Key Stage 4 Curriculum Map – Computer Science GCSE

	Autumn Half Term 1	Autumn Half Term 2	Spring Half Term 1	Spring Half Term 2	Summer Half Term 1	Summer Half Term 2
Year 10	**Themes that will be covered :** **Unit 1: Computer Systems** **1.1 Systems Architecture** - CPU - Registers - Cache - FDE Cycle - CPU Performance - Embedded Systems	**Themes that will be covered :** **Unit 1: Computer Systems** **1.2 Memory** - RAM and ROM - Virtual Memory **1.3 Storage** - Data capacity calculations - Types of storage - Storage characteristics	**Themes that will be covered :** **Unit 1: Computer Systems** **1.4 Wired and Wireless Networks** - LAN and WAN - Network Performance - Client-Server Vs P2P - Network Hardware - DNS - Cloud - Virtual Networks **1.5 Network Topologies** - Topologies - Wifi - Ethernet - IP, MAC addresses - Protocols and layers - Packet Switching	**Themes that will be covered :** **Unit 1: Computer Systems** **1.6 System Security** - Forms of attack - Threats to Networks - Identifying and preventing vulnerabilities **1.7 Systems Software** - Purpose of system software - OS - Utilities **Unit 2 Introduction** **Introduction to Algorithms** - Algorithms - Flow diagrams - Pseudo-code - Input/output - Variables - Data types	**Themes that will be covered :** **Unit 1: Computer Systems** **1.8 Ethical, legal, cultural and environmental Concerns** - Issues - Environmental impact - Open source vs proprietary software - Legislation **Unit 2 Introduction** **Introduction to Algorithms** - Algorithms - Flow diagrams - Pseudo-code - Input/output - Variables - Data types	**Themes that will be covered :** **Unit 2: Computational Thinking** **21. Algorithms** - Computational thinking - How to produce algorithms **2.2 Programming Techniques** - Variables, constants - Data types - Input and output statements - 3 programming constructs - String manipulation - Arrays - Sub programs (functions/procedures) - Arithmetic operators - Boolean operators
	Key Assessments taking place : 1.1 Mini-Assessment Systems Architecture H/W Questions	**Key Assessments taking place :** 1.1 – 1.3 Mini-Assessment Memory and Storage H/W Questions	**Key Assessments taking place :** 1.4-1.5 Mini-Assessment Networks H/W Questions	**Key Assessments taking place :** 1.6-1.7 Mini-Assessment System Security and Systems Software H/W Questions	**Key Assessments taking place :** 1.8 Mini-Assessment E, L, C and E H/W questions	**Key Assessments taking place :** 2.1-2.1 Mini-Assessment **Unit 1 Mock Examination** Programming H/W questions

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Year 11	**Themes that will be covered :** **Preparation for Programming Project** - Programming Techniques - Analysis - Design **Unit 2: Computational Thinking** **2.1 Algorithms** - Searching algorithms - Sorting algorithms - Interpret, correct and complete algorithms **2.2 Programming techniques** - File handling – open, read, write, close - Records - SQL	**Themes that will be covered :** **Preparation for Programming Project** - Development - Testing and Evaluation **Unit 2: Computational Thinking** **2.3 Producing robust programs** - Defensive design considerations - Maintainability - Testing and test data - Syntax and logic errors **2.4 Computational Logic** - Logic diagrams - Truth tables - Boolean operators - Computing-related mathematics	**Themes that will be covered :** **Programming Project Controlled Assessment**	**Themes that will be covered :** **Unit 2: Computational Thinking** **2.5 Translators and Facilities of Languages** - Levels of programming languages - Translators - Assemblers, compilers and interpreters - IDEs **2.6 Data Representation** - Units - Numbers - Characters - Images - Sound - Compression	**Themes that will be covered :** Revision and recapping of all topics (Units 1-2).	**Themes that will be covered :**
	Key Assessments taking place : 2.1-2.2 Mini-Assessment Programming H/W Questions	**Key Assessments taking place :** 2.3-2.4 Mini-Assessment Programming H/W Questions December Mock	**Key Assessments taking place :** Controlled Assessment	**Key Assessments taking place :** Full Past papers Theory H/W Questions & Mini-Tests March Mock	**Key Assessments taking place :** Full Past papers and mock exams	**Key Assessments taking place :**