



Year 11 Computer Science Curriculum Map				
Half Term	Autumn 1	Autumn 2	Spring 1	Spring 2
Big Themes	Computational thinking, algorithms and programming. Students will look at different algorithms and how to create programs for a specific scenario.	Computational thinking, algorithms and programming. Students will complete a programming project to put into practice skills they have learnt from unit 2.	Computational thinking, algorithms and programming. Students will look into how to build robust programs.	Computational thinking, algorithms and programming. Students will look at different programming languages, how translators and compilers are used as well as different development environments.
Knowledge and skills covered	<ul style="list-style-type: none"> To create, interpret, correct, complete, and refine algorithms using: pseudocode, flowcharts, reference language / high-level programming language Standard searching algorithms: binary & linear search standard sorting algorithms: bubble, merge & insertion sort Identify common errors Trace tables The use of variables, constants, operators, inputs, outputs and assignments The use of the three basic programming constructs 	<ul style="list-style-type: none"> The use of records to store data and use of SQL to search for data The use of arrays How to use sub programs (functions and procedures) to produce structured code Random number generation To complete a programming project. 	<ul style="list-style-type: none"> Input validation Defensive design considerations: anticipating misuse & authentication Maintainability: Use of sub programs, Naming conventions, Indentation & Commenting Refining algorithms The purpose of testing and types of testing: iterative, final/terminal Identify syntax and logic errors Selecting and using suitable test data: Normal, Boundary & Invalid/Erroneous Simple logic diagrams using the operators AND, OR and NOT Truth tables Combining Boolean operators using AND, OR and NOT Applying logical operators in truth tables to solve problems 	<ul style="list-style-type: none"> Characteristics and purpose of different levels of programming language: High-level languages & Low-level languages The purpose of translators The characteristics of a compiler and an interpreter Common tools and facilities available in an integrated development environment (IDE): editors, error diagnostics, run-time environment, translators.



	<p>used to control the flow of a program: sequence, selection & iteration (count- and condition-controlled loops)</p> <ul style="list-style-type: none">• The common arithmetic operators• The common Boolean operators AND, OR and NOT• The use of data types: integer, real, Boolean, character and string, casting• The use of basic string manipulation• The use of basic file handling operations			
Knowledge organisers and more detailed topic resources can be found on all student Google Classrooms				

Year 11 Key 'Subject' Assessment Dates 2021-22		
Data Drop 1	Data Drop 2	Data Drop 3
Revision Focus: Each topic taught this term. Assessments: Written end of topic tests Feedback sessions: At the end of each topic	Revision Focus: Each topic taught this term. Assessments: Written end of topic tests Feedback sessions: At the end of each topic	Revision Focus: Each topic taught this term. Assessments: Written end of topic tests Feedback sessions: At the end of each topic