Year 10 2022-2023 | Year 11 2022-2023

Term 1

Year 10 2022-2023 — Term 1

Week	Comp 01	Comp 02	Comp 03	Recap Recall. In and On/Starters
Week 1		Introduction to Course setting up etc	The use of variables, constants, operators, inputs, outputs, assignments	2.1.1, 2.1.2: Abstraction, Decomposition, Algorithmic thinking, Flowcharts, Pseudocode, Syntax and Logic errors, Trace Tables
Week 2		Algorithms Lesson 1 Computational thinking	The use of variables, constants, operators, inputs, outputs, assignments	2.1.1, 2.1.2: Abstraction, Decomposition, Algorithmic thinking, Flowcharts, Pseudocode, Syntax and Logic errors, Trace Tables
Week 3		Algorithms Lesson 2 Searching algorithms	The use of data types: Integer, Real, Boolean, Character and string, Casting	2.1.1, 2.1.2: Abstraction, Decomposition, Algorithmic thinking, Flowcharts, Pseudocode, Syntax and Logic errors, Trace Tables
Week 4		Algorithms - L3 Sorting algorithms	The use of the three basic programming constructs used to control the flow of a program: Sequence	2.1.1, 2.1.2: Abstraction, Decomposition, Algorithmic thinking, Flowcharts, Pseudocode, Syntax and Logic errors, Trace Tables
Week 5		Algorithms - L4 Developing algorithms using flow diagrams	The use of the three basic programming constructs used to control the flow of a program:Iteration (count- and	2.1.1, 2.1.2: Abstraction, Decomposition, Algorithmic thinking, Flowcharts, Pseudocode, Syntax and Logic errors, Trace Tables
Week 6		Algorithms - L5 Developing algorithms using pseudocode	The use of the three basic programming constructs used to control the flow of a program:Iteration (count- and	2.1.1, 2.1.2: Abstraction, Decomposition, Algorithmic thinking, Flowcharts, Pseudocode, Syntax and Logic errors, Trace Tables
Week 7		Algorithms - L6 Interpret, correct or complete algorithms	The common Boolean operators AND, OR and NOT	2.1.1, 2.1.2: Abstraction, Decomposition, Algorithmic thinking, Flowcharts, Pseudocode, Syntax and Logic errors, Trace Tables

Half Term

Week	Comp 01	Comp 02	Comp 03	Recap Recall. In and On/Starters
Week 8		Summative Tests	The common arithmetic operators	
Week 9		Programming techniques, Computational Logic - Programming Fundamentals	Naming conventions, Indentation, Commenting	
Week 10		Programming techniques, Computational Logic - L2 Sequence and selection	Ability to manipulate strings, including: Concatenation, Slicing	
Week 11		Programming techniques, Computational Logic - L3 Iteration	String Handling/operations: String Length, Substrings, Uppercase, Lowercase, Ascii Conversion (ASC, CHR)	2.1.1, 2.1.2: Abstraction, Decomposition, Algorithmic thinking, Flowcharts, Pseudocode, Syntax and Logic errors, Trace Tables
Week 12		Programming techniques, Computational Logic - L4 Arrays	The use of basic file handling operations: Open, Read, Write, Close	
Week 13		Programming techniques, Computational Logic - L5 Procedures and functions	The use of arrays (or equivalent) when solving problems, including both one-dimensional and two-dimensional arrays	2.1.3: Binary, Linear, Search, Bubble, Merge and Insertion Sort
Week 14		Programming techniques, Computational Logic -- L6 Records and files	Skills Recap	
Week 15		Programming techniques, Computational Logic -- SQL	Skills Recap	2.1.1, 2.1.2: Abstraction, Decomposition, Algorithmic thinking, Flowcharts, Pseudocode, Syntax and Logic errors, Trace Tables
Week 16		Summative Tests	Skills Recap	

Year 11 2022-2023 — Term 1

Week	Comp 01	Comp 02	Comp 03	Recap Recall. In and On/Starters
Week 1	System Software and Security - Network Threats		NEA/Progarmming/Pseudocode Practice	Start of year
Week 2	System Software and Security - Identifying and preventing vulnerabilities		NEA/Progarmming/Pseudocode Practice	2.1.1, 2.1.2: Abstraction, Decomposition, Algorithmic thinking, Flowcharts, Pseudocode, Syntax and Logic errors, Trace Tables
Week 3	System Software and Security -Operating system software		NEA/Progarmming/Pseudocode Practice	2.1.3: Binary, Linear, Search, Bubble, Merge and Insertion Sort
Week 4	System Software and Security - Utility software		NEA/Progarmming/Pseudocode Practice	2.2.1: Variables, Constants, operators, inputs, outputs, and assignments. Programming Constructs: Selection, Sequence, Iteration. Arithmetic and Boolean Operators
Week 5	Summative Tests		NEA/Progarmming/Pseudocode Practice	2.2.2: Data types and Casting
Week 6	Impacts of digital technology - Ethical and Cultural Issues		NEA/Progarmming/Pseudocode Practice	2.2.3: String Manipulation, file handling, records, SQL, arrays (1D and 2D), Sub Programs (Procedures and Functions), Random name generator.
Week 5	Impacts of digital technology - Enviromental Issues		NEA/Progarmming/Pseudocode Practice	1.1.1 Architecture of a CPU - Fetch, Decode, Execute. Componets - ALU. CU, Cahce, Registers,, Von Neumann/registers - MAR, MDR, PC, ACC

Half Term

Week	Comp 01	Comp 02	Comp 03	Recap Recall. In and On/Starters
Week 8	Impacts of digital technology - Legislation and Privacy		NEA/Progarmming/Pseudocode Practice	Starter Contingency
Week 9	Summative Tests		NEA/Progarmming/Pseudocode Practice	1.1.2 - CPU Perfromance - Clock Speed, Cache Size, Number of Cores. 1.1.3 - Embedded Systems
Week 10	Mock Exam Revision		NEA/Progarmming/Pseudocode Practice	2.3.1: Defensive Design - Authentication and Anticipating Misuse, Input Validation, Program Maintainability
Week 11	Mock Exam Revision		NEA/Progarmming/Pseudocode Practice	2.3.2: Testing - Purpose and Types, Syntax and Logic errors, Normal, Boundary, Erronous and Invalid data
Week 12	Mock Exams		NEA/Progarmming/Pseudocode Practice	2.4.1 Boolean logic and Truth Tables
Week 13	Networks, connections and protocols - The Internet and wide area networks		NEA/Progarmming/Pseudocode Practice	2.5.1 Languages - High and Low, Translators and Compilers. 2.5.2 - IDE's
Week 12	Networks, connections and protocols - Local Area Networks		NEA/Progarmming/Pseudocode Practice	1.2.1 Primary Storage - Ram Rom and Virtual Memory
Week 13	Networks, connections and protocols - Wireless networking		NEA/Progarmming/Pseudocode Practice	Starter Contingency
Week 14	Networks, connections and protocols - Client-server and peer-to-peer networks		NEA/Progarmming/Pseudocode Practice	1.2.2 Secondary Storage - Need and Types SSD, Magnetic and Optical , devices to use and charactoristics.

Christmas

Year 10 — Year 1 — Term 2

Week	Comp 01	Comp 02	Comp 03	Recap Recall. In and On/Starters
Week 15	Data Representation - Storage units and binary numbers		How to use sub programs (functions and procedures) to produce structured code	2.1.3: Binary, Linear, Search, Bubble, Merge and Insertion Sort
Week 17	Data Representation - Binary arithmetic and hexadecimal		How to use sub programs (functions and procedures) to produce structured code	2.2.1: Variables, Constants, operators, inputs, outputs, and assignments. Programming Constructs: Selection, Sequence, Iteration. Arithmetic and Boolean Operators
Week 18	Data Representation - Charactors		Random number generation	2.2.2: Data types and Casting
Week 19	Data Representation - Images		Random number generation	2.2.3: String Manipulation, file handling, records, SQL, arrays (1D and 2D), Sub Programs (Procedures and Functions), Random name generator.
Week 20	Data Representation - Sound		Skills Recap	2.1.1, 2.1.2: Abstraction, Decomposition, Algorithmic thinking, Flowcharts, Pseudocode, Syntax and Logic errors, Trace Tables

Half Term

Week	Comp 01	Comp 02	Comp 03	Recap Recall. In and On/Starters
Week 21	Data Representation - Compression		Defensive design considerations: Anticipating misuse, Authentication, Input validation, Maintainability.	2.1.3: Binary, Linear, Search, Bubble, Merge and Insertion Sort
Week 22	Summative Tests		Defensive design considerations: Anticipating misuse, Authentication, Input validation, Maintainability.	2.2.1: Variables, Constants, operators, inputs, outputs, and assignments. Programming Constructs: Selection, Sequence, Iteration. Arithmetic and Boolean Operators
Week 23	Systems Architecture - The CPU		Testing - Final and Iterative	1.2.4 - Data Storage - Data Rep - Bianry Denary, Hex, Addition, Shifts, Charactors Images and Sound
Week 24	Systems Architecture - L2CPU Performance		Testing - Normal, Boundary, Invalid, Erroneous	2.2.2: Data types and Casting
Week 25	Systems Architecture - L3 Memory		Testing (mixture of above)	Starter Contingency

Year 11 — Year 2 — Term 1

Week	Comp 01	Comp 02	Comp 03	Recap Recall. In and On/Starters
Week 15	Networks, connections and protocols - Protocols and layers		NEA/Progarmming/Pseudocode Practice	1.2.3 Units - Data Capacity and Calulations
Week 17	Summative Tests		NEA/Progarmming/Pseudocode Practice	1.2.4 - Data Storage - Data Rep - Bianry Denary, Hex, Addition, Shifts, Charactors Images and Sound
Week 18	Contingency		NEA/Progarmming/Pseudocode Practice	1.6.1 Ethics, legal, Cultural, Environmental, Privacy and legislation
Week 19	Contingency		NEA/Progarmming/Pseudocode Practice	1.5.1 - Operating Systems - User interface, Memory management and multitasking, Peripheral management and drivers, User management, File management
Week 20	Contingency		NEA/Progarmming/Pseudocode Practice	1.5.2 - Utility Software, Encryption, Defragmentation, Data Compression

Half Term

Week	Comp 01	Comp 02	Comp 03	Recap Recall. In and On/Starters
Week 21	Revision			Starter Contingency
Week 22	Revision			Areas not covered in Yr11 Starters are 1.3.1 - Network and Topologies, 1.3.2. Wired and Wireless Networks, protocols and layers. 1.4.1 Threats to computer systems and networks. 1.4.2 Identifying and preventing vunerbilities
Week 23	Revision			
Week 24	Revision			
Week 25	Revision			

Easter

Year 10 — Year 1 — Term 3

Week	Comp 01	Comp 02	Comp 03	Recap Recall. In and On/Starters
Week 26	Systems Architecture - L4 Secondary Storage		Skills Contingency/Mini Project	2.1.1, 2.1.2: Abstraction, Decomposition, Algorithmic thinking, Flowcharts, Pseudocode, Syntax and Logic errors, Trace Tables
Week 27	Summative Tests		Skills Contingency/Mini Project	2.1.3: Binary, Linear, Search, Bubble, Merge and Insertion Sort
Week 28		Logic and Languages - L1 Logic diagrams and truth tables	Skills Contingency/Mini Project	2.2.1: Variables, Constants, operators, inputs, outputs, and assignments. Programming Constructs: Selection, Sequence, Iteration. Arithmetic and Boolean Operators
Week 29		Producing Robust Programs - L2 Defensive design	Project	1.2.4 - Data Storage - Data Rep - Bianry Denary, Hex, Addition, Shifts, Charactors Images and Sound
Week 30		Producing Robust Programs - L3 Errors and testing	Project	1.1.1 Architecture of a CPU - Fetch, Decode, Execute. Componets - ALU. CU, Cahce, Registers,, Von Neumann/registers - MAR, MDR, PC, ACC
Week 31		Translators & Facilities - L4 Translators and facilities of languages	Project	1.1.2 - CPU Perfromance - Clock Speed, Cache Size, Number of Cores. 1.1.3 - Embedded Systems
Week 32		Translators & Facilities - L4 The Integrated Development Enviroment	Project	1.2.1 Primary Storage - Ram, Rom and Virtual Memory

Half Term

Week	Comp 01	Comp 02	Comp 03	Recap Recall. In and On/Starters
Week 33		Summative Tests	Project	2.2.3: String Manipulation, file handling, records, SQL, arrays (1D and 2D), Sub Programs (Procedures and Functions), Random name generator.
Week 34		End of year test revision	Mini Project - Pseudocode Evidence	2.4.1 Boolean logic and Truth Tables
Week 35		End of Year Test revision	Mini Project - Algorithm Evidence	2.3.1: Defensive Design - Authetication and Anticipating Misuse, Input Validation, Program Maintainability
Week 36	Contingency, Revision for end of year test and Programming Practice			2.5.1 Languages - High and Low, Translators and Compilers. 2.5.2 - IDE's
Week 37	End of year test			Starter Contingency
Week 38	Programming Practice			Starter Contingency
Week 39	WOW Week No ICT	WOW Week No ICT	WOW Week No ICT	
Week 40				

Year 11 — Year 2 — Term 3

Week	Comp 01	Comp 02	Comp 03	Recap Recall. In and On/Starters
Week 26	Revision			
Week 27	Revision			
Week 28	Revision	Revision		
Week 29	Revision	Revision		

Half Term

Week
Week 34
Week 35
Week 36
Week 37
Week 38
Week 39
Week 40