

Key Stage 4 Curriculum Map – Computer Science GCSE (3 Year)

	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 9	<p>Themes that will be covered :</p> <p>Unit 1: Computer Systems</p> <p>Introduction to Computer Science</p> <p>1.1 Systems Architecture</p> <ul style="list-style-type: none"> - CPU - Registers - Cache 	<p>Themes that will be covered :</p> <p>Unit 1: Computer Systems</p> <p>1.1 Systems Architecture</p> <ul style="list-style-type: none"> - FDE Cycle - CPU Performance - Embedded Systems <p>1.2 Memory</p> <ul style="list-style-type: none"> - RAM and ROM - Virtual Memory 	<p>Themes that will be covered :</p> <p>Unit 1: Computer Systems</p> <p>1.3 Storage</p> <ul style="list-style-type: none"> - Data capacity calculations - Types of storage - Storage characteristics <p>1.4 Wired and Wireless Networks</p> <ul style="list-style-type: none"> - LAN and WAN - Network Performance - Network Hardware - DNS - Virtual Networks <p>1.5 Network Topologies</p> <ul style="list-style-type: none"> - Topologies - Wifi - Ethernet - Network hardware - IP, MAC addresses - Packet Switching 	<p>Themes that will be covered :</p> <p>Unit 1: Computer Systems</p> <p>1.4 Wired and Wireless Networks</p> <ul style="list-style-type: none"> - Client-Server Vs P2P - Cloud <p>1.5 Network Topologies</p> <ul style="list-style-type: none"> - Protocols and layers <p>1.6 System Security</p> <ul style="list-style-type: none"> - Forms of attack - Threats to Networks - Identifying and preventing vulnerabilities 	<p>Themes that will be covered :</p> <p>Unit 1: Computer Systems</p> <p>1.7 Systems Software</p> <ul style="list-style-type: none"> - Purpose of system software - OS - Utilities <p>1.8 Ethical, legal, cultural and environmental Concerns</p> <ul style="list-style-type: none"> - Issues - Environmental impact - Open source vs proprietary software - Legislation <p>Unit 2 Introduction</p> <ul style="list-style-type: none"> - Introduction to algorithms 	<p>Themes that will be covered :</p> <p>Unit 1 Recap</p> <p>Unit 2 Programming Preparation</p> <ul style="list-style-type: none"> - Algorithms - Flow diagrams - Pseudo-code - Input/output - Variables, constants - Data types - Programming constructs
	<p>Key Assessments taking place :</p> <p>H/W Questions</p>	<p>Key Assessments taking place :</p> <p>1.1 Mini-Assessment</p> <p>H/W Questions</p>	<p>Key Assessments taking place :</p> <p>1.1 – 1.3 Mini-Assessment</p> <p>H/W Questions</p>	<p>Key Assessments taking place :</p> <p>1.4-1.5 Mini-Assessment</p> <p>H/W Questions</p>	<p>Key Assessments taking place :</p> <p>1.6-1.8 Mini-Assessment</p> <p>H/W questions</p>	<p>Key Assessments taking place :</p> <p>Unit 1 Mock</p> <p>H/W Questions</p>

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Year 10	Themes that will be covered : Unit 2: Computational Thinking 2.1. 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	Themes that will be covered : 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 : 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 : 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). Programming Exercises in Preparation for Programming Project.	Themes that will be covered : Revision and recapping of all topics (Units 1-2). Programming Exercises in Preparation for Programming Project.
	Key Assessments taking place : Programming H/W Questions	Key Assessments taking place : 2.1-2.2 Mini-Assessment Programming H/W Questions	Key Assessments taking place : 2.3-2.4 Mini-Assessment	Key Assessments taking place : Full Past papers Theory H/W Questions & Mini-Tests	Key Assessments taking place : Full Past papers and mock exams	Key Assessments taking place : Full Past papers and mock exams Year 10 Mock

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Year 11	Themes that will be covered : Preparation for Programming Project <ul style="list-style-type: none"> - Programming Techniques - Analysis - Design Personalised Revision (Units 1-2)	Themes that will be covered : Preparation for Programming Project <ul style="list-style-type: none"> - Development - Testing and Evaluation Personalised Revision (Units 1-2)	Themes that will be covered : Programming Project Controlled Assessment	Themes that will be covered : Personalised Revision (Units 1-2)	Themes that will be covered : Personalised Revision (Units 1-2)	Themes that will be covered :
	Key Assessments taking place : Mini-Assessments	Key Assessments taking place : Mini-Assessments December Mock	Key Assessments taking place : Controlled Assessment	Key Assessments taking place : Full Past papers Theory H/W Questions & Mini-Tests	Key Assessments taking place : Full Past papers and mock exams March Mock	Key Assessments taking place :