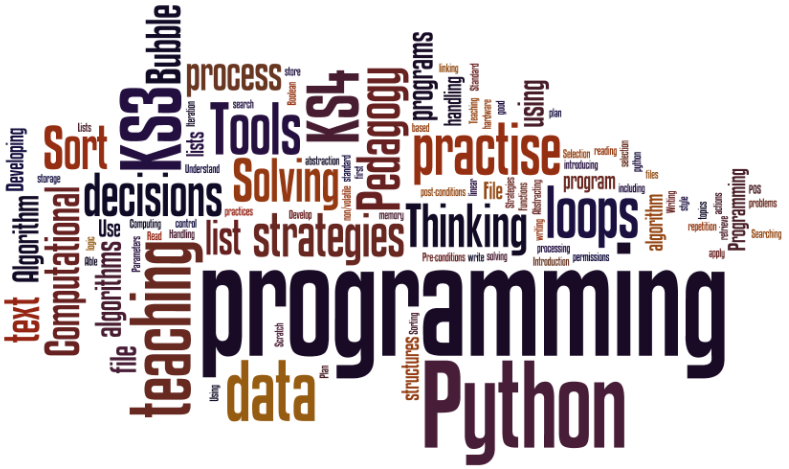
KS4 Overview

Computer Science (J277) 2023-2025

Year 10 Scheme



Our <u>intention</u> 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) 2023-2025 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		**System Architecture:** 1.1 Revision & Revision Quizzes	**Systems Architecture:** 1.2.3_Units & Data Capacity	**Data Representation:** 1.2.4_Images	**Data Representation:** 1.2_End of unit Exam Questions & Reflection	**Computer Networks:** 1.3.1_Peer to Peer Networks
2	**System Architecture:** 1.1 History of the CPU	**System Architecture:** 1.1 End of unit Exam Questions & Reflection	**Data Representation:** 1.2..4_Data Storage Convert Denary/Binary	**Data Representation:** 1.2.4_Colour Depth & Resolution	**Computer Networks:** 1.3.1_Types of Network	**Computer Networks:** 1,3.1_Network Hardware
3	**System Architecture:** 1.1 Von Neumann Architecture	**Memory & Storage:** 1.2 Primary Storage	**Data Representation:** 1.2.4_Binary Addition	**Data Representation:** 1.2.4_Sound	**10 Exam Preparation**	**Computer Networks:** 1.3.1_The Internet
4	**System Architecture:** 1.1 Components of the CPU	**Memory & Storage:** 1.2 Virtual Memory	**Data Representation:** 1.2.4_Binary Shifts	**Data Representation:** 1.2.5_Compression	**10 Exam Preparation**	**WORK EXPERIENCE**
5	**System Architecture:** 1.1 Fetch Decode Execute Cycle	**Systems Architecture:** 1.2.1_Secondary Storage	**Data Representation:** 1.2.4_Hexadecimal/ Denary Conversion	**Data Representation:** 1.2 Revision & Revision Quizzes	**10 EXAMS**	**Computer Networks:** 1,3.1_Network Topologies
6	**System Architecture:** 1.1 Characteristics of the CPU	**Systems Architecture:** 1.2.2_Choosing Secondary Storage	**Data Representation:** 1.2.4_Binary / Hex Conversion		**Computer Networks:** 1.3.1 Network Performance	**Wired & Wireless Networks:** 1.3.2_Connection Types
7	**System Architecture:** 1.1 Embedded Systems	**Systems Architecture:** 1.2.3_Binary & Data Storage	**Data Representation:** 1.2.4_Characters			**Wired & Wireless Networks:** 1.3.2_IP Addresses

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Year 10 Computer Science (J277) 2023-2025 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	**GCSE COURSE INTRODUCTION SET UP RESOURCE ACCESS**	**Designing Algorithms:** 2.1_Trace Tables	**Additional Prog Tech:** 2,2_ String Manipulation	**Sorting & Searching Algorithms:** 2.1_Searching	**Defensive Design:** 2,3.1_Defensive Design	**2.3 Testing:** Syntax & Logic errors
2	**Algorithms:** 2.1_Principles of Computing	**Programming Fundamentals:** 2,2_Programming Fundamentals	**Additional Prog Tech:** 2,2_ File Handling	**Sorting & Searching Algorithms:** 2.1_Bubble Sort	**Defensive Design:** 2,3.1_Maintainability	**2.3 Testing:** Test Data
3	**Algorithms:** 2.1_Compuational Thinking	**Programming Fundamentals:** 2,2_Operators	**Additional Prog Tech:** 2,2_ Use of Records & SQL	**Sorting & Searching Algorithms:** 2.1_Insertion Sort	**10 Exam Preparation**	**2.3 Testing:** Refining Algorithms
4	**Designing Algorithms:** 2.1_Inputs, Outputs, Processes	**Programming Fundamentals:** 2,2_Constants	**Additional Prog Tech:** 2,2_ Arrays	**Sorting & Searching Algorithms:** 2.1_Merge Sort	**10 Exam Preparation**	**WORK EXPERIENCE**
5	**Designing Algorithms:** 2.1_Flowcharts	**Programming Fundamentals:** 2,2_Sequence & Selection	**Additional Prog Tech:** 2,2_ Functions & Procedures	**Sorting & Searching Algorithms:** 2.1_Revision & Revision Quizzes End of unit Exam Questions & Reflection	**10 EXAMS**	**2.3 Testing:** 2.3_Revision & Revision Quizzes
6	**Designing Algorithms:** 2.1_Pseudocode	**Programming Fundamentals:** 2,2_ Condition Controlled Loops	**Additional Prog Tech:** 2,2_ Random Number Generation		**2.3 Testing:** Purpose of testing	**2.3 Testing:** 2.3_End of unit Exam Questions & Reflection
7		**Programming Fundamentals:** 2,2_ Count Controlled Loops	**Additional Prog Tech:** 2.2_ Revision & Revision Quizzes End of unit Exam Questions & Reflection			

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