# OCR 9-1 J277 GCSE Computer Science - Year 10 - Learning Journey 2024-2025

| Week | Date | Key Construct | Topic | Assessment |
|---|---|---|---|---|
| 1 (Thurs) | 05.09.24 | **1-1-1 Architecture of CPU** | What a computer is, hardware and software, peripherals. Von Neumann Architecture: Components of a computer system and the parts inside a CPU. The stored-program concept and the Fetch-Decode-Execute cycle. | Unit Test A: Architecture and Systems A01 A02 |
| 2 | 09.09.24 | | | |
| 3 | 16.09.24 | **1-1-2 CPU Performance** | Clock speed, number of cores, cache. | |
| 4 | 23.09.24 | **1-1-3 Embedded Systems** | What embedded systems are, where they are used, typical components. | |
| 5 | 30.09.24 | **1-2-4 Data Storage** | Numbers: Binary integers. Adding binary, shifting binary, overflow. Conversions between denary, binary and hexadecimal. Characters: Symbols, character codes and character sets. Bitmap images: pixels, colour-depth, quality, resolution. Sound: samples, sample-rate, bit-depth, bit-rate, quality, file-sizes. | Unit Test B: Representing Data A01 A02 |
| 6 | 07.10.24 | | | |
| 7 | 14.10.24 | | | |
| 8 | 21.10.24 | | | |
| **Half term** | | | | |
| 9 | 04.11.24 | **1-2-3 Units of Data Storage** | Bits, Nibbles, Bytes, KB, MB, GB, TB, PB, conversion between units. | Unit Test C: Storing Data A01 A02 |
| 10 | 11.11.24 | **1-2-5 Data Storage: Compression** | The need for compression, lossy compression vs loss-less compression. | |
| 11 | 18.11.24 | **1-2-1 Primary Storage (Memory)** | Differences between RAM and ROM. Purposes of each. Virtual memory. | |
| 12 | 25.11.24 | | | |
| 13 | 02.12.24 | **1-2-2 Secondary Storage** | Data Drop Primary vs Secondary storage. Need for Secondary storage. Types of storage (magnetic, solid-state, optical) and devices (HDD, SSD, CD) Characteristics of storage devices: capacity, reliability, portability etc. | |
| 14 | 09.12.24 | | | |
| 15 | 16.12.24 | | | |
| **CHRISTMAS** | | | | |
| 16 | 06.01.25 | **1-3-1 Networks and Topologies** | LANs and WANs, Client-Server and Peer-to-Peer. Performance of networks. Network hardware: Wireless access points, routers, switches, NICs, transmission media e.g. twisted pair, coax cables, Wi-Fi. The Internet. Packets of data and routes across the internet. The Cloud. Hosting, web servers and clients. Domain Name System. | Unit Test D: Networks and Protocols A01 A02 |
| 17 | 13.01.25 | | | |
| 18 | 20.01.25 | | | |
| 19 | 27.01.25 | | | |
| 20 | 03.01.25 | **1-3-2 Wi-Fi and Wired Networks, Protocols & Layers** | Star and Mesh topologies. IP and MAC addressing. Standards, protocols and layers. Modes of connection: Ethernet, Wi-Fi and Bluetooth. Encryption. | |
| 21 | 10.02.25 | | | |
| **Half term** | | | | |
| 22 | 24.02.25 | **2-1-1 Computational Thinking and Algorithms** | Computational thinking: abstraction, decomposition and algorithmic thinking. Identifying inputs, process and outputs for a problem. Structure diagrams. | Unit Test E: Algorithms, Flow-Charts and Pseudo-Code A01 A02 A03 |
| 23 | 03.02.25 | | | |
| 24 | 10.03.25 | **2-1-2 Designing, Creating and Refining Algorithms** | Flow-chart symbols. Tracing the path of execution through flow-charts. Pseudo-code: what it is and how it relates to real programming languages. Identifying common errors in code. Using trace-tables. **Data Drop and Contingency lesson.** | |
| 25 | 17.03.25 | | | |
| 26 | 24.03.25 | | | |
| 27 | 31.03.25 | | | |
| **EASTER** | | | | |
| 28 (BH) | 21.04.25 | **2-4-1 Boolean Logic and Computational Operations** | Boolean operations: AND, OR, NOT. Truth tables. Combining operations together. Logic diagrams and logical expressions. ^ (exponentiation) , MOD (modulo), DIV (division), shifting, overflow. | Unit Test F: Logic and Operations A01 A02 A03 |
| 29 | 28.04.25 | | | |
| 30 (BH) | 06.05.25 | | | |
| 31 | 12.05.25 | **2-2-1 Programming Fundamentals** | Data-types, variables and constants, casting. Flow of control in a program: Sequence, Assignment, Selection, Iteration. Working with 1D and 2D arrays. Generating random numbers. Sub-programs: Procedures and functions. Arguments and return values. | Unit Test G: Programming Techniques A01 A02 A03 |
| 32 | 19.05.25 | | | |
| **Half term** | | | | |
| 33 | 02.06.25 | **2-2-1 Programming Fundamentals (continued)** | Creating, opening and closing files. Reading and writing data. Records. | |
| 34 | 09.06.25 | **Exam Preparation** | | |
| 35 | 16.06.25 | **Annual Exams** | | |
| 36 | 23.06.25 | **Annual Exams** | | |
| 37 | 30.07.25 | | | |
| 38 | 07.07.25 | **Data Drop in Books** | | |
| 39 | 14.07.25 | **WORK EXPERIENCE** | | |

# OCR 9-1 J277 GCSE Computer Science - Year 10 - Assessment Progress Tracker 2024-25

| Name: | | | | Autumn | Spring | Summer |
|---|---|---|---|---|---|---|
| **Subject Target** | | **Flightpath** | | | | |
| **Annual Exam Grade:** | | **BFL** | | | | |

| Date | Assessment | Flight-path Grade | Comments / How to Improve |
|---|---|---|---|
| **Autumn Term** Part 1 | Unit Test A: Architecture and Systems A01 A02 | | |
| | Unit Test B: Representing Data A01 A02 | | |
| **Autumn Term** Part 2 | Unit Test C: Storing Data A01 A02 | | |
| **Spring Term** Part 1 | Unit Test D: Networks and Protocols A01 A02 | | |
| **Spring Term** Part 2 | Unit Test E: Algorithms, Flow-Charts and Pseudo-Code A01 A02 A03 | | |
| **Summer Term** Part 1 | Unit Test F: Logic and Operations A01 A02 A03 | | |
| | Unit Test G: Programming Techniques A01 A02 A03 | | |
| **Summer Term** Part 2 | YEAR 10 ANNUAL EXAM | | |