

Key Stage 3: Year 7

Term 1	Overall Curriculum Goals: Students will study the basics of operating safety in a digital world, recognising the key components of a computer system, understanding and using flowcharts as a method of solving an algorithm, modelling data using spreadsheets, understanding how computers represent data, creating algorithms using a block based programming language													
	WC 09/09	WC 16/09	WC 23/09	WC 30/09	WC 07/10	WC 14/10	WC 21/10	WC 04/11	WC 11/11	WC 18/11	WC 25/11	WC 02/12	WC 09/12	WC 16/12
	Logging On	Online Risks (Microsoft Word)	Social Media (PowerPoint)	Cyberbullying (Publisher)	Phishing (E-mail)	Malware (Teams)	Sharing Data	Online Grooming	What is a Computer?	Inputs & Outputs	Assessment	Processing and Storage	Storage	Software
	<p align="center">Key Vocabulary/Concepts/ideas</p> <ul style="list-style-type: none"> • Username, Password, Log On, Software, Microsoft Word, PowerPoint, Publisher, Teams, E-Mail, Safety • Computer, Hardware, Software, Peripheral, CPU, RAM, ROM, Storage, Application Software, System Software 													
Term 2	WC 06/01	WC 13/01	WC 20/01	WC 27/01	WC 03/02	WC 10/02	WC 24/02	WC 03/03	WC 10/03	WC 17/03	24/03	31/03		
	Computational thinking	Sequence Input/Output	Selection/Sensors	Selection	Assessment	Pseudo Code	Formatting	Formulas	Functions	Modelling	Verification	Graphs		
	<p align="center">Key Vocabulary/Concepts/ideas</p> <ul style="list-style-type: none"> • Flowchart, Algorithm, Process, Decision, Input, Output, Sensor, Pseudocode, Sequence, Selection, Iteration • Spreadsheet, Row, Column, Cell, Cell Reference, Formatting, Formula, Function, Verification, Model 													
Term 3	WC 21/04	WC 28/04	WC 05/05	WC 12/05	WC 19/05	WC 02/06	WC 09/06	WC 16/06	WC 23/06	WC 30/06	WC 07/07	WC 14/07		
	Encoding	Binary (1-32)	Assessment	Character Sets	Images	Intro	Sequence	Iteration	Backgrounds	Storyboard	Making	Making		
	<p align="center">Key Vocabulary/Concepts/ideas</p> <ul style="list-style-type: none"> • Binary, Denary, Bit, Byte, Character Set, ASCII, UNICODE, Bitmap, Pixel, Resolution • Scratch, Sprite, Algorithm, Costume, Stage, Control Block, Sequence, Selection, Storyboard, Debugging 													
<p>Job skills and careers from term one: Cybersecurity Analyst, Ethical Hacker (Penetration Tester), Digital Forensics Analyst, Hardware Engineer, IT Support Technician, Systems Architect</p> <p>Job skills and careers from term two: Automation Engineer, Control Systems Engineer, Project Manager (IT), Data Analyst, Financial Analyst, Supply Chain Manager</p> <p>Job skills and careers from term three: Data Scientist, Database Administrator, Graphic Designer (Information Design), Software Developer, Web Developer, Game Developer</p>														

Key Stage 3: Year 8

Overall Curriculum Goals: Students will study the basics of operating safety in a digital world, recognising the key components of a computer system, understanding and using flowcharts as a method of solving an algorithm, modelling data using spreadsheets, understanding how computers represent data, creating algorithms using a block based programming language														
Term 1	WC 09/09	WC 16/09	WC 23/09	WC 30/09	WC 07/10	WC 14/10	WC 21/10	WC 04/11	WC 11/11	WC 18/11	WC 25/11	WC 02/12	WC 09/12	WC 16/12
	Mood Boards	house Style	Structure Chart	HTML	HTML	Wire Frames	Creating Product	Problem Solving	Computational Thinking	Computational Thinking	Assessment	Bubble & Insertion Sort	Linear and Binary Search	Problem Solving
	Key Vocabulary/Concepts/ideas													
	<ul style="list-style-type: none"> E-safety, Multimedia, Mind Map, House Style, Mood board, Copyright, Wire Frame, Structure Chart, Project Brief, HTML Computational Thinking, Abstraction, Decomposition, Pattern recognition, Algorithm, Bubble Sort, Insertion Sort, Linear Search, Binary Search, Resilience 													
Term 2	WC 06/01	WC 13/01	WC 20/01	WC 27/01	WC 03/02	WC 10/02	WC 24/02	WC 03/03	WC 10/03	WC 17/03	24/03	31/03		
	Software	Hardware	Networks	Network Hardware	Internet & WWW	Assessment	IPOS	Sequence	Flowcharts	Selection	Selection	Iteration		
	Key Vocabulary/Concepts/ideas													
<ul style="list-style-type: none"> Software, Hardware, Input, Output, Network, Server, Switch, Router, Internet, Web Input, Process, Output, Variable, Arithmetic, Comparison, Sequence, Selection, Iteration, Debug 														
Term 3	WC 21/04	WC 28/04	WC 05/05	WC 12/05	WC 19/05	WC 02/06	WC 09/06	WC 16/06	WC 23/06	WC 30/06	WC 07/07	WC 14/07		
	Purpose and Audience	Formatting Assets	Combining Assets	Assessment	Hyperlinks and Actions	Binary	Binary Addition	Characters	Hexadecimal	Logic Gates	Circuits	Circuits		
	Key Vocabulary/Concepts/ideas													
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<p>Job skills and careers from term one: Web Designer, UX/UI Designer, Digital Project Manager, Software Engineer, Artificial Intelligence (AI) Specialist, Data Analyst</p> <p>Job skills and careers from term two: Systems Engineer, Network Engineer, Computer Technician, Full-Stack Developer, Mobile App Developer, Game Developer</p> <p>Job skills and careers from term three: Marketing Specialist, Corporate Trainer, Business Analyst, Data Scientist, Database Architect, Mathematical Modeller</p>														

Key Stage 3: Year 9

Term 1	Overall Curriculum Goals: Students will study the basics of operating safety in a digital world, recognising the key components of a computer system, understanding and using flowcharts as a method of solving an algorithm, modelling data using spreadsheets, understanding how computers represent data, creating algorithms using a block based programming language													
	WC 09/09	WC 16/09	WC 23/09	WC 30/09	WC 07/10	WC 14/10	WC 21/10	WC 04/11	WC 11/11	WC 18/11	WC 25/11	WC 02/12	WC 09/12	WC 16/12
	Networks	Transmission Media	Topologies	Cyber Security	Threats	Protection	Assessment	Software	UX/UI	Planning	Hyperlinks	Building	Testing	Evaluation
	Key Vocabulary/Concepts/ideas													
<ul style="list-style-type: none"> - Network, LAN, WAN, Transmission, Topology, Cyber Attack, Hacking, Virus, Social Engineering, Protection - Software, User Experience, User Interface, Mind Map, Mood board, House Style, Structure Chart, Wire Frame, Testing, Networks 														
Term 2	WC 06/01	WC 13/01	WC 20/01	WC 27/01	WC 03/02	WC 10/02	WC 24/02	WC 03/03	WC 10/03	WC 17/03	24/03	31/03		
	Inputs & Output	Datatype	Flowchart	Selection	Selection	Iteration	Consolidation	Problem Solving	Assessment	Problem Solving	Real World	Real World	Real World	Real World
	Key Vocabulary/Concepts/ideas													
	<ul style="list-style-type: none"> - Python, Variable, Constant, Data Types, Selection, Sequence, Iteration, Flowchart, Syntax, Debug 													
Term 3	WC 21/04	WC 28/04	WC 05/05	WC 12/05	WC 19/05	WC 02/06	WC 09/06	WC 16/06	WC 23/06	WC 30/06	WC 07/07	WC 14/07		
	Binary	Letters and Numbers	Images	Sound	Assessment	Research Skills	Word Processing	PowerPoint	PowerPoint	Excel	Excel	Access	Access	
	Key Vocabulary/Concepts/ideas													
	<ul style="list-style-type: none"> - Binary, Denary, Hexadecimal, Character Set, ASCII, Unicode, Sampling, Amplitude, Quality, Storage - Research, Reliability, Purpose, Target Audience, Word Processing, Presentation, Slide, Spreadsheet, Formula, Database, 													
Job skills and careers from term one: Network Engineer, Cloud Solutions Architect, Cybersecurity Specialist, Product Manager (Tech), UI/UX Designer, Mobile App Developer Job skills and careers from term two: Software Developer, Data Scientist, Automation Engineer, Machine Learning Engineer Job skills and careers from term three: Data Analyst, Data Engineer, Business Intelligence Analyst, Administrative Assistant, Project Coordinator, Digital Marketing Specialist														

BTEC Diploma in IT: Year 10

Overall Curriculum Goals - developing the following Big Ideas:														
Term 1	WC 04/09	WC 11/09	WC 18/09	WC 25/09	WC 02/10	WC 09/10	WC 16/10	WC 30/10	WC 06/11	WC 13/11	WC 20/11	WC 27/11	WC 04/12	WC 11/12
	Typing Word	Image Edit PowerPoint	Spreadsheets	Input/Output Internal components	PSA Getting started practice	PSA Proposal practice PSA Gantt chart practice	PSA Storyboard practice PSA Evaluation	PSA Evaluation PSA finalise	PSA Getting started Jan25	PSA Proposal PSA Gantt chart	PSA storyboard interface designs	PSA User Interface prototype	PSA Evaluation	Task 1 recap
	Key Vocabulary/Concepts/ideas													
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Term 2	WC 06/01	WC 13/01	WC 20/01	WC 27/01	WC 03/02	WC 10/02	WC 24/02	WC 03/03	WC 10/03	WC 17/03	24/03	31/03		
	Intro to spreadsheet formatting	Formulas	Functions	If conditional formatting	Graphs	Assessment	PSA Component 2	PSA Component 2	PSA Component 2	PSA Component 2	PSA Component 2	PSA Component 2	PSA Component 2	PSA Component 2
	Key Vocabulary/Concepts/ideas													
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Term 3	WC 21/04	WC 28/04	WC 05/05	WC 12/05	WC 19/05	WC 02/06	WC 09/06	WC 16/06	WC 23/06	WC 30/06	WC 07/07	WC 14/07		
	PSA Component 2	Adhoc Network	Cloud storage Cloud technologies	Modern team working. Inclusivity and accessibility	Impacts of MT	Revision	Mock exam prep Exam technique	Mock exam prep Exam technique	Exam Questions	Assessment	Reflection & CTG	Reflection & CTG. Prep for 3b		
	Key Vocabulary/Concepts/ideas													
	Component 1: Exploring User Interface Design Principles and Project Planning techniques Component 2: Collecting, presenting and interpreting data Component 3: Effective digital working practices													

Computer Science: Year 10

Term 1	Overall Curriculum Goals: OCR Computer Science J277							
	<ul style="list-style-type: none"> • 1.1 System Architecture • 2.2 Programming Fundamentals • 1.2 Memory & Storage • 2.4 Boolean Logic • 1.3 Computer Networks, Connections and Protocols • 2.1 Algorithms • 1.6 Ethical, Legal, Cultural and Environment Impacts of Digital Technology • 1.4 Network Security • 2.5 Programming Languages and Integrated Development Environments • 1.5 Systems software 							
	WC 09/09	WC 23/09	WC 07/10	WC 21/10	WC 04/11	WC 18/11	WC 02/12	WC 16/12
	Purpose of the CPU Common CPU Components Von Neuman Architecture Fetch Decode Execute Cycle CPU Performance Embedded Systems	Inputs, Outputs & Variables Control Flow Programming Constructs (Sequence, Selection, Iteration) Flowcharts	Arithmetic Operators Comparison Operators Data Types Abstraction Decomposition Pattern Recognition Flowcharts	Flowcharts Abstraction Decomposition Pattern Recognition	Primary Storage (RAM, ROM, Virtual Memory, Cache) Secondary Storage (Optical, Magnetic, Solid State) Storage Devices	Units of Data Binary Data Storage (Binary, Denary, Hexadecimal Conversions) Binary Addition Binary Shift	Character Representation Image Representation Sound Representation File Compression	Logic Gates Truth Tables Logic Circuits
Key Vocabulary/Concepts/ideas								
1.1: Central Processing Unit (CPU), Arithmetic Logic Unit (ALU), Control Unit (CU), Cache, Clock Speed, Fetch-Decode-Execute Cycle, Registers, Buses, Von Neumann Architecture, Embedded Systems 2.2: Variable, Constant, Data Type, Operator, Sequence, Selection, Iteration, Function, Parameter, Boolean Logic 1.2: Random Access Memory (RAM), Read Only Memory (ROM), Virtual Memory, Flash Memory, Volatile, Non-Volatile, Secondary Storage, Optical Storage, Magnetic Storage, Solid State Storage 1.2: Binary, Denary (Decimal), Hexadecimal, Bit, Nibble, Byte, ASCII, Unicode, Character Set, Binary Shift								
Term 2	WC 06/01	WC 20/01	WC 03/02	WC 24/02	WC 10/03	24/03		
	Types of Networks Factors affecting network performance Client Server Network Peer to peer network Network Hardware The Internet & World Wide Web Domain Name System The Cloud	Transmission Media Topologies Wired Vs Wireless Connection Encryption IP & MAC addresses Standards in Computing Protocols Layers	Problem Solving Computational Thinking Searching Algorithms (Binary & Linear)	Sorting Algorithms (Bubble, Merge, Insertion) Trace Tables Flow Charts Pseudo Code Python Practice	Solving Algorithms Flowcharts Python Practice	Ethical Issues Legislation Cultural issues Environmental Issues Privacy		

Key Vocabulary/Concepts/ideas						
1.3: Local Area Network (LAN), Wide Area Network (WAN). Network Topology, Packet Switching, Protocol, Transmission Control Protocol/Internet Protocol (TCP/IP), Hypertext Transfer Protocol (HTTP), File Transfer Protocol (FTP), Ethernet, Wi-Fi 2.1: Algorithm, Decomposition, Abstraction, Pseudocode, Flowchart, Linear Search, Binary Search, Bubble Sort, Merge Sort, Efficiency 1.6: Data Protection Act, Computer Misuse Act, Copyright, Intellectual Property, Privacy, Cybersecurity, Environmental Impact, Digital Divide, Surveillance, Ethical Hacking						
Term 3	WC 21/04	WC 05/05	WC 19/05	WC 02/06	WC 16/06	WC 07/07
	Forms of Attack (Malware, Social Engineering, Brute Force, Denial of service, Data interception, SQL Injection) Identifying and preventing vulnerability (Penetration Testing, Anti-Malware, Firewalls User Access Levels, Password, Encryption, Physical Security)	Low Level Languages High Level Languages Translators (Compilers, Interpreters) Integrated Development Environment	Solving Algorithms Flowcharts Python Practice	Operating Systems (Multitasking, User Interface, Device Drivers, Peripheral Management, User Management, File Management, Security) Utility Software (Encryption, Defragmentation, Data Compression)	Revision Year 10 Summer Mocks	Close the Gap as a result of the Summer Mocks
	Key Vocabulary/Concepts/ideas					
1.4 Firewall, Encryption, Malware, Phishing, Social Engineering, Denial of Service (DoS) Attack, Brute Force Attack, SQL Injection, Penetration Testing, Authentication 2.5: High-Level Language, Low-Level Language, Compiler, Interpreter, Integrated Development Environment (IDE), Syntax, Semantics, Debugging, Source Code, Version Control 1.5: Operating System (OS), Utility Software, Device Driver, File Management, Resource Management, User Interface (UI), System Software, Firmware, Application Software, Virtual Machine						
Job skills and careers from term one: administrative careers, internet security roles, computer and information research scientists and graphics designers. These can be accessed Job skills and careers from term two: Computer hardware engineer, computer system analyst, computer network architect, software developer, IT project manager Job skills and careers from term three: software developer, programmer, IT project manager, graphics designer, careers in animation.						

Computer Science: Year 11

Overall Curriculum Goals: OCR Computer Science J277							
<ul style="list-style-type: none"> 2.2 Programming Fundamentals 1.3 Computer Networks, Connections and Protocols 1.4 Network Security 2.3 Producing robust programs 1.5 Systems software 1.6 Ethical, Legal, Cultural and Environment Impacts of Digital Technology 2.5 Programming Languages and Integrated Development Environments 							
WC 09/09	WC 23/09	WC 07/10	WC 14/10	WC 04/11	WC 11/11	WC 02/12	WC 09/12

Term 1	Inputs, Outputs & Variables Control Flow Programming Constructs (Sequence, Selection, Iteration)	Arithmetic Operators Comparison Operators Data Types	Abstraction Decomposition Pattern Recognition Flowcharts	Types of Networks Factors affecting network performance Client Server Network Peer to peer network Network Hardware The Internet & World Wide Web Domain Name System The Cloud	Transmission Media Topologies Wired Vs Wireless Connection Encryption IP & MAC addresses Standards in Computing Protocols Layers	Revision CAE Mocks	Closing the Gap from CAE Mocks	Forms of Attack (Malware, Social Engineering, Brute Force, Denial of service, Data interception, SQL Injection) Identifying and preventing vulnerability (Penetration Testing, Anti-Malware, Firewalls User Access Levels, Password, Encryption, Physical Security)													
	Key Vocabulary/Concepts/ideas																				
	2.2: Variable, Constant, Data Type, Operator, Sequence, Selection, Iteration, Function, Parameter, Boolean Logic 1.3: Local Area Network (LAN), Wide Area Network (WAN). Network Topology, Packet Switching, Protocol, Transmission Control Protocol/Internet Protocol (TCP/IP), Hypertext Transfer Protocol (HTTP), File Transfer Protocol (FTP), Ethernet, Wi-Fi 1.4 Firewall, Encryption, Malware, Phishing, Social Engineering, Denial of Service (DoS) Attack, Brute Force Attack, SQL Injection, Penetration Testing, Authentication																				
Term 2	WC 06/01	WC 20/01	WC 03/02	WC 24/02	WC 10/03	24/03	Defensive Design Anticipating Misuse Authentication Input Validation Code Maintainability Testing (Iterative, Final) Identifying errors Test Data Refining algorithms	Practical Programming Problem Solving Planning Building Testing	Practical Programming Problem Solving Planning Building Testing	Revision Spring Mocks	Operating Systems (Multitasking, User Interface, Device Drivers, Peripheral Management, User Management, File Management, Security) Utility Software (Encryption, Defragmentation, Data Compression)	Ethical Issues Legislation Cultural issues Environmental Issues Privacy									
	Key Vocabulary/Concepts/ideas																				
	2.2: Variable, Constant, Data Type, Operator, Sequence, Selection, Iteration, Function, Parameter, Boolean Logic 2.3: Defensive Design, Input Validation, Error Handling, Fail-Safe Defaults, Boundary Testing, Exception Handling, User Authentication, Security Measures, Robustness, Usability 1.5: Operating System (OS), Utility Software, Device Driver, File Management, Resource Management, User Interface (UI), System Software, Firmware, Application Software, Virtual Machine 1.6: Data Protection Act, Computer Misuse Act, Copyright, Intellectual Property, Privacy, Cybersecurity, Environmental Impact, Digital Divide, Surveillance, Ethical Hacking																				
	WC 21/04	WC 05/05	WC 12/05	WC 19/05	WC 02/06	WC 09/06	WC 16/06	WC 23/06	WC 30/06	WC 07/07	WC 14/07	Low Level Languages High Level Languages Translators (Compilers, Interpreters) Integrated Development Environment	Revision	Paper 1 Exam May 12th	Paper 2 Exam May 20th						
	Key Vocabulary/Concepts/ideas																				

Term 3	2.5: High-Level Language, Low-Level Language, Compiler, Interpreter, Integrated Development Environment (IDE), Syntax, Semantics, Debugging, Source Code, Version Control
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Job skills and careers from term one: administrative careers, internet security roles, computer and information research scientists and graphics designers. These can be accessed
 Job skills and careers from term two: Computer hardware engineer, computer system analyst, computer network architect, software developer, IT project manager
 Job skills and careers from term three: software developer, programmer, IT project manager, graphics designer, careers in animation.

Creative iMedia: Year 11

Term 1		Overall Curriculum Goals - developing the following Big Ideas:													
		WC 02/09	WC 11/09	WC 18/09	WC 25/09	WC 02/10	WC 09/10	WC 16/10	WC 30/10	WC 06/11	WC 13/11	WC 20/11	WC 27/11	WC 04/12	WC 11/12
	Introduction to unit R097	L1 types of IDMP & user Interfaces	Practice creation of Kiosk	Success criteria & target audience	Mind map & Mood board	Sitemap & wireframes	Planning Component parts	Test & check	Asset log & preparing assets	Image component parts	Audio visual component parts	Interactive digital media product	Mock prep	Evaluating final product & improvements & developments	
Key Vocabulary/Concepts/ideas															
-															
Term 2		WC 06/01	WC 13/01	WC 20/01	WC 27/01	WC 03/02	WC 10/02	WC 24/02	WC 03/03	WC 10/03	WC 17/03	24/03	31/03		
		1.1 Media industry sectors & products / 1.2 Job roles in the industry	2.1 How to style, content and layout are linked to the purpose. 2.2 Client requirements & how they are defined	2.3 audience demographics & segmentation, 2.4 Research methods 2.5 Media codes	2.5 Media codes	3.1 Work planning 3.2 Documents used to support ideas generation	3.3 Documents used to design & plan media products	3.3 Documents used to design & plan media products	3.3 Documents used to design & plan media products	3.3 Documents used to design & plan media products	3.4.2 Intellectual property rights 3.4.3 Regulation, certification and classification 3.4.4 Health and safety	4.1 Distribution platforms and media to reach audience 4.2.1 Image Files	4.2.2 Audio files 4.2.3 Moving Image Files 4.2.4 File compression	Exam technique	
Key Vocabulary/Concepts/ideas															
-															
Term 3		WC 21/04	WC 28/04	WC 05/05	WC 12/05	WC 19/05	WC 02/06	WC 09/06	WC 16/06	WC 23/06	WC 30/06	WC 07/07	WC 14/07		
		Exam technique	Exam technique	Class specific revision	Class specific revision	Class specific revision	Exam								
Key Vocabulary/Concepts/ideas															
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CIAG															

Careers from taking Computer science as a GCSE:

- Software developers create software programs that allow users to perform specific tasks on various devices, such as computers or mobile devices. They are responsible for the entire development, testing, and maintenance of software.
- Database administrators analyse and evaluate the data needs of users. They develop and improve the data resources used to store and retrieve critical information.
- Computer hardware engineers are responsible for designing, developing, and testing computer components, such as circuit boards, routers, and memory devices.
- Computer systems analysts assess an organization's computer systems and recommend changes to hardware and software to enhance the company's efficiency.
- Computer network architects design, implement, and maintain networking and data communication systems, including local area networks, wide area networks, extranets, and intranets. They assess the needs of organizations for data sharing and communications.
- Web developers assess the needs of users for information-based resources. They create the technical structure for websites and make sure that web pages are accessible and easily downloadable through a variety of browsers and interfaces.
- Information security analysts create systems to protect information networks and websites from cyberattacks and other security breaches. Their responsibilities also include researching trends in data security to anticipate problems and install systems to prevent issues before they occur.
- Computer and information research scientists invent technology that solves complex problems in fields like science, medicine, and business. They also find new uses for existing technology that accomplishes the same goals.
- Computer and information systems managers analyse a company's technology needs and oversee the implementation of appropriate data systems. They need to be able to evaluate software, hardware, networking, and other technology resources for purchase or development purposes.
- Project managers in the IT sector coordinate the efforts of a team of programmers/developers and analysts to complete projects. They also analyze technical problems for their company or a client organization, proposing solutions and tips to enhance productivity.

*Big Ideas taken from W Harlen "Principles and Big Ideas of Science Education" 2010