

**Quality of Education:** Curriculum is planned and sequenced so that new **knowledge** and **skills** build on what has been taught before and towards its clearly defined end points.



SUBJECT: Computer Science		CURRICULUM PROGRESSION PATHWAYS		CL: Mr Smith	2023-2024
KS3 (Level 1) Computing	KS4 (Level 2) OCR GCSE Computer Science	KS5 (Level 3) BTEC Level 3 National Extended Certificate in Computing	Further Education and training	Careers	
▲	▲	▲	▲		
<b>Year 7 - Basic Skills</b> <b>Knowledge:</b> E-Safety, Internet Searching <b>Skills:</b> PowerPoint Presentation, Word Processing, Desktop Publishing <b>Year 7 - Web Page Creation</b> <b>Knowledge:</b> Internet Searching <b>Skills:</b> HTML Coding <b>Careers:</b> Web Designer <b>Year 7 - Programming</b> <b>Knowledge:</b> Python Programming Theory <b>Skills:</b> Python Programming <b>Careers:</b> Programmer  <b>Year 8 - Spreadsheets</b> <b>Knowledge:</b> Spreadsheet Key Terms <b>Skills:</b> Spreadsheet Creation <b>Careers:</b> Data Analyst <b>Year 8 - Databases</b> <b>Knowledge:</b> Database Key Terms <b>Skills:</b> Database Creation <b>Careers:</b> SQL Database Administrator <b>Year 8 - Algorithms</b> <b>Knowledge:</b> Algorithms <b>Skills:</b> Flowcharts, Pseudo-code <b>Careers:</b> Data Scientist <b>Year 8 - Programming</b> <b>Knowledge:</b> Python Programming Theory <b>Skills:</b> Python Programming <b>Careers:</b> Python Programmer	<b>Year 10:</b> <b>Unit 01: Computer Systems and Unit 02: Computational Thinking, Algorithms and Programming and Programming Project</b> <b>Knowledge:</b> Systems Architecture, Memory and Storage, Computer Networks, Connections and Protocols, Network Security, Systems Software, Ethical, Legal, Cultural and Environmental Concerns. Algorithms, Boolean Logic <b>Skills:</b> Pseudo-code, Programming Techniques, Python Programming, Exam Technique <b>Careers:</b> Network Engineer, Python Programmer	<b>Year 12:</b> <b>Unit 1: Principles of Computer Science</b> <b>Knowledge:</b> Computational Thinking, Standard Methods and Techniques used to Develop Algorithms, Programming Paradigms and Types of Programming and Mark-up Languages <b>Skills:</b> Exam Technique <b>Careers:</b> Computational Scientist, Software Developer  <b>Unit 7: IT Systems Security and Encryption</b> <b>Knowledge:</b> IT Security Threats, Cryptographic Techniques and Processes <b>Skills:</b> Implement Strategies to Protect an IT System <b>Careers:</b> Cyber Security Analyst, Security Engineer	<b>Computer Science Degree:</b> Computer Science Information Systems Software Engineering Artificial Intelligence Health Informatics  <b>Advanced, Higher and Degree Apprenticeships in:</b> Business Analyst Data Analyst IT Security Analyst Network Engineer Software Engineer Information Security Software Developer	Computer Games Tester  Forensic Computer Analyst  Information Systems Manager  IT Project Manager  IT Service Engineer  Network Manager  Software Developer  Systems Analyst  Technical Architect  Web Designer  Web Developer	

Algorithms

Programming Skills

Computational Thinking

Meeting Requirements

Data Knowledge

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<p><b>Year 9 - Spreadsheets</b>  <b>Knowledge:</b> Spreadsheet Key Terms  <b>Skills:</b> Spreadsheet Creation  <b>Careers:</b> Data Analyst</p> <p><b>Year 9 - Programming</b>  <b>Knowledge:</b> Python Programming Theory  <b>Skills:</b> Python Programming  <b>Careers:</b> Python Programmer</p> <p><b>Year 9 - Web Design and Content Creation</b>  <b>Knowledge:</b> HTML, CSS, JS. Image theory.  <b>Skills:</b> HTML Coding, Image manipulation  <b>Careers:</b> Web Designer, Web Developer, Content Creator</p> <p><b>Year 9 - Ethical, Legal, Cultural and Environmental Concerns</b>  <b>Knowledge:</b> Ethical, Legal, Cultural and Environmental Concerns  <b>Skills:</b> Word Processing  <b>Careers:</b> Data Protection Officer</p> <p><b>Year 9 - User Interfaces</b>  <b>Knowledge:</b> User Interface Design  <b>Skills:</b> User Interface Creation  <b>Careers:</b> User Interface Developer</p> <p><b>Year 9 - Computing Basics</b>  <b>Knowledge:</b> Inside a Computer, Binary Theory  <b>Skills:</b> Binary  <b>Careers:</b> IT Technician</p>	<p><b>Year 11: Unit 01: Computer Systems and Unit 02: Computational Thinking, Algorithms and Programming</b>  <b>Knowledge:</b> Systems Architecture, Memory and Storage, Computer Networks, Connections and Protocols, Network Security, Systems Software, Ethical, Legal, Cultural and Environmental Concerns.  Algorithms, Boolean Logic  <b>Skills:</b> Exam Technique  <b>Careers:</b> Cloud Engineer, IT Test Engineer</p>	<p><b>Year 13:</b>  <b>Unit 2: Fundamentals of Computer Systems</b>  <b>Knowledge:</b> Hardware and Software, Computer Architecture, How Data is Represented by Computer Systems, How Data is Organised on Computer Systems, How Data is Transmitted by Computer Systems, The Use of Logic and Data Flow in Computer Systems  <b>Skills:</b> Exam Technique  <b>Careers:</b> Data Operator, Data Scientist</p> <p><b>Unit 15: Website Development</b>  <b>Knowledge:</b> Website Development Principles, Website Design Principles  <b>Skills:</b> Website Development  <b>Careers:</b> Website Designer, Website Developer</p>		
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