

Subject Name: Computer Science



Year 12	Subject Theme	Wider Reading/ Independence
Autumn	<p><u>Unit 1: Programming</u></p> <p>C# programming: selection, iteration, arrays, subroutines, parameters, classes, objects, object-oriented concepts - encapsulation, inheritance, polymorphism.</p> <p><u>Unit 2: Problem Solving</u></p> <p>Logic problems, structured programming, algorithms, testing, abstraction, Finite State Machines.</p>	<p>Wwww.w3schools.com C# tutorials.</p> <p>OOP resources on subject sharepoint folder.</p>
Spring	<p><u>Unit 3: Data representation</u></p> <p>Number systems, binary arithmetic, bitmap graphics, sound representation, data compression, encryption.</p> <p><u>Unit 4: Hardware and Software</u></p> <p>Operating Systems, programming language classification, translators, logic gates, Boolean algebra.</p> <p><u>Unit 5: Computer Architecture</u></p> <p>Internal computer hardware, processor, instruction sets, assembly language, input/output devices, secondary storage.</p>	As above
Summer	<p><u>Unit 6: Communication technology</u></p> <p>Communication methods, network topologies, client-server, wireless networking, privacy, digital issues.</p> <p><u>Programming Project in C#</u></p> <p>Design, implementation and testing of a computer system for an end user.</p>	As above

Key dates	PPE's held twice within the year. External Examinations sat Jan/ June. Assignment deadlines submission early May
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Subject Name: Computer Science



Year 13	Subject Theme	Wider Reading/Independence
Autumn	<u>Unit 7: Data structures</u> Queues, Lists, Stacks, Hash tables, Graphs, Trees, Vectors. <u>Unit 8: Algorithms</u> Recursive algorithms, Big-O notation, Searching and sorting, graph-traversal, optimisation algorithms, limits of computation	Tackling A Level Projects in Computer Science for AQA 7517 ISBN: 978-1910523209
Spring	<u>Unit 9: Regular languages</u> Mealy machines, sets, regular expressions, turing machines, backus-naur form, reverse polish notation. <u>Unit 10: The internet</u> Internet structure, packet switching, security, TCP/IP, IP addresses, client server model. <u>Unit 11: Databases & software development</u> Entity relationship modelling, relational databases, normalisation, SQL,	As above
Summer	<u>Unit 12: OOP & Functional Programming</u> OOP design principles, functional programming, lists, Big Data.	As above

Key dates	PPE's held twice within the year along with final external examination in January/ June Y13
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