Subject Curriculum Map: Computer Science Year 11 2024-25

Exam board: OCR – 100% Terminal Examination

Curriculum intent:

Year 11 Computer Science will be the culmination of the course. The content will further build upon their understanding of the specification and exam writing skills and technique to ensure that the pupil has a well-rounded understanding of all of the topics on the specification but also ensure they have developed the key skills required to be successful when implementing this knowledge in the real world. As mentioned in the other maps, these key skills of; problem solving, analysis and thinking both abstractly and logically will be at the forefront of the curriculum.

Curriculum Implementation-

Like the other years, the course is delivered as 5 fortnightly lessons. Students will be completing practice exam questions both in class and at home. The last few, more difficult topics will also be covered. These topics have been kept until year 11 as they are the ones that require the most background knowledge of the rest of the topics and can use their existing understanding to then use these topics to link their understanding together. Teachers will continue to use a wide range of teaching techniques, strategies and differentiation in order to aid students to develop their independence, resilience and verbal skills as well as the more standard skill set of reading and writing.

Curriculum impact: Students will understand and apply the fundamental principles and concepts of Computer Science, including abstraction, decomposition, and logic, algorithms, and data representation. They will analyse problems in computational terms through practical experience of solving such problems, including designing, writing and applying mathematical skills relevant to Computer Science. Students will also understand the components that make up digital systems, and how they communicate with one another and with other systems. The curriculum will also allow the students to understand the impacts of digital technology to the individual and to wider society.

Year 11 Computer Science	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Themes, Concepts & Ideas	Revisit the topic - Von Neumann Architecture. Factors that affect the performance of the CPU Advanced programming techniques, improving robustness of programs and inclusion of validation. Testing Testing in project. Final hand-in of project	Computational thinking. Revisiting Searching and sorting algorithms, including the pseudocode. Networking- revisiting threats and methods of prevention. Exam preparation and technique building for various types of questions and contexts. Mock preparation.	Networking protocols and topologies. Writing algorithms, theory and practical practise. Exam preparation and technique building for various types of questions and contexts.	Algorithm theory and practical practise. File handling Arrays Exam preparation and technique building for various types of questions and contexts.	Revision of topics. Differentiation used to focus on the weaker skills for each group of students. Exam preparation and technique building for various types of questions and contexts.	Study Leave / Exams
Knowledge and understanding	See below	See below	See below	See below	See Below	Study Leave / Exams
Subject specific skills	Inner workings of the components of a CPU. To be able to explain what happens at each stage of the F-D-E cycle. Ensure programs include validation.	How a network is constructed and maintained. Focusing on network hardware Completing the stages of the sorts and searches. To identify and explain the pseudocode for each. Compare the pros and cons of each.	Understanding the differences between and the advantages and disadvantages of the various networking protocols. Higher ability to understand the concept of layers. Highest ability to understand how these layers and protocols work	Application of algorithmic thinking and the different types of testing. Practise long answer questions.	Students to revisit and revise through key terminology and concepts from all topics, focusing on their weaker ones as identified through the past-exam work.	Study Leave / Exams

			together alongside the other various computing theory and components			
1.SMSC	Spiritual and Social: How different would the world be if the Von Neumann architecture did not work or catch on?	Social: Looking into failed computer systems and how the lack of robustness caused them to fail	Moral: Self-assessment of their own coded solutions.	Cultural and social: Looking into how these protocols help with network security and the potential issues society would face if these protocols were not in place.	Moral: Students to assess areas of weakness.	Study Leave / Exams
2.Skills For life	Application of problem solving. Evaluative skills in which to learn from for if similar problems occur in the future.	Analytical skills and ability to break down a task into smaller tasks to help reduce stress, improving resilience and problem-solving potential.	Understanding the importance of protocols/rules both in computer science but also applying this to rules in society. Creation of analogies in order to better understand and reflect.	Looking at a problem from different angles to help ensure it is solved correctly with no errors.	Self-reflection and assessment into where they need to improve.	Study Leave / Exams
3. FBV	Build resilience and patience skills	Be able to apply networking principles in order to be fair to all.	Understand the use of network security within the rule of law	Support others through their revision and respect each other when undertaking revision	Support others through their revision and respect each other when undertaking revision	Study Leave / Exams
Stretch & challenge	Higher ability students will be able to apply all programming techniques and	Longer exam answers are banded to allow for differentiation	Looking at exam technique and understanding	Mentioned above.	Students able to choose which areas to cover and focus on.	Study Leave / Exams

	ensure their problems are fully validated to any erroneous data entered.		the importance of layers.			
Key assessment focus, suggested assessments	**Computer Architecture assessment**	**Preparation for mock assessment**	**Spring 1 assessment**	**In class mock for both papers- 50 mins each**	**Peer and self-assessments**	**Study Leave / Exams**
Special events						
Visits/extra-curricular	**Chess club Coding/homework club**	**Chess club Coding/homework club**	**Chess club Revision sessions, lunch and after school**	**Chess club Revision sessions, lunch and after school**	**Chess club Revision sessions, lunch and after school**	
Homework/Independent Learning	**Past-paper questions- revision for assessment**	**Past-paper questions- revision for mocks**	**Independent revision on individual weaker areas. Algorithm practise.**	**Revision and past-paper questions**	**Revision and past-paper questions**	