Curriculum Sequencing Grid: *(KS4 - GCSE Computer Science)*

Year 10	**Term 1**	**Term 2**	**Term 3**
Unit (Tablet in 39 week plan)	• Component 1 – Understanding Computer Science	• Component 1 – Understanding Computer Science	• Component 1 – Understanding Computer Science • Programming
Key Retainable Knowledge (Required for Y11/13) • What… How…. Why….	• Von Neumann Architecture • CPU Architecture & Performance • Fetch Decode Execute cycle • Cores, Clock Speed • Embedded Systems • Input, Output, Storage Devices • RAM/ROM • Binary/Denary/Hexadecimal • Storing images and sound on computer systems • Lossy/Lossless Compression	• Network types and topologies • Protocols • The Internet • Cyber Security • Identifying Vulnerabilities • Operating System • Utility Software	• Ethical Issues • Cultural Issues • Environmental Issues • Legal Issues and Legislation • Basic Programming Concepts • Sequence/Selection and Iteration • String Handling • File Handling • Sub Programs
Key Technical Vocabulary (To be modelled and deliberately practiced in context.)	• Central Processing Unit • Controller, ALU, Registers, Cache • RAM / ROM • Magnetic/Optical/Solid State • Clock Speed / Cores • Bit / Byte / Kilobyte / Megabyte / Gigabyte / Terabyte • ASCIII / Unicode • Binary/Denary/Hexadecimal • Lossy/Lossless Compression	• LAN, WAN • Star, Mesh • TCP/IP • Domain Name Servers • Malware • Social Engineering • Ethical Hacking, Penetration Testing • Virus Checker, • Firewalls • Defragmentation	• Ethics • Legislation • Computer Misuse Act • Data Protection Act • Copyright • Variable • Constant • Sequence • Selection / IT • Iteration / FOR / WHILE • Concatenation

Curriculum Sequencing Grid: *(KS4 - GCSE Computer Science)*

Opportunities for Reading	• Revision Guide • Knowledge Organisers • Teach ICT • BBC Bitesize • Teach Computing • @maltbycab Twitter feed	• Revision Guide • Knowledge Organisers • Teach ICT • BBC Bitesize • Teach Computing • @maltbycab Twitter feed	• Revision Guide • Knowledge Organisers • Teach ICT • BBC Bitesize • Teach Computing • @maltbycab Twitter feed
Developing Cultural Capital (exposure to very best- essential knowledge and skills of educated citizens – appreciation of human creativity and achievement.)	• Bebras • Hour of Code		• Cyber Discovery • Trip to Bletchley Park
Cross Curricular Links (Authentic Connections)	• Technology – Inventions and new technologies. • Maths – Number Skills • English – Extended Writing	• Maths – Number Skills • English – Extended Writing	• English – Extended Writing • Lifeskills – Social and Moral Issues
Key Assessment	• End of unit assessments, interleaved with some key learning from previous year.	• End of unit assessments, interleaved with some key learning from previous units, year and term.	• End of unit assessments, interleaved with some key learning from previous units, year and term.

Curriculum Sequencing Grid: *(KS4 - GCSE Computer Science)*

Year 11	**Term 1**	**Term 2**	**Term 3**
Unit (Tablet in 39 week plan)	• Component 2 – Computational Thinking, Algorithms and Programming	• Component 1 – Understanding Computer Science • Component 1 – Understanding Computer Science	
Key Retainable Knowledge (Required for Y11/13) • What… How…. Why….	• Algorithms • Sorting / Searching • Defensive Design / Testing • Boolean Logic / Logic Gates • IDEs	• Recap and revisit all topics in component 1 and component 2 in readiness for May exam.	
Key Technical Vocabulary (To be modelled and deliberately practiced in context.)	• Computational Thinking • Algorithms • Programming • Sorting / Searching • Constants / Variables / Input / Output / Assignment • Sequence / Selection / Iteration • Data Types • String Manipulation / Arrays • File Handling • SQL • Validation • Programming Errors / Syntax / Logic • AND / OR / NOT • High Level Language • Low Level Language • Integrated Development Environment	• Recap and revisit all topics in component 1 and component 2 in readiness for May exam.	

Curriculum Sequencing Grid: *(KS4 - GCSE Computer Science)*

Opportunities for Reading	• Revision Guide • Knowledge Organisers • Teach ICT • BBC Bitesize • Teach Computing • @maltbycab Twitter feed	• Revision Guide • Knowledge Organisers • Teach ICT • BBC Bitesize • Teach Computing • @maltbycab Twitter feed	
Developing Cultural Capital (exposure to very best- essential knowledge and skills of educated citizens – appreciation of human creativity and achievement.)	• Bebras • Hour of Code		
Cross Curricular Links (Authentic Connections)	• Technology – Inventions and new technologies. • Maths – Number Skills • English – Extended Writing	• Maths – Number Skills • English – Extended Writing	
Key Assessment	• End of unit assessments, interleaved with some key learning from previous year.	• Real component 1 and component 2 exams.	