

Curriculum Map - KS5 Computer Science

Subject: Computer Science

Year Group: Year 12

	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
	Teacher 1	Teacher 2	Teacher 1	Teacher 2	Teacher 1	Teacher 2	Teacher 1	Teacher 2	Teacher 1	Teacher 2	Teacher 1	Teacher 2
Content <i>Descriptive/ propositional knowledge</i> <i>'knowing that'</i>	1.1.1 Structure and the Function of the Processor 1.1.2 Types of Processor 1.1.3 Input, Output and Storage Devices	2.1.1 Thinking abstractly 2.1.2 Thinking ahead 2.1.3 Thinking procedurally	1.2.1 Systems software 1.2.2 Applications Generation 1.2.3 Software development 1.2.4 Types of programming languages	2.1.5 Thinking concurrently 2.2.1 Programming Techniques incl. 1.4.1a, 1.4.2a, 1.2.2d	1.3.1 Compression, Encryption and hashing 1.3.2 Databases 1.3.3 Networks	2.2.2 Computational methods	1.4 Data Types 1.4.3 Boolean Algebra	2.3.1 Algorithms including 1.4.2b 1.2.3 Software Development	Coursework Preparation Revision Mocks	Coursework unit		
Skills <i>Ability knowledge</i> <i>'knowing how'</i>	understand the structure and function of the ALU and Registers	know how to Identify sub-procedures necessary to solve a problem	know the need for, function and purpose of operating systems and memory management	know how to determine the parts of a problem that can be tackled at the same time.	know the characteristics of networks and the importance of protocols and standards	know how to program in a procedure /imperative language and object oriented language	know how data is represented and stored within different structures.	know how to use algorithms to describe problems and standard algorithms	Revision of key content / Exam techniques	know how to apply computational thinking to analyse a problem and use this to design a solution.		

Key Questions	What are Components of a computer and what are their functions?	What are the differences Between An Abstraction And Reality	What is an interrupt and how does it work? What is a virtual machine?	What are the benefits and trade offs that might result from concurrent processing in a particular situation?	How data is exchanged between different systems?	How can computers be used to solve problems and programs can be written to solve them?	What are the different algorithms that can be applied?	What are the standard algorithms?	What is an agile method of software development?	What problem is my program going to solve. How has this type of problem been solved before? Who are my stakeholders?	
Assessment End of topic tests	End of topic tests: 1.1.1, 1.1.2 & 1.1.3	End of topic tests: 2.1.1, 2.1.2 , 2.1.3 Programming challenge	End of topic tests: 1.2.1, 1.2.2, 1.2.3, 1.2.4	End of topic tests: 2.1.5, 2.2.1	End of topic tests: 1.3.1,1.3.2, 1.3.3	End of topic tests: 2.2.2	End of topic tests: 1.4, 1.4.3	End of topic tests: 2.3.1, 1.4.2b	Full exam past papers/Practise questions and feedback during lessons	Full exam past papers/Practise questions and feedback during lessons	Coursework unit is assessed and moderated before being sent to the exam board.
Literacy/ Numeracy	<p>Emphasis on the mathematical skills used to express computational laws and processes</p> <p>Development of literacy and communication for technical report writing.</p> <p>This qualification is suitable for learners intending to pursue any career in which an understanding of technology is needed.</p> <p>Students typically go on to degree level study in fields such as computer science with cyber security/data science/mathematics/business.</p>										
Enrichment	<p>***Not during pandemic*** Visit to Berlin (Game Science Museum & ComputerspieleMuseum) Cyber Discovery Challenge (new challenge every year). https://joincyberdiscovery.com/</p>										