



# **KS4 Long Term Plan**

**Subject: Computer Science Yr10/11**

**Exam Board OCR**

**2021-2022**

## **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 Term Year 10				Autumn Term Year 11		
Week 1	2.4.1 Boolean logic	2.4.1 Boolean Logic	2.4.1 Boolean logic	1.4.1 Threats to computer systems and networks	2.3.1 Defensive design	1.4.1 Threats to computer systems and networks
Week 2	2.4.1 Boolean logic	1.2.3 Units	Interleaving /test	1.4.1 Threats to computer systems and networks	2.3.1 Defensive design	Interleaving / test
Week 3	1.2.4 Data storage - Numbers	1.2.4 Data storage - Numbers	1.2.4 Data storage - Numbers	1.4.2 Identifying and preventing vulnerabilities	2.3.1 Defensive design	1.4.2 Identifying and preventing vulnerabilities
Week 4	1.2.4 Data storage - Numbers	1.2.4 Data storage - Numbers	Interleaving /test	1.5.1 Operating systems	2.3.1 Defensive design	Interleaving / test
Week 5	1.2.4 Data storage - Characters	2.1.1 Computational thinking	2.1.1 Computational thinking	1.5.1 Operating systems	2.3.1 Defensive design	1.5.1 Operating systems
Week 6	1.2.4 Data storage - Characters	Practical Programming	Interleaving/ test	2.3.2 Testing	2.3.2 Testing	Interleaving / test
Autumn term 2 Year 10				Autumn term 2 Year 11		
Week 7	1.2.4 Data storage - Images	2.1.2 Designing, creating and refining algorithms	2.1.2 Designing, creating and refining algorithms	1.5.2 Utility software	2.3.2 Testing	1.5.2 Utility software
Week 8	1.2.4 Data storage - Images	2.1.2 Designing, creating and refining algorithms	Interleaving / test	1.5.2 Utility software	2.3.2 Testing	Interleaving / test

Week 9	1.2.4 Data storage - Sound	2.1.2 Designing, creating and refining algorithms	2.1.2 Designing, creating and refining algorithms		1.6.1 Ethical, legal, cultural and environmental impact	2.5.1 Languages	1.6.1 Ethical, legal, cultural and environmental impact
Week 10	1.2.4 Data storage - Sound	2.1.2 Designing, creating and refining algorithms	Interleaving / test		1.6.1 Ethical, legal, cultural and environmental impact	2.5.1 Languages	Interleaving / test
Week 11	1.2.5 Data storage - Compression	2.1.2 Designing, creating and refining algorithms	2.1.2 Designing, creating and refining algorithms		1.6.1 Ethical, legal, cultural and environmental impact	2.5.2 The Integrated Development Environment (IDE)	1.6.1 Ethical, legal, cultural and environmental impact
Week 12	1.2.5 Data storage - Compression	Practical Programming	Interleaving / test		1.6.1 Ethical, legal, cultural and environmental impact	2.5.2 The Integrated Development Environment (IDE)	Interleaving / test
<b>Spring Term Year 10</b>					<b>Spring Term Year 11</b>		
Week 1	1.1.1 Architecture of the CPU	2.2.1 Programming fundamentals	2.2.1 Programming fundamentals		Programming Revision	Programming Revision	Programming Revision
Week 2	1.1.1 Architecture of the CPU	2.2.2 Data types	Interleaving / test		Programming Revision	2.1.3 Searching and sorting algorithms	Interleaving / test
Week 3	1.1.1 Architecture of the CPU	2.2.2 Data types	2.2.2 Data types		2.1.3 Searching and sorting algorithms	2.1.3 Searching and sorting algorithms	2.1.3 Searching and sorting algorithms
Week 4	1.1.1 Architecture of the CPU	2.2.2 Data types	Interleaving / test		Searching and Sorting Practical Programming skills	Searching and Sorting Practical Programming skills	Interleaving / test
Week 5	1.1.1 Architecture of the CPU	2.2.1 Programming fundamentals	2.2.1 Programming fundamentals		Searching and Sorting Practical Programming skills	Searching and Sorting Practical Programming skills	Searching and Sorting Practical Programming skills

Week 6	1.1.2 CPU Performance	1.1.2 CPU Performance	Interleaving / test		Searching and Sorting Practical Programming skills	Searching and Sorting Practical Programming skills	Interleaving / test
<b>Spring 2 year 10</b>				<b>Spring 2 year 11</b>			
Week 7	1.1.3 Embedded systems	2.2.1 Programming fundamentals	2.2.1 Programming fundamentals		Mocks	Mocks	Mocks
Week 8	1.1.3 Embedded systems	2.2.1 Programming fundamentals	Interleaving / test		Theory Revision	Practical Programming Skills Revision	Interleaving / test
Week 9	1.2.1 Primary storage (Memory)	2.2.3 Additional programming techniques	2.2.3 Additional programming techniques		Theory Revision	Practical Programming Skills Revision	Theory Revision
Week 10	1.2.1 Primary storage (Memory)	2.2.3 Additional programming techniques	Interleaving / test		Theory Revision	Practical Programming Skills Revision	Interleaving / test
Week 11	1.2.2 Secondary storage	2.2.3 Additional programming techniques	2.2.3 Additional programming techniques		Theory Revision	Practical Programming Skills Revision	Theory Revision
Week 12	1.2.2 Secondary storage	2.2.3 Additional programming techniques	Interleaving / test		Theory Revision	Practical Programming Skills Revision	Interleaving / test
<b>Summer 1 year 10</b>				<b>Summer 1 year 11</b>			
Week 1	1.2.2 Secondary storage	2.2.3 Additional programming techniques	2.2.3 Additional programming techniques		Theory Revision	Practical Programming Skills Revision	Theory Revision
Week 2	1.2.2 Secondary storage	Practical Programming Skills	Interleaving / test		Theory Revision	Practical Programming Skills Revision	Interleaving / test

Week 3	1.2.2 Secondary storage	Practical Programming Skills	Practical Programming Skills		Theory Revision	Practical Programming Skills Revision	Theory Revision
Week 4	1.3.1 Networks and topologies	Practical Programming Skills	Interleaving / test		Theory Revision	Practical Programming Skills Revision	Revision
Week 5	1.3.1 Networks and topologies	Practical Programming Skills	Practical Programming Skills		Theory Revision	Theory Revision	Theory Revision
Week 6	1.3.1 Networks and topologies	Practical Programming Skills	Interleaving / test		Theory Revision	Theory Revision	Theory Revision
<b>Summer 2 year 10</b>							
Week 7	1.3.1 Networks and topologies	1.3.1 Networks and topologies	1.3.1 Networks and topologies		<b>Exams</b>		
Week 8	1.3.1 Networks and topologies	1.3.1 Networks and topologies	Interleaving / test				
Week 9	1.3.2 Wired and wireless networks, protocols and layers	1.3.2 Wired and wireless networks, protocols and layers	1.3.2 Wired and wireless networks, protocols and layers				
Week 10	1.3.2 Wired and wireless networks, protocols and layers	1.3.2 Wired and wireless networks, protocols and layers	Interleaving / test				

Week 11	1.3.2 Wired and wireless networks, protocols and layers	1.3.2 Wired and wireless networks, protocols and layers	1.3.2 Wired and wireless networks, protocols and layers
Week 12	Revision	Revision	Revision