, NOT (Inverter), $A \wedge B$, $A \vee B$
Assessment point 1			

Term	Title	Unit content	Key vocabulary
Spring Week 1 - 4	Programming languages and integrated development environments	2.5.1 - Languages	Low-level Language, High-level Language, First generation, Second generation, Third generation, Machine Code, Language Translator, Compiler, Interpreter, Device Driver, Debug
		Characteristics of Compilers and Interpreters	Compiler, Interpreter, Source Code, Object Code, Executable, Code, Debug, Translator, IDE
		2.5.2 – The Integrated Development Environment (IDE)	IDE
Spring Week 5 - 8	Consolidation, recap and revision		
Spring Week 9 - 11	Consolidation, recap and revision		
Assessment point 2			

Term	Title	Unit content	Key vocabulary
Summer	Consolidation, recap and revision		

Week 1 - 13	
Assessment point 3	