

## Curriculum Plan KS4 J277 – 2021/2022

Topic	Unit 1: SYSTEMS ARCHITECTURE	
<b>Learning Objectives</b>	<p><b>At the end of this Unit all students should be able to:</b></p> <ul style="list-style-type: none"> <li>• Understand the purpose of RAM</li> <li>• List various secondary storage devices and storage media</li> <li>• Give examples of embedded systems</li> </ul> <p><b>Most students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Understand the purpose of the CPU including the fetch-execute cycle</li> <li>• Describe common CPU components and their function: ALU, CU, Cache, Registers</li> <li>• Understand the purpose of ROM</li> <li>• Be able to state the differences between RAM and ROM</li> <li>• Understand the need for primary storage</li> <li>• Understand the need for virtual memory</li> </ul>	<ul style="list-style-type: none"> <li>• Understand the need for secondary storage</li> <li>• Be able to list the common types of storage: optical, magnetic, solid state</li> <li>• Choose suitable storage devices and storage media for a given application</li> <li>• Describe the advantages and disadvantages of different storage devices and media relating to the following characteristics: capacity, speed, portability, durability, reliability, cost</li> <li>• Describe the characteristics of CPUs that affect their performance including clock speed, cache size, number of cores</li> <li>• Understand the purpose and characteristics of embedded systems</li> </ul> <p><b>Some students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Describe how virtual memory is used</li> <li>• Accurately evaluate the differences in characteristics between different devices</li> </ul> <p>Describe the Von Neumann architecture including: MAR, MDR, Program counter, accumulator</p>
<b>Skills to be Gained</b>	Primary storage and secondary storage are both covered.	
<b>Assessment</b>	<p>Homework is given for each lesson. These consist of a mixture of short, factual questions assessing knowledge in isolation and longer questions in which students are asked to analyse a situation or justify their answer to questions.</p> <p>The final assessment given assesses student's knowledge of the current unit. In the actual examination, questions may integrate various topics into one question.</p>	
<b>Prior Learning:</b>	No prior knowledge is essential with this unit. However, students should have a basic understanding of computer systems from lessons delivered as part of the Key Stage 3 national curriculum.	
<b>Numeracy/Literacy Skills</b>	Vocabulary associated with this unit, such as: Fetch-execute, CPU, ALU (Arithmetic Logic Unit), CU (control unit), cache, registers, Von Neumann architecture, MAR (Memory Address Register), MDR (Memory Data Register), Program Counter, Accumulator, clock speed, cache size, cores, embedded systems, memory address, Primary storage, RAM, ROM, virtual memory, volatile, non-volatile, secondary storage, optical, magnetic, solid state, drive, disk, hard disk, floppy disk, tape drive, Blu-ray, DVD, CD, capacity, speed, portability, durability, reliability, cost, storage device, storage media	
<b>Spec Link:</b>	The unit covers Section 1.2.1 and 1.2.2 of the OCR J277 specification for GCSE Computer Science.	

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Topic	Unit 2: Data Representation	
<b>Learning Objectives</b>	<p><b>At the end of this Unit all students should be able to:</b></p> <ul style="list-style-type: none"> <li>• Define the terms bit, byte, kilobyte, megabyte, gigabyte</li> <li>• Understand that data needs to be converted into a binary format to be processed by a computer</li> <li>• Add two 8-bit binary integers</li> <li>• Understand the term ‘character set’</li> <li>• Understand how a bitmap graphic is made up of individual pixels</li> <li>• Explain how each pixel is represented in binary</li> </ul> <p><b>Most students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Define the terms nibble, terabyte and petabyte</li> <li>• Convert positive denary whole numbers (0-255) into 8-bit binary numbers and vice versa</li> <li>• Convert positive denary whole numbers (0-255) into 2-digit hexadecimal numbers and vice versa</li> <li>• Add two 8-bit binary integers and explain overflow errors which may occur</li> <li>• Understand the use of binary shifts</li> </ul>	<ul style="list-style-type: none"> <li>• Understand the term ‘character set’</li> <li>• Explain the relationship between the number of bits per character in a character set, and the number of characters that can be represented using: <ul style="list-style-type: none"> <li>– ASCII</li> <li>– Extended ASCII</li> <li>– Unicode</li> </ul> </li> <li>• Explain the need for image metadata</li> <li>• Explain the relationship between file size and image resolution</li> <li>• Be able to represent a short sound file in binary</li> </ul> <p>Explain the trade-off between file size and the quality of playback</p> <p><b>Some students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Convert between binary, denary and hexadecimal equivalents of the same number</li> <li>• Understand that the number of bits per pixel determines the number of available colours for an image</li> <li>• Explain how sampling intervals and resolution affect the size of a sound file using the terms: <ul style="list-style-type: none"> <li>○ Sample rate</li> <li>○ Bit depth</li> </ul> </li> </ul> <p>Understand how sound is sampled and stored in digital form</p>
<b>Skills to be Gained</b>	Units and data storage are both covered.	
<b>Assessment</b>	<p>Homework is given for each lesson. These consist of a mixture of short, factual questions assessing knowledge in isolation and longer questions in which students are asked to analyse a situation or justify their answer to questions.</p> <p>The final assessment given assesses student’s knowledge of the current unit. In the actual examination, questions may integrate various topics into one question.</p>	
<b>Prior Learning:</b>	No prior knowledge is essential with this unit. However, students should have a basic understanding of computer systems from lessons delivered as part of the Key Stage 3 national curriculum.	
<b>Numeracy/Literacy Skills</b>	Vocabulary associated with this unit, such as: Bit, nibble, byte, kilo, mega, giga, tera, peta, binary, bit depth, sample rate, colour depth, pixel, bit per character, binary shift, shift left, shift right, most significant bit, least significant bit, character set, ASCII, Unicode, metadata, hertz, compression, lossy, lossless	
<b>Spec Link:</b>	The unit covers Section 1.2.3 and 1.2.4 of the OCR J277 specification for GCSE Computer Science	

## Curriculum Plan KS4 J277 – 2021/2022

Topic	Unit 3: Networks	
<b>Learning Objectives</b>	<p><b>At the end of this Unit all students should be able to:</b></p> <ul style="list-style-type: none"> <li>• Define a Wide Area Network</li> <li>• Describe the nature of the Internet as a worldwide collection of computer networks</li> <li>• Describe the difference between a Local Area Network and a Wide Area Network</li> <li>• Describe star and mesh network topologies</li> <li>• Understand wireless modes of connection, including:               <ul style="list-style-type: none"> <li>– Wi-Fi</li> <li>– Bluetooth</li> </ul> </li> <li>• Explain the need for Wireless Access Points to create wireless hotspots</li> <li>• Describe what is meant by:               <ul style="list-style-type: none"> <li>• Hosting</li> <li>• The Cloud</li> </ul> </li> <li>• Describe the factors that affect network performance</li> <li>• Describe the uses of communications protocols including:               <ul style="list-style-type: none"> <li>– HTTP</li> <li>– HTTPS</li> </ul> </li> </ul> <p><b>Most students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Explain the need for IP addressing of resources on the Internet and how this can be facilitated by the role of DNS services</li> <li>• Understand the need for Network Interface Cards and the uses of MAC addressing</li> </ul>	<ul style="list-style-type: none"> <li>• Explain packet switching</li> <li>• Describe routers and switches needed to connect stand-alone computers into a Local Area Network</li> <li>• Explain the use of Ethernet standards to transmit data over a wired network</li> <li>• Understand how encryption is used to secure data across network connections</li> <li>• Explain the role of computers in client-server and peer-to-peer networks</li> <li>• Explain the advantages and disadvantages of client-server and peer-to-peer networks</li> <li>• Explain the advantages and disadvantages of various transmission media</li> <li>• Describe the uses of communications protocols including:               <ul style="list-style-type: none"> <li>– FTP</li> <li>– POP</li> <li>– IMAP</li> <li>– SMTP</li> </ul> </li> </ul> <p><b>Some students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Explain the concept of layers in the TCP/IP protocol stack</li> <li>• Describe the uses of communications protocols including:               <ul style="list-style-type: none"> <li>– TCP/IP</li> </ul> </li> </ul>
<b>Skills to be Gained</b>	Networks and topologies, wired and wireless networks, protocols, layers are all covered.	
<b>Assessment</b>	<p>Homework is given for each lesson. These consist of a mixture of short, factual questions assessing knowledge in isolation and longer questions in which students are asked to analyse a situation or justify their answer to questions.</p> <p>The final assessment given assesses student's knowledge of the current unit. In the actual examination, questions may integrate various topics into one question.</p>	
<b>Prior Learning:</b>	No prior knowledge is essential with this unit. However, students should have a basic understanding of computer systems from lessons delivered as part of the Key Stage 3 national curriculum.	
<b>Numeracy/Literacy Skills</b>	Vocabulary associated with this unit, such as: LAN, Local Area Network, WAN, Wide Area Network, bandwidth, latency, Wireless access points, routers, switches, NIC, Network Interface Controller/Card, Transmission media, DNS, Domain Name Server, Hosting, The Cloud, Web servers and clients, star network, mesh network, topology, IP address, web server, file server, wired network, wireless network, Ethernet, Wi-Fi, Bluetooth, encryption, IP addressing, MAC addressing, TCP/IP, Transmission Control Protocol/Internet Protocol, FTP, File Transfer Protocol, POP, Post Office Protocol, IMAP, Internet Message Access Protocol, SMTP, Simple Mail Transfer Protocol, layers, IPv4, IPv6, MAC address.	
<b>Spec Link:</b>	The unit covers Section 1.3.1 and 1.3.2 of the OCR J277 specification for GCSE Computer Science	

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Topic	Unit 4: Network security & systems software	
<b>Learning Objectives</b>	<p><b>At the end of this Unit all students should be able to:</b></p> <ul style="list-style-type: none"> <li>• Understand a variety forms of attack and threats the pose at a basic level</li> <li>• Identify and understand the prevention of vulnerabilities including the use of:               <ul style="list-style-type: none"> <li>– anti-malware software</li> <li>– passwords</li> <li>– physical security</li> </ul> </li> <li>• Explain the need for the following functions of an operating system:               <ul style="list-style-type: none"> <li>– User interface</li> </ul> </li> </ul> <p><b>Most students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Understand forms of attack and threats posed to a network including:               <ul style="list-style-type: none"> <li>– Malware</li> <li>– Phishing</li> <li>– Social engineering</li> <li>– Brute force attacks</li> <li>– Data interception and theft</li> </ul> </li> <li>• Identify and understand the prevention of vulnerabilities including the use of:               <ul style="list-style-type: none"> <li>– penetration testing</li> <li>– user access levels</li> <li>– encryption</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Explain the need for the following functions of an operating system:               <ul style="list-style-type: none"> <li>– User interface</li> <li>– Memory management and multitasking</li> <li>– Peripheral management and drivers</li> <li>– User management</li> <li>– File management</li> </ul> </li> <li>• Describe the purpose and functionality of common utility software including:               <ul style="list-style-type: none"> <li>– Encryption software</li> <li>– Defragmentation software</li> </ul> </li> </ul> <p>Data compression software</p> <p><b>Some students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Understand forms of attack and threats posed to a network including:</li> <li>• Denial of service attacks</li> <li>• SQL injection</li> <li>• Identify and understand the prevention of vulnerabilities with the use of firewalls</li> </ul> <p>Explain the need for the following functions of an operating systems including memory management and multitasking</p>
<b>Skills to be Gained</b>	Threats to computer systems and networks, identifying and preventing vulnerabilities, operating systems and utility software are all covered.	
<b>Assessment</b>	Homework is given for each lesson. These consist of a mixture of short, factual questions assessing knowledge in isolation and longer questions in which students are asked to analyse a situation or justify their answer to questions. The final assessment given assesses student’s knowledge of the current unit. In the actual examination, questions may integrate various topics into one question.	
<b>Prior Learning:</b>	No prior knowledge is essential with this unit. However, students should have a basic understanding of computer systems from lessons delivered as part of the Key Stage 3 national curriculum.	
<b>Numeracy/Literacy Skills</b>	Vocabulary associated with this unit, such as: Malware, virus, Trojan horse, worm, social engineering, phishing, brute-force attack, denial of service attack, data interception and theft, SQL injection, penetration testing, anti-malware software, anti-virus software, firewalls, user access levels, passwords, encryption, physical security, operating system, user interface, graphical user interface (GUI), command line interface (CLI), memory management, multitasking, peripheral management, drivers, user management, file management, utility software, encryption software, defragmentation, data compression	
<b>Spec Link:</b>	The unit covers Section 1.4 and 1.5 of the OCR J277 specification for GCSE Computer Science	

## Curriculum Plan KS4 J277 – 2021/2022

Topic	Unit 5: Impacts of digital technology	
<b>Learning Objectives</b>	<p><b>At the end of this Learning Aim all students should be able to:</b></p> <ul style="list-style-type: none"> <li>• List ethical issues, cultural issues and environmental issues in relation to a given scenario</li> <li>• List items of legislation that relate to digital technology</li> </ul> <p><b>Most students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Discuss the impacts of digital technology on the wider society including ethical issues, cultural issues and environmental issues</li> <li>• Discuss the impact of manufacture, disposal, upgrading and replacing digital technology</li> <li>• Discuss the impact of e-waste</li> <li>• Discuss the impact of digital technology regarding legal issues and privacy issues</li> </ul>	<ul style="list-style-type: none"> <li>• Describe legislation relevant to Computer Science including               <ul style="list-style-type: none"> <li>○ The Data Protection Act 2018</li> <li>○ Computer Misuse Act 1990</li> <li>○ Copyright Designs and Patents Act 1988</li> </ul> </li> <li>• Describe the features of open source and proprietary software licences</li> </ul> <p><b>Some students will be able to:</b></p> <ul style="list-style-type: none"> <li>• List the clauses of the Data Protection Act and Computer Misuse Act and give examples of situations in which they are relevant</li> <li>• Evaluate the impact of and issues related to the use of computers in society</li> </ul>
<b>Skills to be Gained</b>	Different computer technologies and applications and the ethical, environmental and legal considerations surrounding them are described	
<b>Assessment</b>	Homework is given for each lesson. These consist of a mixture of short, factual questions assessing knowledge in isolation and longer questions in which students are asked to analyse a situation or justify their answer to questions. The final assessment given assesses student's knowledge of the current unit. In the actual examination, questions may integrate various topics into one question.	
<b>Prior Learning:</b>	No prior knowledge is essential with this unit. However, students should have a basic understanding of computer systems from lessons delivered as part of the Key Stage 3 national curriculum.	
<b>Numeracy/Literacy Skills</b>	Vocabulary associated with this unit, such as: Ethical, cultural, environmental, legislation, manufacture, disposal, upgrade, replace, e-waste, privacy, legal, data protection, computer misuse, copyright, copyright designs and patents act, open source, proprietary, software licence	
<b>Spec Link:</b>	The unit covers Section 1.5 of the OCR J277 specification for GCSE Computer Science	

## Curriculum Plan KS4 J277 – 2021/2022

Topic	Unit 6: Algorithms	
<b>Learning Objectives</b>	<p><b>At the end of this Learning Aim all students should be able to:</b></p> <ul style="list-style-type: none"> <li>• Be able to produce structure diagrams to show:               <ul style="list-style-type: none"> <li>– The structure of a problem</li> <li>– Subsections and their links to other subsections</li> </ul> </li> <li>• Understand and use different types of search               <ul style="list-style-type: none"> <li>– Linear search</li> </ul> </li> <li>• Understand arithmetic operators and variables</li> <li>• Define the data types integer, real, Boolean, character, string</li> </ul> <p><b>Most students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Understand the principles of computational thinking including               <ul style="list-style-type: none"> <li>– Abstraction</li> <li>– Decomposition</li> <li>– Algorithmic thinking</li> </ul> </li> <li>• Be able to produce structure diagrams to show:               <ul style="list-style-type: none"> <li>– The structure of a problem</li> <li>– Subsections and their links to other subsections</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Understand and use different types of search               <ul style="list-style-type: none"> <li>– Binary search</li> </ul> </li> <li>• Understand the standard sort algorithms:               <ul style="list-style-type: none"> <li>– Bubble sort</li> <li>– Insertion sort</li> <li>– Merge sort</li> </ul> </li> <li>• Be able to apply each algorithm to a data set</li> <li>• Understand flowchart symbols</li> <li>• Create, interpret, correct, complete and refine algorithms using flowcharts</li> <li>• Be able to use Boolean operators</li> <li>• Write algorithms in pseudocode involving sequence, selection and iteration</li> <li>• Understand the purpose of a given algorithm and how an algorithm works</li> <li>• Understand how to identify and correct errors in algorithms</li> <li>• Create and use of trace tables to follow an algorithm</li> </ul> <p><b>Some students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Understand the standard sort algorithms:               <ul style="list-style-type: none"> <li>– Merge sort</li> </ul> </li> <li>• Be able to identify an algorithm if given the code for it</li> <li>• Understand how to determine the correct output of an algorithm for a given set of data</li> </ul>
<b>Skills to be Gained</b>	Computational thinking, pseudocode, flowcharts, trace tables, searching algorithms and sorting algorithms are all covered in this unit.	
<b>Assessment</b>	Homework is given for each lesson. These consist of a mixture of short, factual questions assessing knowledge in isolation and longer questions in which students are asked to analyse a situation or justify their answer to questions. The final assessment given assesses students' knowledge of the current unit. In the actual examination, questions may integrate various topics into one question.	
<b>Links with Prior / Subsequent Learning</b>	No prior knowledge is essential with this unit. However, students should have a basic understanding of computer systems from lessons delivered as part of the Key Stage 3 national curriculum.	
<b>Numeracy/Literacy Skills</b>	Vocabulary associated with this unit, such as: Computational thinking, abstraction, decomposition, algorithmic thinking, inputs, processes, outputs, structure diagrams, pseudocode, flowcharts, reference language, trace tables, syntax error, logical error, algorithm, decision, terminal, sub program, process, binary search, linear search, bubble sort, merge sort, insertion sort, variables, constants, operators, assignments, sequence, selection, iteration, Boolean operators, arithmetic operators, modulus, quotient, exponentiation	
<b>Spec Link:</b>	The unit covers Section 2.1 of the OCR J277 specification for GCSE Computer Science	

## Curriculum Plan KS4 J277 – 2021/2022

Topic	Unit 7: Programming	
<b>Learning Objectives</b>	<p><b>At the end of this Learning Aim all students should be able to:</b></p> <ul style="list-style-type: none"> <li>• Understand and use data types: integer, real, Boolean, character and string</li> <li>• Declare and use constants and variables</li> <li>• Use input, output and assignment statements</li> <li>• Use random number generation</li> <li>• Write algorithms in pseudocode involving sequences</li> </ul> <p><b>Most students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Use arithmetic operators including MOD and DIV</li> <li>• Use string handling and conversion functions</li> <li>• Use selection and nested selection statements</li> <li>• Use NOT, AND and OR when creating Boolean expressions</li> <li>• Understand and use iteration in an algorithm</li> <li>• Write algorithms in pseudocode involving sequence, selection and iteration</li> <li>• Use one- and two-dimensional arrays in the design of solutions to simple problems</li> <li>• Understand the concept of subroutines</li> </ul>	<ul style="list-style-type: none"> <li>• Understand and use basic file handling operations:               <ul style="list-style-type: none"> <li>– open</li> <li>– read</li> <li>– write</li> <li>– close</li> </ul> </li> <li>• Use SQL (Structured Query Language) statements to search for data:               <ul style="list-style-type: none"> <li>– Formulate criteria involving AND, OR and LIKE</li> <li>– Use SELECT, FROM, WHERE, ORDER BY statements</li> <li>– Use the wildcard *</li> </ul> </li> <li>•</li> </ul> <p><b>Some students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Learn how to write simple procedures and functions</li> <li>• Understand and use parameters to pass data to procedures and functions</li> <li>• Know that subroutines may use local variables which are accessible only within the subroutine</li> <li>• Use local variables and explain why it is good practice to do so</li> <li>• Explain the advantages of using subroutines in programs</li> <li>• Read from and write to a text file</li> </ul>
<b>Skills to be Gained</b>	Programming fundamentals, data types and additional programming techniques are all covered in this unit	
<b>Assessment</b>	Homework is given for each lesson. These consist of a mixture of short, factual questions assessing knowledge in isolation and longer questions in which students are asked to analyse a situation or justify their answer to questions. The final assessment given assesses students' knowledge of the current unit. In the actual examination, questions may integrate various topics into one question	
<b>Prior Learning:</b>	No prior knowledge is essential with this unit. However, students should have a basic understanding of computer systems from lessons delivered as part of the Key Stage 3 national curriculum	
<b>Numeracy/Literacy Skills</b>	Vocabulary associated with this unit, such as: Variables, constants, operators, inputs, outputs, assignment, sequence, selection, iteration, arithmetic operators, Boolean operators, AND, OR, NOT, ==, !=, <, <=, >, >=, +, -, *, /, MOD, DIV, ^, exponentiation, data types, integer, real, Boolean, character, string, casting, string manipulation, file handling, open, read, write, close, records, SQL, arrays, one-dimensional array, two-dimensional array, sub program/subroutine, functions, procedures, random numbers, concatenation, slicing, SQL, SELECT, FROM, WHERE.	
<b>Spec Link:</b>	The unit covers Section 2.2 of the OCR J277 specification for GCSE Computer Science	

## Curriculum Plan KS4 J277 – 2021/2022

Topic	Unit 8: Logic & Languages	
<b>Learning Objectives</b>	<p><b>At the end of this Learning Aim all students should be able to:</b></p> <ul style="list-style-type: none"> <li>• Construct truth tables for the following logic gates:               <ul style="list-style-type: none"> <li>– NOT</li> <li>– AND</li> <li>– OR</li> </ul> </li> <li>• Understand how to make maintainable programs including:               <ul style="list-style-type: none"> <li>– Naming conventions</li> <li>– Indentation</li> </ul> </li> </ul> <p><b>Most students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Construct truth tables for simple logic circuits</li> <li>• Create, modify and interpret simple logic circuit diagrams</li> <li>• Describe defensive design considerations:               <ul style="list-style-type: none"> <li>– Input validation</li> <li>– Anticipating misuse</li> <li>– Authentication</li> </ul> </li> <li>• Understand how to make maintainable programs including:               <ul style="list-style-type: none"> <li>– Commenting</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Understand the purpose of testing including:               <ul style="list-style-type: none"> <li>– Iterative testing</li> <li>– Final/terminal testing</li> </ul> </li> <li>• Identify syntax and logic errors</li> <li>• Select and use suitable test data including:               <ul style="list-style-type: none"> <li>– Normal</li> <li>– Boundary</li> <li>– Invalid</li> <li>– Erroneous</li> </ul> </li> <li>• Understand the purpose of translators</li> <li>• Describe the characteristics of a compiler and interpreter</li> </ul> <p><b>Some students will be able to:</b></p> <ul style="list-style-type: none"> <li>• Interpret the results of truth tables</li> <li>• Understand how to make maintainable programs including:               <ul style="list-style-type: none"> <li>– The use of sub programs</li> </ul> </li> <li>• Describe the characteristics and purpose of different levels of programming language, including:               <ul style="list-style-type: none"> <li>– Low-level languages</li> <li>– High-level languages</li> </ul> </li> </ul>
<b>Skills to be Gained</b>	Producing robust programs, Boolean logic and Programming languages and Integrated Development Environments are all covered in this unit.	
<b>Assessment</b>	Homework is given for each lesson. These consist of a mixture of short, factual questions assessing knowledge in isolation and longer questions in which students are asked to analyse a situation or justify their answer to questions. The final assessment given assesses students' knowledge of the current unit. In the actual examination, questions may integrate various topics into one question	
<b>Prior Learning:</b>	Students will benefit from having studied programming concepts with a programming language prior to undertaking this unit. Students should have a basic understanding of computer systems from lessons delivered as part of the Key Stage 3 national curriculum.	
<b>Numeracy/Literacy Skills</b>	Vocabulary associated with this unit, such as: Defensive design, anticipating misuse, authentication, validation, maintainability, sub programs, naming conventions, indentation, commenting, testing, iterative testing, final/terminal testing, syntax, syntax error, logic error, test data, normal, boundary, invalid, erroneous, test plan, AND, OR, NOT, truth table, logical operators, logic gates, logic diagrams, conjunction, disjunction, negation, high-level language, low-level language, translators, compiler, interpreter, compiler, interpreter, Integrated Development Environment (IDE), editors, error diagnostics, run-time environment.	
<b>Spec Link:</b>	The unit covers Section 2.3, 2.4 and 2.5 of the OCR J277 specification for GCSE Computer Science	