Course Title: Computer Science	Exam Board: OCR	Specification Code:J277

How will students be assessed?
Unit 1: Computer Systems - Written Exam, 50%
Unit 2: Computational thinking, algorithms and programming - Written Exam, 50%

KEY CONTENT

Half Term 1
Recap of Year 10, Careers and Opportunities
1.1.1 Architecture of the CPU - The purpose of the CPU, Common CPU components and their function, Von Neumann architecture
1.1.2 CPU performance - How common characteristics of CPUs affect their performance: Clock speed, Cache size, Number of cores
1.1.3 Embedded systems - The purpose and characteristics of embedded systems, Examples of embedded systems
1.2.1 Primary storage (Memory) - The need for primary storage, The difference between RAM and ROM, The purpose of ROM in a computer system, The purpose of RAM in a computer system, Virtual memory

Half Term 2
1.2.2 Secondary storage - The need for secondary storage, Common types of storage, Suitable storage devices and storage media for a given application, The advantages and disadvantages of different storage devices and storage media relating to these characteristics
1.3.1 Networks and topologies - Types of network, Factors that affect the performance of networks, The different roles of computers in a client-server and a peer-to peer network, The hardware needed to connect stand-alone computers into a Local Area Network, The Internet as a worldwide collection of computer network, Star and Mesh network topologies
1.3.2 Wired and wireless networks, protocols and layers - Modes of connection, Encryption, IP addressing and MAC addressing, Standards, Common protocols, The concept of layers
Revision and preparation for Mock Exams

Half Term 3
1.2.3 Units - The units of data storage, How data needs to be converted into a binary format to be processed by a computer, Data capacity and calculation of data capacity requirements
1.2.4 Data storage - Numbers, Characters, Images, Sound
1.2.5 Compression - The need for compression, Types of compression
1.4.1 Threats to computer systems and networks - Forms of attack

1.4.2 Identifying and preventing vulnerabilities - Common prevention methods
Half Term 4 **1.5.1 Operating systems** - The purpose and functionality of operating systems **1.5.2 Utility software** - The purpose and functionality of utility software, Utility system software **1.6.1 Ethical, legal, cultural and environmental impact** - Impacts of digital technology on wider society, Legislation relevant to Computer Science
Half Term 5 Revision & Exam Technique in preparation for Exams