

Curriculum Overview: Year 12 Computer Science

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic 1.1 The characteristics of contemporary processors, input, output and storage devices 1.4 Data Types, data structures and algorithms	Topic 2.2 Problem solving and programming 1.4 Data Types, data structures and algorithms	Topic 1.4 Data Types, data structures and algorithms 1.2 Software and software development	Topic 1.2 Software and software development 1.3 Exchanging data	Topic 1.3 Exchanging data 3.1 Analysis of the problem	Topic 1.3 Exchanging data 3.1 Analysis of the problem 3.2 Design of the solution
Links to prior learning KS4 1.2 Memory and storage KS3 Computer Science I, II and III Stretch and Challenge Enquiry How do you represent floating point numbers in different formats?	Links to prior learning KS4 2.2 Programming fundamentals/1.2 Memory and storage KS3 Programming I, II and III Stretch and Challenge Enquiry How do you program recursion?	Links to prior learning KS4 1.2 Memory and storage/2.1 Algorithms/2.2 Programming fundamentals/2.4 Boolean logic Stretch and Challenge Enquiry How do simplify Boolean expression	Links to prior learning KS4 1.3 Networks/1.5 System software Stretch and Challenge Enquiry How does OO programming differ from procedural programming?	Links to prior learning KS4 1.3 Networks 2.2 Problem solving and programming Stretch and Challenge Enquiry What programming approach could you use for your proposed solution and why?	Links to prior learning KS4 1.3 Networks 2.2 Problem solving and programming Stretch and Challenge Enquiry How can the pagerank algorithm be explained?
Equipment Needed Idle / Pycharm Google Classroom A device to be able to program on (PG ONLINE A Level Computer Science Book)		Wider Reading Essential Maths Skills for AS/A Level Computer Science (Victoria Ellis, Gavin Craddock)		Family activities Discuss some of the programs they have created. If you have a PC or laptop and can access the following website to program https://www.tutorialspoint.com/compilers/online-python-compiler.htm Or download the free Python software ; students can work on their programming skills. Video tutorials to watch here	