Sir Thomas Wharton Academy	INVEST in the power of the written word	EXPERIENCE a range of cultures, histories an d beliefs	EXPLORE the shared values of civilisation	SHAPE society and our place within it	GROW as instinctive readers, writers and orators	PURSUE English beyond the classroom

Curriculum Sequencing Grid

Subject	OCR A-Level Computer Science			Year	13	
	Term 1		Term 2		Term 3	
	HT1	HT2	HT3	HT4	HT5	HT6
Component	2.1 Computational Thinking 3.1 Analysis	2.3 Algorithms 3.2 Design	1.1 System Architecture 1.2 Software and Software Development 3.3 Development	1.3 Exchanging Data 2.2 Programming 3.3 Development	1.4 Data types, data structures and algorithms 1.5 Legal, moral, cultural and ethical issues 3.4 Evaluation	-
Developing Cultural Capital	Students will continue to work on their projects having a real world impact solving a problem with a computer for a real life stakeholder.					-
Substantive Knowledge/ Disciplinary Knowledge	**Substantive Knowledge**: > Thinking Abstractly > Thinking Ahead > Thinking Procedurally > Thinking Logically > Thinking Concurrently > Programming Techniques > Computational Methods > Back Tracking > Data Mining > Heuristics > Divide and Conquer > Performance Modelling > Pipeling > Visualisation **Disciplinary Knowledge**: > Global and Local Variable > Recursion > Modularity > OOP Techniques	**Substantive Knowledge**: > FlowCharts > Structure Diagrams > Time and Space Efficency > Big O Notation > Sorting and Searching algorithm with algorithms and programming. > Stacks > Queues > Quick Sort > Pathfinding, Dijksta's and A* Algorithms > Binary Search Tress > Traversal Breadth and Depth > Complexity; Constant, Linear, Polynomial, Logarithmic and Exponential **Disciplinary Knowledge**: > Getters > Setters	**Substantive Knowledge**: >CPU Structure > CPU Performance > FDE Cycle, Registers and Buses > Parallel Processing > RISC and CISC > SIMD and MIMD > Haravard vs Von Neumann > System Software and Oss > ISR impacts on FDE > Scheduling of Processes >Types of Operating Systems > Memory Management > BIOS > Virtual Machines >Stages of Compilation > Linkers, Loaders and Libraries >Software Development Methodologies > LMC Programming > OOP Programming **Disciplinary Knowledge**: > Procedural Programming > LMC programming	**Substantive Knowledge**: > Abstraction > Inheritance > Polymorphism > Encapsulation > Compression Lossy, lossless, Run length and Dictionary > Encryption > Hashing Algorithms > Flat File Databases > Relational Databases > Normalisation of Databases > SQL > ACID Transactions >Network Protocols > Network Layering >Packet Switching > Circuit Switching > DNS > Network Hardware > Network Security and Threats > HTML, CSS and JavaScript > Search Engines > Client Server vs Peer to Peer **Disciplinary Knowledge**: > OOP paragdigm programming > Multipage Website development	**Substantive Knowledge**: > Basic Data Types > Binary Positive Images > Sign and Magintude > Twos Complement > Hexadecimal > Floating Point numbers > Normalisation fo Floating Point numbers > Bit wise Manipulation > Binary Shifting > Character Sets > Arrays (1D, 2D and 3D) > Data Structures (Trees, Graphs and Linked Lists) > Data Structure Traversal, Add Remove > Boolean Logic > Truth Tables and Karnaugh Maps > Boolean Simplification Rules, De Morgan's Law, Distribution, Association, Commutation, Double negation >D-Type FlipFlops >Half and Full Adders >Computer Legislation **Disciplinary Knowledge**:	-
Cross Curricular Links	Problem Solving Logical Thinking Post-16 Career links	Problem Solving Logical Thinking Post-16 Career links Maths	Problem Solving Logical Thinking Post-16 Career links	Problem Solving Logical Thinking Post-16 Career links	Problem Solving Logical Thinking Post-16 Career links Maths Business	-
Vocabulary	Examination command words published and used by OCR and Vocabulary List by OCR throughtextbooks, noted in a list:				**Link**	
Assessments	NEA Analysis 2.1 SPA	2.2 SPA Paper 1 Trail Paper 2 Trial NEA Design	2.3 SPA	NEA Development Paper 1 Trail Paper 2 Trial	NEA Evaluation Final A Level Examinations	Final A Level Examinations