



KS4 Long Term Plan

Subject: Computer Science

Exam Board: OCR J277

Curriculum Statement of Intent

Computer science KS4 builds on the skills and knowledge of KS3. The exam board is OCR. By the end of two years we intend all students to have strong content knowledge and be equipped with the necessary skills needed to succeed in their exams. The department aims to encourage all students to develop an interest in computing and to work in a confident and independent manner. We strive to equip students with the practical and theoretical skills necessary to flourish in the world of work. The department achieves this through providing a supportive learning environment and challenging all students to be the best that they can be.

Curriculum Statement of Implementation

We will achieve the above mentioned intend by:

- Having engaging lessons, creating a love for the subject.
- Ensuring pupil progress in every lesson, no student should be left behind.
- Covering curriculum content and making sure students have sound, in-depth knowledge.
- Mapping every lesson to curriculum content.
- Promoting independent activities / tasks to help students become independent learners.
- Students completing and reflecting on their PLCs every half term.
- Working online and teacher marking their progress using showbie.
- Regular formative tests to check student knowledge.
- Summative assessments every half term to recap / test learning.

	Autumn 1		Autumn 2		Spring 1	
Yr. 11	Topics		Topics		Topics	
	1.1.1 Architecture of the CPU (interleaving)		1.6.1 Ethical, legal, cultural and environmental impact (interleaving)		1.4.1 Threats to computer systems and networks (interleaving)	
	1.1.2 CPU performance (interleaving)		2.1.1 Computational thinking (interleaving)		1.4.2 Identifying and preventing vulnerabilities (interleaving)	
	1.1.3 Embedded systems (interleaving)		2.3.1 Defensive design		1.3.2 Wired and wireless networks, protocols and layers (interleaving)	
	1.2.5 Compression		2.3.2 Testing		1.2.4 Data storage (interleaving)	
	1.6.1 Ethical, legal, cultural and environmental impact		1.5.2 Utility software		1.2.1 Primary storage (Memory) (interleaving)	
	2.1.2 Designing, creating and refining algorithms (interleaving)		1.5.1 Operating systems (interleaving)		1.2.2 Secondary storage (interleaving)	
	2.1.3 Searching and sorting algorithms		1.3.1 Networks and topologies (interleaving)		1.2.3 Units (interleaving)	
	2.2.1 Programming fundamentals(interleaving)		1.2.4 Data storage (interleaving)			
	2.2.2 Data types(interleaving)					
	2.2.3 Additional programming techniques (interleaving)					
Assessments	MOCKS		Class tests		Class tests	-

	Spring 2		Summer 1	Summer 2
Yr. 11	Topics		Exams	Exam season
	2.4.1 Boolean logic (revision)			
	2.5.1 Languages (revision)			
	2.5.2 The Integrated Development Environment (IDE) (revision)			
	Revision based on QLA			
	Revision			
	Exam prep			
Assessments	PPE			

	Autumn 1	Autumn 2	Spring 1
Yr. 10	<p>Topics</p> <p>1.1.1 Intro to Von Neumann architecture</p> <p>Program Counter Accumulator ALU (Arithmetic Logic Unit) CU (Control Unit) Cache Registers, MAR, MDR The purpose of the CPU: The fetch-execute cycle</p> <p>1.1.2 CPU performance 1.1.3 Embedded systems</p> <p>2.1.1 Computational thinking 2.1.3 Searching and sorting algorithms 2.2.1 Programming fundamentals</p> <p>2.2.1 Programming fundamentals 2.2.2 Data types 2.1.2 Designing, creating and refining algorithms</p>	<p>Topics</p> <p>2.2.3 Additional programming techniques 2.2.3 Additional programming techniques</p> <p>1.2.1 Primary storage (Memory) 1.2.2 Secondary storage 1.2.3 Units</p> <p>1.2.2 Secondary storage 1.2.4 Data storage - Numbers 1.2.4 Data storage- Numbers</p>	<p>Topics</p> <p>1.2.4 Data storage - Images 1.2.4 Data storage – Sound 1.2.4 Data storage – Characters 1.2.5 Compression 2.4.1 Boolean logic 1.3.1 Networks and topologies 1.3.1 Networks and topologies</p>
Assessments	Class Assessment Half termly Assessment	Class tests Half termly Assessment	Class tests Half termly Assessment -

	Spring 2	Summer 1	Summer 2
Yr. 10	Topics 1.3.2 Wired and wireless networks, protocols and layers 1.3.2 Wired and wireless networks, protocols and layers Class Assessment 1.4.1 Threats to computer systems and networks 1.4.1 Threats to computer systems and networks 1.4.2 Identifying and preventing vulnerabilities 1.4.2 Identifying and preventing vulnerabilities	Topics 2.3.1 Defensive design 2.3.1 Defensive design 2.3.2 Testing 2.3.2 Testing 2.5.1 Languages	Topics 2.5.2 The Integrated Development Environment (IDE) d. Practical Programming Tasks 2.1, 2.2, 2.3 1.2.4 Data storage (interleaving) 1.2 – Memory and storage (interleaving) 1.1– Systems architecture (interleaving)
Assessments	Class tests Half termly Assessment	Class tests Year 10 Exams	Class tests Half termly Assessment