Year 11 Curriculum Overview

Rationale: The Year 11 curriculum is designed to re-introduce students to topics for prior learning and recall with the overriding aim of preparing them for their final examinations. Students will revisit Year 9 and Year 10 topics including storage, data representation, networks, system security, operating systems, ethical, legal and cultural concerns, robust program design, Boolean logic and translators. Students will also be given the opportunity to continue to undertake a range of programming tasks that will allow them to develop their skills in interpreting algorithms with the aim to design, write, test and refine programs using a high-level programming language.

Term/Length of Time	Outline	Assessment/Teacher Feedback Opportunities	Homework and Literacy resources
Autumn 1	**Computational Thinking** Students will develop their understanding of the principles of abstraction, decomposition and algorithmic thinking, write or refine algorithms using the techniques learnt, how to identify syntax/logic errors in code and suggest fixes and create and use trace tables to follow an algorithm. Students will also deepen their understanding of the standard searching algorithms (Binary and Linear) and the standard sorting algorithms (Bubble, Merge and Insertion). **Practical Programming** Students will recap and revisit programming concepts developed in Year 10 before moving onto creating programs in Python using 1D and 2D Arrays/Lists.	A series of knowledge based questions 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 Revision notes. A selection of programming challenges completed in class to assess understanding of programming techniques.	**Minimum homework expectation - to be set on G4S** Completion of three (two theory + one programming) 30-minute revision/recall activities using an online platform called Smart Revise which is bespoke for OCR GCSE Computer Science. **Optional homework tasks and Literacy resources** Creation of revision resource (e.g. mind map) to be submitted alongside compulsory activity Access BBC Bitesize and research more into this topic area Complete additional lessons on this topic from Oak National Academy Develop your coding and work through some interactive python lessons/challenges from LGfL Work through one or more challenges from 'An Algorithm A Day' to improve your ability to interpret written problems and write coded solutions read for the examination. Complete some recall questions using your Revise: CSUK and/or Smart Revise platform login. Watch an episode of BBC Click on the BBC iPlayer

			Additional Reading for Budding Computer Scientists: Choose a book from this recommended reading list some of which you may find in the department or the library Choose another computing language to learn from W3Schools
Autumn 2	**Searching/Sorting Algorithms** Students will deepen their understanding of the standard searching algorithms (Binary and Linear) and the standard sorting algorithms (Bubble, Merge and Insertion). **Practical Programming** Students will develop their ability and understanding of Functions, Procedures and Parameter Passing using Python. **Written Examination Question Technique - Programming** Students start to improve their ability to answer programming exam questions on Inputs, Outputs, Variables, Casting and Arithmetic.	A series of knowledge based questions 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 and how to approach the longer high mark questions. Completion of a set of Cornell Revision notes. A selection of programming challenges completed in class to assess understanding of programming techniques. Mock examinations will take place for a more formal assessment setting.	**Minimum homework expectation - to be set on G4S** Completion of three (two theory + one programming) 30-minute revision/recall activities using an online platform called Smart Revise which is bespoke for OCR GCSE Computer Science. **Optional homework tasks and Literacy resources** Creation of revision resource (e.g. mind map) to be submitted alongside compulsory activity Access BBC Bitesize and research more into this topic area Complete additional lessons on this topic from Oak National Academy Develop your coding and work through some interactive python lessons/challenges from LGfL Work through one or more challenges from 'An Algorithm A Day' to improve your ability to interpret written problems and write coded solutions read for the examination. Complete some recall questions using your Revise: CSUK and/or Smart Revise platform login. Watch an episode of BBC Click on the BBC iPlayer

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Spring 1	**Defensive Programming Design** Students will develop their understanding of how to deal with invalid data in a program, authentication to confirm the identity of a user, input validation and an understanding of why commenting is useful. In addition, students will look back at testing techniques including test tables. **Boolean Logic** Students will deepen their understanding and knowledge of simple logic diagrams and truth tables; they will use these skills to combine Boolean operators to create logic circuits. **Written Examination Question Technique - Programming** Students start to improve their ability to answer programming exam questions on Selection, Iteration and String Manipulation.	A series of knowledge based questions 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 Revision notes. A selection of programming challenges completed in class to assess understanding of programming techniques.	**Minimum homework expectation - to be set on G4S** Completion of three (two theory + one programming) 30-minute revision/recall activities using an online platform called Smart Revise which is bespoke for OCR GCSE Computer Science. **Optional homework tasks and Literacy resources** Creation of revision resource (e.g. mind map) to be submitted alongside compulsory activity Access BBC Bitesize and research more into this topic area Complete additional lessons on this topic from Oak National Academy Develop your coding and work through some interactive python lessons/challenges from LGfL Work through one or more challenges from 'An Algorithm A Day' to improve your ability to interpret written problems and write coded solutions read for the examination. Complete some recall questions using your Revise: CSUK and/or Smart Revise platform login. Watch an episode of BBC Click on the BBC iPlayer

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Spring 2	**Translators and IDE's** Students will develop their understanding of the characteristics and purpose of high-level and low-level languages and the role and purpose of translators, compilers and interpreters when executing programs. **Written Examination Question Technique - Programming** Students start to improve their ability to answer programming questions on Functions, Procedures, Parameter Passing, 1d Arrays, 2D Arrays and File Handling. **Exam Preparation** Students will complete a series of exam questions covering elements from Paper 1 and Paper 2 using a bespoke revision guide	A series of knowledge based questions 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 Revision notes. A selection of programming challenges completed in class to assess understanding of programming techniques.	**Minimum homework expectation - to be set on G4S** Completion of three (two theory + one programming) 30-minute revision/recall activities using an online platform called Smart Revise which is bespoke for OCR GCSE Computer Science. **Optional homework tasks and Literacy resources** Creation of revision resource (e.g. mind map) to be submitted alongside compulsory activity Access BBC Bitesize and research more into this topic area Complete additional lessons on this topic from Oak National Academy Develop your coding and work through some interactive python lessons/challenges from LGfL Work through one or more challenges from 'An Algorithm A Day' to improve your ability to interpret written problems and write coded solutions read for the examination. Complete some recall questions using your Revise: CSUK and/or Smart Revise platform login. Watch an episode of BBC Click on the BBC iPlayer

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Summer 1	**Exam Preparation** Students will complete a series of exam questions covering elements from Paper 1 and Paper 2 using a bespoke revision guide.	A series of knowledge based questions 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 Revision notes. A selection of programming challenges completed in class to assess understanding of programming techniques.	**Minimum homework expectation - to be set on G4S** Completion of three (two theory + one programming) 30-minute revision/recall activities using an online platform called Smart Revise which is bespoke for OCR GCSE Computer Science. **Optional homework tasks and Literacy resources** Creation of revision resource (e.g. mind map) to be submitted alongside compulsory activity Access BBC Bitesize and research more into this topic area Complete additional lessons on this topic from Oak National Academy Develop your coding and work through some interactive python lessons/challenges from LGfL Work through one or more challenges from 'An Algorithm A Day' to improve your ability to interpret written problems and write coded solutions read for the examination. Complete some recall questions using your Revise: CSUK and/or Smart Revise platform login. Watch an episode of BBC Click on the BBC iPlayer

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