KS4 Computer Science (LTP) – YEAR 11

Term	Module Title	Learning Content / Skills	Assessment Schedule*	Home Learning Support
Autumn 1	Unit 6 Algorithms	This unit begins by looking at computational thinking, including abstraction and decomposition. Practical experience of writing, tracing, and modelling algorithms using pseudocode and flowcharts is provided. These skills are subsequently used to interpret and compare relevant searching and sorting algorithms including the merge and insertion sorts. Students will also be given ample practical experience of correcting and completing algorithms (including debugging and testing) in worksheets and homework. The following topics are covered: • Topic 1 Computational thinking • Topic 2 Searching algorithms • Topic 3 Sorting algorithms • Topic 4 Flowcharts • Topic 5 Pseudocode • Topic 6 Interpreting, correcting, and completing algorithms	Students will be assessed at the end of each topic to demonstrate understanding. At the end of the unit a formal assessment will be given determining in more depth the students understanding the whole unit. Peer assessment is done regularly with end of lesson assessments to help the students understand clearly what is required for the exam by using mark schemes. Reflection time will be given to students to work on their targets which will allow for improvements in their grades on work which has already been marked.	All presentations, tasks and worksheets are on Firefly which allows students to revisit any topics covered in this unit. Students also have access to the Cambridge GCSE MOOC website which provides videos and resources to help reinforce the students understanding of the topics. The link for this website can be found on the Computing section of Firefly.
Autumn 2	Unit 7 Programming	This unit begins by looking at the fundamentals of programming, it includes data types, constants and variables, input, output and assignment statements, arithmetic operators, and string handling. Experience of reading, interpreting, and creating programs is provided, using pseudocode and flowcharts. These skills are needed to create programs which use	Students will be assessed at the end of each topic to demonstrate understanding. At the end of the unit a formal assessment will be given determining in more depth the students understanding the whole unit.	All presentations, tasks and worksheets are on Firefly which allows students to revisit any topics covered in this unit.

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		sequence & selection, iteration, arrays and procedures and functions. Students will also be given ample practical experience of correcting, completing, and writing algorithms (including debugging and testing) in worksheets and homework. The following topics are covered: • Topic 1 Programming fundamentals • Topic 2 Sequence and Selection • Topic 3 Iteration • Topic 4 Arrays • Topic 5 Procedures & Functions • Topic 6 Records & Files • Topic 7 Introduction to SQL Students will be completing mini programming tasks during this half term. This will not be in a controlled environment, but instead will provide students with exposure of programming and creating specific programs to complete tasks.	Peer assessment is done regularly with end of lesson assessments to help the students understand clearly what is required for the exam by using mark schemes. Reflection time will be given to students to work on their targets which will allow for improvements in their grades on work which has already been marked. Students will be assessed on their programming for each of the tasks completed. Their programming skill will demonstrate their understanding.	Students also have access to the Cambridge GCSE MOOC website which provides videos and resources to help reinforce the students understanding of the topics. The link for this website can be found on the Computing section of Firefly. Students should continue to practice their Python skills using tutorials outside of lesson.
Spring 1	Unit 8 Logic and Languages	Unit 8 This unit begins with a lesson on Boolean logic diagrams and truth tables. Following this, students will cover translators and the facilities of languages. Testing and error handling is covered using practical examples, including the use of the common tools and functions of an IDE. The unit concludes by looking at programming language classifications including translators and low-level languages. A test is provided	Students will be assessed at the end of each topic to demonstrate understanding. At the end of the unit a formal assessment will be given determining in more depth the students understanding the whole unit.	All presentations, tasks and worksheets are on Firefly which allows students to revisit any topics covered in this unit. Students also have access to the Cambridge GCSE

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		with GCSE style questions to assess understanding across all lessons in the unit. The following topics are covered: • Topic 1 Logic diagrams and truth tables • Topic 2 Defensive Design • Topic 3 Errors and Testing • Topic 4 Translators and facilities of languages	Peer assessment is done regularly with end of lesson assessments to help the students understand clearly what is required for the exam by using mark schemes. Reflection time will be given to students to work on their targets which will allow for improvements in their grades on work which has already been marked.	MOOC website which provides videos and resources to help reinforce the students understanding of the topics. The link for this website can be found on the Computing section of Firefly.
Spring 2	Revision	Students will then be preparing for their exams in lesson. Past papers, mark schemes, repetitive spaced memory techniques will all be covered.	Students will be assessed at the end of each topic to demonstrate understanding. At the end of the unit a formal assessment will be given determining in more depth the students understanding the whole unit. Peer assessment is done regularly with end of lesson assessments to help the students understand clearly what is required for the exam by using mark schemes. Reflection time will be given to students to work on their targets which will allow for improvements	All presentations, tasks and worksheets are on Firefly which allows students to revisit any topics covered in this unit. Students also have access to the Cambridge GCSE MOOC website which provides videos and resources to help reinforce the students understanding of the topics. The link for this website can be found on the Computing section of Firefly.

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			in their grades on work which has already been marked.	
Summer 1	Revision	Students will continue to prepare for their June exams. Past papers, mark schemes, repetitive spaced memory techniques will all be covered.	In class Walking talking mocks as well as closed book mocks will take place. Peer marking will be used in some cases to aid with the understanding of the exam paper and how the examiner will be marking their papers.	Revision techniques such as past papers, flash cards and repetitive spaced memory techniques. Students also have access to the Cambridge GCSE MOOC website which provides videos and resources to help reinforce the students understanding of the topics. The link for this website can be found on the Computing section of Firefly.
Summer 2	Revision	Paper One Exam Paper Two Exam Students will continue to prepare for their June exams. Past papers, mark schemes, repetitive spaced memory techniques will all be covered.	In class Walking talking mocks as well as closed book mocks will take place. Peer marking will be used in some cases to aid with the understanding of the exam paper and how the examiner will be marking their papers.	Revision techniques such as past papers, flash cards and repetitive spaced memory techniques. Students also have access to the Cambridge GCSE MOOC website which provides videos and

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				resources to help reinforce the students understanding of the topics. The link for this website can be found on the Computing section of Firefly.