

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 | 2024-2025 |
|--|---|---|--|--|-----------|
| 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 | |
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| <p>Year 7 - Basic Skills Knowledge: E-Safety, Internet Searching Skills: PowerPoint Presentation, Word Processing, Desktop Publishing Year 7 - Web Page Creation Knowledge: Internet Searching Skills: HTML Coding Careers: Web Designer Year 7 - Programming Knowledge: Python Programming Theory Skills: Python Programming Careers: Programmer</p> <p>Year 8 - Spreadsheets Knowledge: Spreadsheet Key Terms Skills: Spreadsheet Creation Careers: Data Analyst Year 8 - Databases Knowledge: Database Key Terms Skills: Database Creation Careers: SQL Database Administrator Year 8 – Algorithms & Python Programming Knowledge: Algorithms/ Python Programming Theory Skills: Flowcharts, Pseudo-code/ Python Programming Careers: Data Scientist/ Python Programmer Year 8 – Inside a Computer & Binary Knowledge: Computer Hardware Skills: Binary (maths) Careers: Hardware engineer/ Computer technician</p> | <p>Year 10: Unit 01: Computer Systems and Unit 02: Computational Thinking, Algorithms and Programming and Programming Project Knowledge: Systems Architecture, Memory and Storage, Computer Networks, Connections and Protocols, Network Security, Systems Software, Ethical, Legal, Cultural and Environmental Concerns. Algorithms, Boolean Logic Skills: Pseudo-code, Programming Techniques, Python Programming, Exam Technique Careers: Network Engineer, Python Programmer</p> | <p>Year 12: Unit 1: Principles of Computer Science Knowledge: Computational Thinking, Standard Methods and Techniques used to Develop Algorithms, Programming Paradigms and Types of Programming and Mark-up Languages Skills: Exam Technique Careers: Computational Scientist, Software Developer</p> <p>Unit 7: IT Systems Security and Encryption Knowledge: IT Security Threats, Cryptographic Techniques and Processes Skills: Implement Strategies to Protect an IT System Careers: Cyber Security Analyst, Security Engineer</p> | <p>Computer Science Degree: Computer Science Information Systems Software Engineering Artificial Intelligence Health Informatics</p> <p>Advanced, Higher and Degree Apprenticeships in: Business Analyst Data Analyst IT Security Analyst Network Engineer Software Engineer Information Security Software Developer</p> | 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>Year 9 - Spreadsheets Knowledge: Spreadsheet Key Terms Skills: Spreadsheet Creation Careers: Data Analyst</p> <p>Year 9 - Programming Knowledge: Python Programming Theory Skills: Python Programming Careers: Python Programmer</p> <p>Year 9 - Web Design and Content Creation Knowledge: HTML, CSS, JS. Image theory. Skills: HTML Coding, Image manipulatin Careers: Web Designer, Web Developer, Content Creator</p> <p>Year 9 - Ethical, Legal, Cultural and Environmental Concerns Knowledge: Ethical, Legal, Cultural and Environmental Concerns Skills: Word Processing Careers: Data Protection Officer</p> <p>Year 9 - User Interfaces Knowledge: User Interface Design Skills: User Interface Creation Careers: User Interface Developer</p> <p>Year 9 - Computing Basics Knowledge: Inside a Computer, Binary Theory Skills: Binary Careers: IT Technician</p> | <p>Year 11: Unit 01: Computer Systems and Unit 02: Computational Thinking, Algorithms and Programming Knowledge: Systems Architecture, Memory and Storage, Computer Networks, Connections and Protocols, Network Security, Systems Software, Ethical, Legal, Cultural and Environmental Concerns. Algorithms, Boolean Logic Skills: Exam Technique Careers: Cloud Engineer, IT Test Engineer</p> | <p>Year 13: Unit 2: Fundamentals of Computer Systems Knowledge: 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 Skills: Exam Technique Careers: Data Operator, Data Scientist</p> <p>Unit 15: Website Development Knowledge: Website Development Principles, Website Design Principles Skills: Website Development Careers: Website Designer, Website Developer</p> | | |
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