KS4 Computer Science GCSE Overview

The program of study is based on the OCR J277 course, and it follows their 2-year model of delivery.
We aim to develop further advance student's interest in computing and enhance student's programming skills, so that they are knowledgeable and successful. We also look to build students ability in computational thinking, so that they use it within their own programming, and more broadly within all their digital interactions.
As a result of this programme of study students should have improved digitally literacy, improved their ability to use technology to express themselves, have a greater understanding the impacts of digital technology to the individual, wider society, and their communications should be carried out in a way which is suitable for the future workplace and as active participants in a digital world.

Year 10 **OCR J277: Paper 2 with Programming in Python, elements of paper 1**						
Term	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Knowledge	**2.4** Boolean Logic **1.2** Data Storage - Numbers	**1.2** Data Storage – Numbers, images, sound, and compression	**2.1** Algorithms **2.1** Algorithms **2.1** Searching and Sorting algorithms**2**	**2.2** Programming techniques	**2.2** Programming techniques **2.2** Practical programming skills **2.2.3** Additional programming techniques	**2.3** Defensive design **2.3** Testing programs **2.3** Producing Robust
	1.2 Data Storage – Numbers, images, sound, and compression	**2.1** Algorithms **2.1** Algorithms **2.1** Searching and Sorting algorithms**2**	**2.2** Programming techniques **2.2** Programming fundamentals	**2.2** Programming techniques **2.2** Practical programming skills	**2.2.3** Additional programming techniques	**2.5** Programming languages & IDEs
Skills / Software	Algorithms Decomposition	Algorithms Decomposition Programming Debugging	Programming Debugging Algorithms Decomposition	Programming Debugging Mathematics Problem Solving	Computer Hardware Programming Physical Computing Problem Solving	Abstraction Decomposition Mathematics programming
External Links	1.2 Data Representation 2.4 Boolean Logic	2.1 Common algorithms & Algorithm production 2.1 Computational Thinking 2.1 Common Algorithms	2.1 Common algorithms & Algorithm production 2.1 Computational Thinking 2.1 Common Algorithms	2.2 Programming fundamentals 2.2 Programming techniques	2.2 Programming fundamentals 2.2 Programming techniques	2.3 Robust programs 2.2 Programming techniques 2.5 IDEs
End Point	**Boolean Logic** **Data Storage – numbers**	**Algorithms** **Programming Fundamentals** **Data types**	**Algorithms** **Programming Fundamentals** **Data types**	**Programming Techniques** **Data Storage**	**Additional programming techniques**	**Defensive design** **Testing Programs** **Producing Robust programs** **Programming languages and IDEs**

Year 11 OCR - J277 – Paper 1 and review of paper 2 (Programming in Python)						
Term	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Knowledge	**1.1** The CPU **1.1** Embedded Systems **1.1** System Architecture	**1.5** Utility software **1.3** Networks and topologies **Year 11 Mock**	**1.3** Network security **1.6** Ethical, legal, cultural & environmental impact	**Revision**	**Revision**	
	1.2 Storage **1.2** Secondary storage **1.5** Operating Systems	**1.3** Networks and topologies **1.3** Network security	**1.6** Ethical, legal, cultural & environmental impact **1.6** Computing Threats	**Revision**	**Revision for Paper 1 and 2** **Exam** **13/05/2025 (Paper 1) PM** **19/05/2025 (Paper 2) PM** **Retrieval of prior knowledge**	
Skills / software	Networking Programming Problem Solving Literacy Computer Hardware Computer Law & Ethics	Computer Law & Ethics Abstraction Problem Solving Mathematics programming	Abstraction Problem Solving Mathematics	Anki Seneca BBC Bitesize		
External Links	1.1 System Architecture 1.2 Memory and Storage 1.5 System Software	1.3 Networking & Wired and Wireless networks 1.4 System Security	1.4 System Security 1.6 Ethics	Decomposition and algorithm practice questions How to tackle essay-style questions		
End points	**System architecture - CPU** **Main memory and Secondary Storage** **Operating systems** **Utility software** **Software,**	**Networks and Network Hardware** **Network topologies** **Networks – wired and wireless** **Network security**	**Network security** **Computing threats, and ethical, legal, cultural & environmental impacts of computing**			