

# CURRICULUM OVERVIEW FOR YEAR 9 – GCSE COMPUTER SCIENCE

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Topic</b>	The History of Computers Computational Thinking Introduction of Pseudocode	Physical Computing Data Representation Logic	Pseudocode Development Algorithm efficiency	Pseudocode and Python CPU characteristics	Pseudocode and Python Computer Storage	Pseudocode and Python Constants, variables and data in programming
<b>Knowledge</b>	Foundation understanding of what computers do and their historical development To understand algorithm, abstraction and decomposition	To understand the use of binary numbers and its relation to Text Images and Sound Representation Use of logic gates and truth tables	Data types: integer, real, Boolean, string Simple Trace tables Programming constructs (selection, iteration) Algorithmic methods for searching and sorting data	How to move from pseudocode solutions into python (or other languages) Von Neumann architecture, F-D-E cycle Cores, Clock Speed, Cache	To understand the use of : Primary memory Secondary storage Cloud Storage	Understanding the concept of data structures
<b>Skills</b>	Research and presentation skills To develop problem solving skills using abstraction and decomposition To develop basic pseudocode solutions	Application of skills to programming using Microbits and other devices such as robotics and simple electronic circuits	Use of AQA pseudocode to solve given problems	Using python to solve given problems Comparing and evaluating various computer system performance	More complex python using functions and other features	Advanced programming using python The use of arrays in the design and implementation of solutions in both pseudocode and python
<b>Key Marked Piece (Summative Assessments in bold)</b>	Problem solving homework <b>Problem Solving Assessment</b>	Exam Questions on DR and Logic <b>End of Term Exam – Combination of practical and written on topics to date</b>	Exam Questions on Pseudocode <b>Mid Year written exam – combination of pseudocode and theoretical content to date</b>	Exam Questions on CPU <b>Python Progress Test</b>	Exam Questions on Storage <b>Python Progress Test</b>	Python Progress Test <b>End of Year written exam – pseudocode and theory content delivered to date</b>
<b>Vocabulary</b>	Computational thinking, abstraction, decomposition, algorithm, variable, assignment	Input, process, output, IPSO diagram, system life cycle,	Sequence, iteration, conditional loops, count controlled loop, finite loop, selection, two-way selection	Cache, clock speed, Mhz, GHz, core,	ROM, RAM, Magnetic, Optical, Solid State Function, subroutine, argument, parameters	Array, list, slicing