



# **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. We follow the computer science national curriculum; our 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 excellence in computing and to work in a confident and independent manner. The department achieves this through providing a supportive learning environment and encouraging all students to be the best that they can be. We prepare our students to achieve outstanding result underpinned by our mission statement of achieving excellence. We try to ensure that Students should be able to advance further to A level computer science.

## **Curriculum Statement of Implementation**

We will achieve the above mentioned intend by:

- Ensuring pupil progress in every lesson.
- No student should be left behind, support educational journey of all students (including SEN, EHCP) in safe and secure environment
- Covering curriculum content and making sure students have sound knowledge.
- Mapping every lesson to curriculum content. Students knowing the learning journey and the big picture.
- Promoting independent activities / tasks to help students become independent learners.
- Ensuring our students can articulate in the digital world knowing the pros and cons of technology in modern world.
- Working online and teacher marking their progress using Showbie. Students always have access to their work and can see their progress.
- Regular AFL in lessons to check student knowledge.
- Summative assessments to recap / test learning.

	Autumn 1		Autumn 2		Spring 1	
<b>Yr. 11</b>	<b>Topics</b> <ul style="list-style-type: none"> <li>• 2.1 Algorithms</li> <li>• 2.2 Programming fundamentals</li> <li>• 2.3 Producing robust programs</li> </ul>		<b>Topics</b> <ul style="list-style-type: none"> <li>• 2.3 Producing robust programs</li> <li>• 1.1 Systems architecture</li> <li>• 1.2 Memory and storage</li> </ul>		<b>Topics</b> <ul style="list-style-type: none"> <li>2.5 Programming languages and IDE <ul style="list-style-type: none"> <li>• 1.3 Computer networks, connections and protocols</li> <li>• 1.4 Network security</li> </ul> </li> </ul>	
<b>Assessments</b>	<b>MOCKS</b>		<b>Class tests</b>			-

	Spring 2		Summer 1		Summer 2	
<b>Yr. 11</b>	<b>Topics</b> Revision Exam prep		<b>Revision</b>  <b>Exams</b>		Exam season	
<b>Assessments</b>	<b>PPE</b>					

	<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>
<b>Yr. 10</b>	<b>Topics</b> 1.1.1 Intro to Von Neumann architecture 1.1.2 CPU performance 2.1.1 Computational thinking 2.2.1 Programming fundamentals 2.2.2 Data types	<b>Topics</b> <ul style="list-style-type: none"> <li>• 1.2.1 Primary storage (Memory)</li> <li>• 1.2.3 Units</li> <li>• 1.2.2 Secondary storage</li> <li>• 2.1.2 Designing, creating and refining algorithms</li> </ul>	<b>Topics</b> <ul style="list-style-type: none"> <li>• 1.2.4 Data storage - Numbers</li> <li>• 1.2.4 Data storage - Images</li> <li>• 1.2.4 Data storage – Sound</li> <li>• 1.2.4 Data storage – Characters</li> <li>• Programming(interleaving)</li> </ul>
<b>Assessments</b>	<b>Class Assessment Half termly Assessment</b>	<b>Class tests Half termly Assessment</b>	<b>Class tests Half termly Assessment -</b>

	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
<b>Yr. 10</b>	<b>Topics</b> <ul style="list-style-type: none"> <li>• 1.2.5 Compression</li> <li>• 2.4.1 Boolean logic</li> <li>• 1.1.3 Embedded systems</li> <li>• 2.2.3 Additional programming techniques</li> </ul>	<b>Topics</b> <ul style="list-style-type: none"> <li>• 2.3.1 Defensive design</li> <li>• 2.3.2 Testing</li> <li>• 2.5.1 Languages</li> <li>• 2.5.2 The Integrated Development Environment (IDE)</li> </ul>	<b>Topics</b> <ul style="list-style-type: none"> <li>• 1.3.1 Networks and topologies</li> <li>• 1.3.2 Wired and wireless networks, protocols, and layers</li> <li>• 2.1.3 Searching and sorting algorithms</li> <li>• 2.2.3 Additional programming techniques</li> <li>• 2.3.1 Defensive design</li> </ul>
<b>Assessments</b>	<b>Class tests Half termly Assessment</b>	<b>Class tests Year 10 Exams</b>	<b>Class tests Half termly Assessment</b>