Computer Science (GCSE)

The areas of development are:	Solutions
Computer Science	
• Demonstrating a sound knowledge and understanding for the topics relating to Computer Systems: Systems Architecture	• Revise and develop your knowledge of this topic by using BBC Bitesize to study Systems Architecture • Use your CGP Revision Guide to revise and develop your knowledge of components of a Computer System using pages 1-12
• Demonstrating a sound knowledge and understanding for the topics relating to Computer Systems: Memory	• Revise and develop your knowledge of this topic by using BBC Bitesize to study Memory • Use your CGP Revision Guide to revise and develop your knowledge of Memory using page 4
• Demonstrating a sound knowledge and understanding for the topics relating to Computer Systems: Storage	• Revise and develop your knowledge of this topic by using BBC Bitesize to study Storage • Use your CGP Revision Guide to revise and develop your knowledge of System Storage using pages 5-6
• Demonstrating a sound knowledge and understanding for the topics relating to Computer Systems: Wired and Wireless networks	• Revise and develop your knowledge of this topic by using BBC Bitesize to study Wired and Wireless Networks • Use your CGP Revision Guide to revise and develop your knowledge of Wired and Wireless Networks using pages 13-14
• Demonstrating a sound knowledge and understanding for the topics relating to Computer Systems: Network Topologies, protocols and layers	• Revise and develop your knowledge of this topic by using BBC Bitesize to study Network Topologies, Protocols and Layers • Use your CGP Revision Guide to revise and develop your knowledge of Network Topologies, protocols and layers using pages 16-17

• Demonstrating a sound knowledge and understanding for the topics relating to Computer Systems: System Security	• Revise and develop your knowledge of this topic by using BBC Bitesize to study System Security • Use your CGP Revision Guide to revise and develop your knowledge of System security using page 21
• Demonstrating a sound knowledge and understanding for the topics relating to Computer Systems: System Software	• Revise and develop your knowledge of this topic by using BBC Bitesize to study System Software • Use your CGP Revision Guide to revise and develop your knowledge of System Software using pages 8-10
• Demonstrating a sound knowledge and understanding for the topics relating to Computer Systems: Ethical, Legal, Cultural and Environmental concerns	• Revise and develop your knowledge of this topic by using BBC Bitesize to study Ethical, Legal, Cultural and Environmental concerns • Use your CGP Revision Guide to revise and develop your knowledge of issues within computing using pages 25-32
• Demonstrating a sound knowledge and understanding for the topics relating to Computational thinking, algorithms and programming: Computational thinking	• Revise and develop your knowledge of this topic by using BBC Bitesize to study Computational Thinking • Use your CGP Revision Guide to revise and develop your knowledge of issues within computational thinking (algorithms) using page 33
• Demonstrating a sound knowledge and understanding for the topics relating to Computational thinking, algorithms and programming: Common Algorithms	• Revise and develop your knowledge of this topic by using BBC Bitesize to study Common Algorithms • Using your CGP Revision Guide to revise and develop your knowledge of issues within common algorithms including both pseudocode and flow diagrams using pages 34-35
• Demonstrating a sound knowledge and understanding for the topics relating to Computational thinking, algorithms and programming: Algorithm Production	• Revise and develop your knowledge of this topic by using BBC Bitesize to study Algorithm Production • Use your CGP Revision Guide to revise and develop your knowledge of issues within common algorithms including both pseudocode and flow diagrams using pages 34-35
• Demonstrating a sound knowledge and understanding for the topics relating to Computational thinking, algorithms and programming: Programming Constructs	• Revise and develop your knowledge of this topic by using BBC Bitesize to study Programming Constructs

	• Use your CGP Revision Guide to revise and develop your knowledge of issues within programing constructs focussing on Section 5 using pages 41-56
• Demonstrating a sound knowledge and understanding for the topics relating to Computational thinking, algorithms and programming: Programming Techniques	• Revise and develop your knowledge of this topic by using BBC Bitesize to study Programming Techniques • Use you CGP Revision Guide to revise and develop your knowledge of issues within programming techniques focussing on Section 5 using pages 41-65
• Demonstrating a sound knowledge and understanding for the topics relating to Computational thinking, algorithms and programming: Producing Robust programs	• Revise and develop your knowledge of this topic by using BBC Bitesize to study Producing Robust Programs • Use your CGP Revision Guide to revise and develop your knowledge of issues within programming constructs focussing on Section 5 using pages 41-56
• Demonstrating a sound knowledge and understanding for the topics relating to computational thinking, algorithms and programming: Computational logic	• Revise and develop your knowledge of this topic by using BBC Bitesize to study: Computational logic • Use you CGP Revision Guide to revise and develop your knowledge of issues within programming constructs focussing on Section 5 using pages 41-56
• Demonstrating a sound knowledge and understanding for the topics relating to Computational thinking, algorithms and programming: Translators and facilities of languages	• Revise and develop your knowledge of this topic by using BBC Bitesize to study Translators and facilities of languages • Use your CGP Revision Guide to revise and develop your knowledge of issues within Translators and facilities of languages focussing on Section 6 using pages 57-63
• Demonstrating a sound knowledge and understanding for the topics relating to Computational thinking, algorithms and programming: Data representation	• Revise and develop your knowledge of this topics by using BBC Bitesize to study Data Representation • Use your CGP Revision Guide to revise and develop your knowledge of issues within Translators and facilities of languages focussing on Section 7 using pages 64-78
• Knowing and demonstrating a range of key terminologies related to Computer Science	• CGP GCSE Business Revision Guide pages 78-82 will show you a glossary of key terms that you can learn in order to identify key Computer Science concepts

• Using exam technique to ensure that answering essay questions achieve marks that can lead to overall success in examinations	• There is some good advice available on BBC Bitesize that will support you in being able to respond to essay questions; How to Tackle Essay Style Questions
• Developing examination techniques that will support progress in GCSE Computer Science. Including how to approach the examination paper and respond to examination questions	• When approaching exam questions its best to understand technique. For OCR 9-1 GCSE Computer Science Specimen Paper ½ Walkthrough tutorials use these links to Youtube for Paper 1 and Paper 2 *Both of these tutorials will give hints and tips for learners to support them in responding to typical questions in the exam paper*
• Discussing components of a computer system, including the CPU, memory and secondary storage, and evaluating how these components affect system performance	• GCSEPod: Memory, Secondary Storage, The Central Processing Unit, Pods to watch: - -Memory: ○ RAM and ROM - Secondary Storage: ○ Types of secondary storage ○ Data capacity requirements ○ Use of secondary storage - The Central Processing Unit: ○ Purpose of a CPU ○ Fetch, Decode & Execute • GCSE OCR Computer Science revision guide: pages 1-7 • Memrise
• Describing the functions and purpose of different kinds of software, including the operating system, utilities software, open source and proprietary software	•GCSEPod: Functions of an Operating system, Pods to watch: Functions of an Operating System Functions of an Operating System 2 • GCSE OCR Computer Science revision guide: pages 8-11
• Describing the layout and structure of different types of networks, such as LANs, WANs, client-server, peer-to-peer and topologies	• GCSEPod: LANs and WANs Pods to watch: LAN and WAN ○ Network Hardware Factors that affect the performance of networks

	○ Client-server and peer-to-peer networks • GCSE OCR Revision guide: pages 14-16 • Memrise
• Understanding how data is sent across networks such as the internet and describing the role network protocols play in this process together with describing the potential security threats that networks face	• GCSEPod: LANs and WANs Pods to watch: ○ Addressing and Protocols ○ Protocols ○ Virtual Networks ○ Layers ○ Network Threats1 ○ Network Threats 2 ○ Network Security • GCSE OCR Computer Science Revision Guide: Pages 17-20 • Memrise
• Confidently discussing different issues surrounding computer science, including ethical, cultural, environmental and legal issues	• GCSEPod: Ethical and Legal Issues Pods to watch: Ethical and Legal Issue: ○ Approaching complex issues ○ Computer law • GCSE OCR Computer Science Revision guide: pages 21-31
• Discussing various search and sorting algorithms, applying those algorithms to a set of data together with confidently creating and modifying existing algorithms	• GCSEPod: Standard Algorithms Pods to watch: Standard Algorithms: ○ Bubble sort ○ Merge sort ○ Insertion sort ○ Computational thinking ○ Searching 1 • GCSE OCR Computer Science Revision guide: pages 33-39

• Applying their knowledge of basic programming components, including data types, variables, constants and strings, to a variety of tasks	• GCSEPod: Data in Algorithms Pods to watch: - Data in Algorithms: ○ Variables and constants Data types Arithmetic and logic operations ○ String operations ○ Arrays ○ Records • GCSE OCR Computer Science Revision guide: pages 41-47
• Applying their knowledge of more complex programming concepts, including Boolean operators, arrays, file handling, storing data and sub programs to a variety of tasks	• GCSEPod: Data in Algorithms Pods to watch: - Data in Algorithms: ○ Arrays • GCSE OCR Computer Science Revision guide: pages 48-55
• Explaining why a programme needs to be tested to ensure that its design is functional and defensive	• GCSEPod: Testing Pods to watch: - Testing: ○ How and why we test ○ Types of error ○ Tests and expected outcomes • GCSE OCR Computer Science Revision guide: pages 57-60
• Describing the difference between lossy and lossless compression	• Sampling • GCSE OCR Computer Science Revision guide: pages 72-75
• Describing the different translators involved in programming and the features of an integrated development environment	• GCSEPod: Program Design, Software Development Pods to watch: - Program Design: ○ Compiling and interpreting - Software Development: ○ Integrated Development Environments • GCSE OCR Computer Science Revision guide: Pages 61-62

• Understanding basic binary logic, including and gates, not gates, or gates, truth tables and Boolean algebra	• GCSE OCR Computer Science Revision guide: pages 64-65
• Confidently converting between the binary, denary and hexadecimal number systems	• GCSEPod: Numbers Pods to watch: Numbers ○ Denary to binary ○ Binary to denary ○ Adding binary ○ Denary and hexadecimal ○ Binary shifts • GCSE OCR Computer Science Revision guide: pages 66-71
• Understanding how different types of data are processed and stored by computers, including characters, images and sound	• GCSEPod: Sound Pods to watch -Sound

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