

Year 11 Term 1a:	
Topics covered:	Computational thinking, algorithms and programming
How it links to what has been studied before:	Algorithms, Programming fundamentals, Producing robust programs, Boolean logic, Programming languages and Integrated Development Environments
How it links to what will be studied:	Students have learnt the fundamentals of programming
Key words:	Programming Constructs Bubble Sort Insertion Sort Data types Arithmetic operators Variables and Identifiers Concatenation Loops: Condition-controlled Logic gates Arrays SQL Input Validation Syntax & Logic errors Purpose of testing Types of testing Trace Tables Integrated Development Environment
Assessment focus	The GCSE Paper 2 mock will commence from 30 October 2023
Revision tips	Smart Revise Seneca Learning courses.exa.foundation
Key skills:	 Understand and apply the fundamental principles and concepts of Computer Science, including abstraction, decomposition, logic, algorithms, and data representation Analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs
Why we study it:	We study computer science and programming to develop problem-solving skills, create innovative solutions, and understand the technology that shapes our world, fostering digital literacy and adaptability in an evolving technological landscape.
Mastery in this subject	 Attain a comprehensive understanding and proficiently apply the fundamental principles and concepts of Computer Science, encompassing abstraction, decomposition, logic, algorithms, and data representation. Demonstrate advanced skills in problem analysis from a computational perspective through hands-on experience in solving various problems. This involves proficiently designing, writing, and effectively debugging programs.
Vear 11 Term 1b.	
	NEA - Programming Project
iopics covered:	The use of the three basic programming constructs used to control the flow of a program:

	o Sequence o Selection o Iteration (count- and condition-controlled loops) The use of basic string manipulation The use of basic file handling operations: Open, Read, Write, Close The use of arrays (or equivalent) when solving problems, including both one-dimensional (1D) and two-dimensional arrays (2D) How to use sub programs (functions and procedures) to produce structured code Random number generation
How it links to	
what has been	Programming and theory linked to programming such as naming
studied before:	conventions, programming constructs
How it links to	
what will be	Programming constructs are fundamental to all programming, no matter
studied:	which language you study.
Key words:	Arrays
ncy words.	Assignments
	Basic file handling
	Basic string manipulation
	Close
	Constants
	Count-controlled loops
	Functions
	Inputs
	Iteration
	One-dimensional arrays (1D)
	Open
	Operators
	Outputs
	Procedures
	Random number generation
	Read
	Selection
	Sequence
	Subprograms
	Two-dimensional arrays (2D)
	Variables
	Write
Key skills:	Developing programming skills to:
	• Design
	• Write
	• Test
	Refine
Assessment focus	Completion of the NEA document
Revision tips	n/a
Why we study it:	The Programming Project is an opportunity for candidates to engage in an
	authentic programming experience as part
	of the GCSE (9–1) Computer Science course.

Mastery in this subject	•Effectively apply fundamental concepts, principles and mathematical skills, using sustained analytical, logical and evaluative computational thinking, to a wide range of complex problems
	•Develop and refine a complete solution that meets the requirements of a substantial problem.





