

# KS4 Overview

## GCSE Computer Science (J277)

Year 10 & Year 11



Our intention is to provide a varied, challenging and engaging Computer Science & ICT curriculum, which ensures that our students of Computer Science & ICT will:

- understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- be able to evaluate and apply information technology, including new or unfamiliar technologies
- become responsible, competent, confident and creative users of information and communication technology



## Year 10 Computer Science (J277) 2022-2024 Overview – Lesson 1 of 2

Week No	Autumn Term 1 (7 weeks)	Autumn Term 2 (7 weeks)	Spring Term 1 (7 weeks)	Spring Term 2 (5 weeks)	Summer Term 1 (6 weeks)	Summer Term 2 (7 weeks)
1		<b>System Architecture:</b> 1.1 Revision & Revision Quizzes	<b>Systems Architecture:</b> 1.2.3_Units & Data Capacity	<b>Data Representation:</b> 1.2.4_Images	<b>Data Representation:</b> 1.2_End of unit Exam Questions & Reflection	<b>Computer Networks:</b> 1.3.1_Peer to Peer Networks
2	<b>System Architecture:</b> 1.1 History of the CPU	<b>System Architecture:</b> 1.1 End of unit Exam Questions & Reflection	<b>Data Representation:</b> 1.2.4_Data Storage Convert Denary/Binary	<b>Data Representation:</b> 1.2.4_Colour Depth & Resolution	<b>Computer Networks:</b> 1.3.1_Types of Network	<b>Computer Networks:</b> 1.3.1_Network Hardware
3	<b>System Architecture:</b> 1.1 Von Neumann Architecture	<b>Memory &amp; Storage:</b> 1.2 Primary Storage	<b>Data Representation:</b> 1.2.4_Binary Addition	<b>Data Representation:</b> 1.2.4_Sound	<b>10 Exam Preparation</b>	<b>Computer Networks:</b> 1.3.1_The Internet
4	<b>System Architecture:</b> 1.1 Components of the CPU	<b>Memory &amp; Storage:</b> 1.2 Virtual Memory	<b>Data Representation:</b> 1.2.4_Binary Shifts	<b>Data Representation:</b> 1.2.5_Compression	<b>10 Exam Preparation</b>	<b>WORK EXPERIENCE</b>
5	<b>System Architecture:</b> 1.1 Fetch Decode Execute Cycle	<b>Systems Architecture:</b> 1.2.1_Secondary Storage	<b>Data Representation:</b> 1.2.4_Hexadecimal/ Denary Conversion	<b>Data Representation:</b> 1.2 Revision & Revision Quizzes	<b>10 EXAMS</b>	<b>Computer Networks:</b> 1.3.1_Network Topologies
6	<b>System Architecture:</b> 1.1 Characteristics of the CPU	<b>Systems Architecture:</b> 1.2.2_Choosing Secondary Storage	<b>Data Representation:</b> 1.2.4_Binary / Hex Conversion		<b>Computer Networks:</b> 1.3.1 Network Performance	<b>Wired &amp; Wireless Networks:</b> 1.3.2_Connection Types
7	<b>System Architecture:</b> 1.1 Embedded Systems	<b>Systems Architecture:</b> 1.2.3_Binary & Data Storage	<b>Data Representation:</b> 1.2.4_Characters			<b>Wired &amp; Wireless Networks:</b> 1.3.2_IP Addresses

<https://www.ocr.org.uk/qualifications/gcse/computer-science-j277-from-2020/>



## Year 10 Computer Science (J277) 2022-2024 Overview – Lesson 2 of 2

Week No	Autumn Term 1 (7 weeks)	Autumn Term 2 (7 weeks)	Spring Term 1 (7 weeks)	Spring Term 2 (5 weeks)	Summer Term 1 (6 weeks)	Summer Term 2 (7 weeks)
1	<b>GCSE COURSE INTRODUCTION SET UP RESOURCE ACCESS</b>	<b>Designing Algorithms:</b> 2.1_Trace Tables	<b>Additional Prog Tech:</b> 2,2_ String Manipulation	<b>Sorting &amp; Searching Algorithms:</b> 2.1_Searching	<b>Defensive Design:</b> 2,3.1_Defensive Design	<b>2.3 Testing:</b> Syntax & Logic errors
2	<b>Algorithms:</b> 2.1_Principles of Computing	<b>Programming Fundamentals:</b> 2,2_Programming Fundamentals	<b>Additional Prog Tech:</b> 2,2_ File Handling	<b>Sorting &amp; Searching Algorithms:</b> 2.1_Bubble Sort	<b>Defensive Design:</b> 2,3.1_Maintainability	<b>2.3 Testing:</b> Test Data
3	<b>Algorithms:</b> 2.1_Computational Thinking	<b>Programming Fundamentals:</b> 2,2_Operators	<b>Additional Prog Tech:</b> 2,2_ Use of Records & SQL	<b>Sorting &amp; Searching Algorithms:</b> 2.1_Insertion Sort	<b>10 Exam Preparation</b>	<b>2.3 Testing:</b> Refining Algorithms
4	<b>Designing Algorithms:</b> 2.1_Inputs, Outputs, Processes	<b>Programming Fundamentals:</b> 2,2_Constants	<b>Additional Prog Tech:</b> 2,2_ Arrays	<b>Sorting &amp; Searching Algorithms:</b> 2.1_Merge Sort	<b>10 Exam Preparation</b>	<b>WORK EXPERIENCE</b>
5	<b>Designing Algorithms:</b> 2.1_Flowcharts	<b>Programming Fundamentals:</b> 2,2_Sequence & Selection	<b>Additional Prog Tech:</b> 2,2_ Functions & Procedures	<b>Sorting &amp; Searching Algorithms:</b> 2.1_Revision & Revision Quizzes End of unit Exam Questions & Reflection	<b>10 EXAMS</b>	<b>2.3 Testing:</b> 2.3_Revision & Revision Quizzes
6	<b>Designing Algorithms:</b> 2.1_Pseudocode	<b>Programming Fundamentals:</b> 2,2_ Condition Controlled Loops	<b>Additional Prog Tech:</b> 2,2_ Random Number Generation		<b>2.3 Testing:</b> Purpose of testing	<b>2.3 Testing:</b> 2.3_End of unit Exam Questions & Reflection
7		<b>Programming Fundamentals:</b> 2,2_ Count Controlled Loops	<b>Additional Prog Tech:</b> 2,2_ Revision & Revision Quizzes End of unit Exam Questions & Reflection			

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## Year 11 Computer Science (J277) 2022-2024 Overview Lesson 1 of 2

Week No	Autumn Term 1 (7 weeks)	Autumn Term 2 (7 weeks)	Spring Term 1 (6 weeks)	Spring Term 2 (5 weeks)	Summer Term 1 (6 weeks)	Summer Term 2 (7 weeks)
1	<b>Network Protocols &amp; Layers:</b> 1.3.2_Protocols	<b>Network Security:</b> 1.4.2_Prevention Methods	<b>System Software:</b> 1.5.2_Utility software	<b>COMPONENT 01 REVISION:</b> Past Paper Questions / Sample Papers Etc...	<b>COMPONENT 01 REVISION:</b> Past Paper Questions / Sample Papers Etc...	
2	<b>Network Protocols &amp; Layers:</b> 1.3.2_Layers/Packets	<b>Network Security:</b> 1.4 Revision & Revision Quizzes	<b>System Software:</b> 1.5_End of unit Exam Questions & Reflection			
3	<b>Networks:</b> 1.3 Revision & Revision Quizzes	<b>Network Security:</b> 1.4_End of unit Exam Questions & Reflection	<b>Issues:</b> 1.6_Environmental & Cultural			
4	<b>Networks:</b> 1.3_End of unit Exam Questions & Reflection	Mock Exam Preparation	<b>Issues:</b> 1.6_Copyright			
5	<b>Network Security:</b> 1.4.1_Malware	<b>Yr.11 Mock Exams</b>	<b>Issues:</b> 1.6 Revision & Revision Quizzes			
6	<b>Network Security:</b> 1.4.1_Social_Engineering	<b>Yr.11 Mock Exams</b>	<b>Issues:</b> 1.6_End of unit Exam Questions & Reflection			
7	<b>Network Security:</b> 1.4.1_Hacking	<b>System Software:</b> 1.5.1_Operating Systems				

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Week No	Autumn Term 1 (7 weeks)	Autumn Term 2 (7 weeks)	Spring Term 1 (6 weeks)	Spring Term 2 (5 weeks)	Summer Term 1 (6 weeks)	Summer Term 2 (7 weeks)
1	2.4 Boolean Logic Lesson 1: Logic Gates	2.5 Languages & IDE's Revision PPTs & Quizzes	System Software: 1.5.Revision & Revision Questions	COMPONENT 02 REVISION: Past Paper Questions / Sample Papers Etc...	COMPONENT 02 REVISION: Past Paper Questions / Sample Papers Etc...	YR 11 EXAMS
2	2.4 Boolean Logic Lesson 2: Truth Tables	2.5 Languages & IDE's End of Unit Questions	Issues: 1.6_Ethical & Legal			YR 11 EXAMS
3	2.4 Boolean Logic Lesson 3: Logic Statements	Mock Exam Preparation	Issues: 1.6_Privacy			YR 11 EXAMS
4	2.4 Boolean Logic Revision PPTs & Quizzes	Mock Exam Preparation	Issues: 1.6_Computer_Misuse			
5	2.4 Boolean Logic End of Unit Questions	Yr.11 Mock Exams	Issues: 1.6_ Data_Protection			
6	2.5 Languages & IDE's Programming Languages	Yr.11 Mock Exams			YR 11 EXAMS	
7	2.5 Languages & IDE's IDE's	System Software: 1.5.1_Operating Systems				

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