

Computer Science

(GCSE)

Welcome to the Computer Science Therapies. Please follow the links in the Therapy section below to access the resources.

| The areas for development are: | Therapy: |
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| <ul style="list-style-type: none"> discussing components of a computer system, including the CPU, memory and secondary storage, and evaluating how these components affect system performance | <ul style="list-style-type: none"> GCSEPod: GCSEPod: Memory, Secondary Storage, The Central Processing Unit Pods to watch: <ul style="list-style-type: none"> Memory: <ul style="list-style-type: none"> RAM and ROM Secondary Storage: <ul style="list-style-type: none"> Types of secondary storage Data capacity requirements Use of secondary storage The Central Processing Unit: <ul style="list-style-type: none"> Purpose of a CPU Fetch, Decode & Execute GCSE OCR Computer Science Revision Guide: Pages 1-7 Memrise link: J276 GCSE Computer Science |
| <ul style="list-style-type: none"> describing the functions and purpose of different kinds of software, including the operating system, utilities software, open source and proprietary software | <ul style="list-style-type: none"> GCSEPod: Functions of an Operating System Pods to watch: <ul style="list-style-type: none"> Functions of an Operating System: <ul style="list-style-type: none"> Functions of an Operating System Functions of an Operating System 2 GCSE OCR Computer Science Revision Guide: Pages 8-11 |
| <ul style="list-style-type: none"> describing the layout and structure of different types of networks, such as LANs, WANs, client-server, peer-to-peer and topologies | <ul style="list-style-type: none"> GCSEPod: LANs & WANs Pods to watch: <ul style="list-style-type: none"> LANs & WANs: <ul style="list-style-type: none"> LAN and WAN Network Hardware Factors that affect the performance of networks Client-server and peer-to-peer networks GCSE OCR Computer Science Revision Guide: Pages 14-16 |

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| <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Memrise link: J276 GCSE Computer Science GCSEPod: LANs & WANs Pods to watch: <ul style="list-style-type: none"> LANs & WANs: <ul style="list-style-type: none"> Addressing and Protocols Protocols Virtual Networks Layers Network Threats1 Network Threats 2 Network Security GCSE OCR Computer Science Revision Guide: Pages 17-20 Memrise link: J276 GCSE Computer Science |
| <ul style="list-style-type: none"> confidently discussing different issues surrounding computer science, including ethical, cultural, environmental and legal issues | <ul style="list-style-type: none"> GCSEPod: Ethical and Legal Issues Pods to watch: <ul style="list-style-type: none"> Ethical and Legal Issues: <ul style="list-style-type: none"> Approaching complex issues Computer law GCSE OCR Computer Science Revision Guide: Pages 21-31 |
| <ul style="list-style-type: none"> discussing various search and sorting algorithms, applying those algorithms to a set of data together with confidently creating and modifying existing algorithms | <ul style="list-style-type: none"> GCSEPod: Standard Algorithms Pods to watch: <ul style="list-style-type: none"> Standard Algorithms: <ul style="list-style-type: none"> Bubble sort Merge sort Insertion sort Computational thinking Searching 1 GCSE OCR Computer Science Revision Guide: Pages 33-39 |
| <ul style="list-style-type: none"> applying their knowledge of basic programming components, including data types, variables, constants and strings, to a variety of tasks | <ul style="list-style-type: none"> GCSEPod: Data in Algorithms Pods to watch: <ul style="list-style-type: none"> Data in Algorithms: <ul style="list-style-type: none"> Variables and constants Data types Arithmetic and logic operations String operations Arrays |

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| | <ul style="list-style-type: none"> ○ Records ● GCSE OCR Computer Science Revision Guide: Pages 41-47 |
| <ul style="list-style-type: none"> ● applying their knowledge of more complex programming concepts, including Boolean operators, arrays, file handling, storing data and sub programs to a variety of tasks | <ul style="list-style-type: none"> ● GCSEPod: Data in Algorithms Pods to watch: <ul style="list-style-type: none"> - Data in Algorithms: <ul style="list-style-type: none"> ○ Arrays ● GCSE OCR Computer Science Revision Guide: Pages 48-55 |
| <ul style="list-style-type: none"> ● explaining why a program needs to be tested to ensure that its design is functional and defensive | <ul style="list-style-type: none"> ● GCSEPod: Testing Pods to watch: <ul style="list-style-type: none"> - Testing: <ul style="list-style-type: none"> ○ How and why we test ○ Types of error ○ Tests and expected outcomes ● GCSE OCR Computer Science Revision Guide: Pages 57-60 |
| <ul style="list-style-type: none"> ● describing the different translators involved in programming and the features of an integrated development environment | <ul style="list-style-type: none"> ● GCSEPod: Program Design, Software Development Pods to watch: <ul style="list-style-type: none"> - Program Design: <ul style="list-style-type: none"> ○ Compiling and interpreting - Software Development: <ul style="list-style-type: none"> ○ Integrated Development Environments ● GCSE OCR Computer Science Revision Guide: Pages 61-62 |
| <ul style="list-style-type: none"> ● understanding basic binary logic, including and gates, not gates, or gates, truth tables and Boolean algebra | <ul style="list-style-type: none"> ● GCSE OCR Computer Science Revision Guide: Pages 64-65 |
| <ul style="list-style-type: none"> ● confidently converting between the binary, denary and hexadecimal number systems | <ul style="list-style-type: none"> ● GCSEPod: Numbers Pods to watch: <ul style="list-style-type: none"> - Numbers <ul style="list-style-type: none"> ○ Denary to binary ○ Binary to denary ○ Adding binary ○ Denary and hexadecimal ○ Binary shifts ● GCSE OCR Computer Science Revision Guide: Pages 66-71 |
| <ul style="list-style-type: none"> ● understanding how different types of data are processed and stored by computers, including characters, images and sound | <ul style="list-style-type: none"> ● GCSEPod: Sound Pods to watch: <ul style="list-style-type: none"> - Sound |

and describing the differences between lossy and lossless compression

- Sampling
- **GCSE OCR Computer Science Revision Guide: Pages 72-75**

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