**Year 13 Curriculum Overview**

**Rationale: The Year 13 curriculum is designed to give the students the skills necessary to analyse problems in computational terms through practical experience of solving such problems (including writing programs to do so), to think creatively, innovatively, analytically, logically and critically and to to see relationships between different aspects of computer science.  Students will be expected to analyse, design, develop, test, evaluate and document a program written in a suitable programming language. The underlying approach to the project is to apply the principles of computational thinking to a practical coding problem. Students are expected to apply appropriate principles from an agile development approach to the project development.**

| Term/Length of Time | Outline | Assessment/Teacher Feedback Opportunities | Homework and Literacy resources |
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| Autumn 1 | **Programming Project (NEA)**<br><br>Students will be required to undertake an independent programming project of their choice and will use this half term to complete several tasks including their problem identification, who the stakeholders will be, carry out research on existing similar problems, create a specification for their proposed solution, provide a decomposed solution, describe the way in which their problem will be solved, provide evidence of a testing strategy and begin to develop a coded solution using an iterative approach. | Recall/Revision activities set via Smart Revise on prior knowledge. Verification of student tracker following project deadlines. | **Minimum homework expectation - to be set on G4S**<br>Completion of the analysis and description of their project problem with evidence of some coding of the solution within their project write up template.<br>Mock Exam Revision Tasks<br><br>**Optional homework tasks and Literacy resources**<br><br>Watch an episode of BBC Click on the BBC iPlayer<br><br>Additional Reading for Budding Computer Scientists: Choose a book from this recommended reading list<br><br>Complete some 'Quiz, Terms and Advance' questions using your Smart Revise platform login<br><br>Access the Physics and Maths Tutor Computer Science revision section and complete revision tasks/activities on the topics covered plus access the past papers section and complete additional exam questions on topics covered (**pages are sometimes slow to load … be patient!**)<br><br>Access W3Schools and learn a new Python programming technique |

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| Autumn 2 | **Programming Project (NEA)**<br><br>Students will be required to undertake an independent programming project of their choice and will use this half term to complete several tasks to finalise their coded solution using an iterative approach. Students will be expected to complete the coded element including testing (both during and post development), evaluate the success of their solution and provide details of ongoing maintenance and/or improvements. | Recall/Revision activities set via Smart Revise on prior knowledge. Verification of student tracker following project deadlines.<br>Mock Examination | **Minimum homework expectation - to be set on G4S**<br>Completion of the coded solution of their project problem with evidence of testing and evaluation within their project write up template.<br><br>**Optional homework tasks and Literacy resources**<br><br>Watch an episode of BBC Click on the BBC iPlayer<br><br>Additional Reading for Budding Computer Scientists: Choose a book from this recommended reading list<br><br>Complete some 'Quiz, Terms and Advance' questions using your Smart Revise platform login<br><br>Access the Physics and Maths Tutor Computer Science revision section and complete revision tasks/activities on the topics covered plus access the past papers section and complete additional exam questions on topics covered (**pages are sometimes slow to load ... be patient!**)<br><br>Access W3Schools and learn a new Python programming technique |
| Spring 1 | **Revision**<br>There will be an opportunity for students to revisit, embed and recap learning from Year 12 on components of a computer and their uses, types of software and the different methodologies used to develop software how data is exchanged between different systems and understand what is meant by computational thinking. | Sample examination questions at the end of each sub-topic completed as part of classwork. Formal end of topic assessments that include a mixture of open and closed questions with an additional focus on keywords/literacy. Completion of a set of Cornell Notes on the theory topics covered. | **Minimum homework expectation - to be set on G4S**<br>Completion of six 30-minute revision/recall activities using an online platform called 'Smart Revise' that is bespoke for OCR A Level Computer Science.<br><br>An additional 3 hours using the Computer Science Text Book:<br>Read Sections 9 (Chapters 44-46) and 12 (Chapters 59-64).<br>Complete the exercises on pages 248, 254, 258, 333, 339, 344, 350, 357 and 362-363<br><br>**Optional homework tasks and Literacy resources**<br>Creation of revision resource (e.g. mind map) to be submitted alongside compulsory activity |

| | | Mock examination. | Watch an episode of BBC Click on the BBC iPlayer |
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| | Students will also be expected to further their knowledge of programming in order to better answer exam style programming questions. | | Additional Reading for Budding Computer Scientists: Choose a book from this recommended reading list |
| | | | Complete some 'Quiz, Terms and Advance' questions using your Smart Revise platform login |
| | | | Access the Physics and Maths Tutor Computer Science revision section and complete revision tasks/activities on the topics covered plus access the past papers section and complete additional exam questions on topics covered (**pages are sometimes slow to load … be patient!**) |
| | | | Access W3Schools and learn a new Python programming technique |
| Spring 2 | **Revision**<br>There will be an opportunity for students to revisit, embed and recap learning from Year 12 and Year 13 on how data is represented and stored within different structures, the different algorithms that can be applied to these structures, the use of algorithms to describe problems including standard algorithms and the legal, moral, cultural and ethical issues surrounding computer science.<br><br>Students will also be expected to further their knowledge of programming in order to better | Formal end of topic assessments that include a mixture of open and closed exam style questions with an additional focus on keywords/literacy.<br>A selection of written exam style questions completed in class to assess understanding of programming | **Minimum homework expectation - to be set on G4S**<br>Completion of six 30-minute revision/recall activities using an online platform called 'Smart Revise' that is bespoke for OCR A Level Computer Science.<br><br>An additional 3 hours of revision with evidence produced.<br><br>**Optional homework tasks and Literacy resources**<br><br>Watch an episode of BBC Click on the BBC iPlayer<br><br>Additional Reading for Budding Computer Scientists: Choose a book from this recommended reading list<br><br>Complete some 'Quiz, Terms and Advance' questions using your Smart Revise platform login |

| | | | Access the Physics and Maths Tutor Computer Science revision section and complete revision tasks/activities on the topics covered plus access the past papers section and complete additional exam questions on topics covered (**pages are sometimes slow to load … be patient!**)<br><br>Access W3Schools and learn a new Python programming technique |
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| Summer 1 | **Revision**<br>There will be an opportunity for students to revisit all aspects of A Level Computer Science using a set of bespoke revision resources aimed at specific individualised learning.<br><br>Students will also be expected to further their knowledge of programming in order to better answer exam style programming questions. | Formal end of topic assessments that include a mixture of open and closed exam style questions with an additional focus on keywords/literacy.<br>A selection of written exam style questions completed in class to assess understanding of programming | **Minimum homework expectation - to be set on G4S**<br>Completion of six 30-minute revision/recall activities using an online platform called 'Smart Revise' that is bespoke for OCR A Level Computer Science.<br><br>An additional 3 hours of revision with evidence produced.<br><br>**Optional homework tasks and Literacy resources**<br><br>Watch an episode of BBC Click on the BBC iPlayer<br><br>Additional Reading for Budding Computer Scientists: Choose a book from this recommended reading list<br><br>Complete some 'Quiz, Terms and Advance' questions using your Smart Revise platform login<br><br>Access the Physics and Maths Tutor Computer Science revision section and complete revision tasks/activities on the topics covered plus access the past papers section and complete additional exam questions on topics covered (**pages are sometimes slow to load … be patient!**)<br><br>Access W3Schools and learn a new Python programming technique |
| Summer 2 | Final Exams | Final Exams | Final Exams |