



YEAR 10 GCSE COMPUTER SCIENCE SUMMER TERM 3 – PAPER 2

‘An ambitious curriculum that meets the needs of all’

Medium Term Planning – Practical Python Programming

Curriculum Intent	Pupils will be taught the following National Curriculum guidelines this term:
Skills/Assessment Objective Links	<p>Learning Outcomes for the unit</p> <p>At the end of this Unit all students should be able to:</p> <ul style="list-style-type: none">• Create, manipulate and interrogate two dimensional lists• Create, open and close a file• Read from a file• Write and append to a file <p>Most students will be able to:</p> <ul style="list-style-type: none">• Write error-free, well-documented programs• Use modular programming techniques to break down a problem into its component parts and write well-structured programs using separate functions called from a main program <p>Some students will be able to:</p> <ul style="list-style-type: none">• Write error-free programs that extend advanced techniques (using arrays)
Numeracy	Arithmetic, BIDMAS, Comparison operators
Literacy	<p>Vocabulary Tier 3: text file, append, two-dimensional list, rows, columns, syntax error, logic error, debug.</p> <p>Vocabulary Tier 2: open, close, read, write, file, code, program</p> <p>Reading: Worksheets, presentations, answer sheets, exam questions, mark scheme, further reading for homework</p> <p>Writing: Answer on the worksheet via word</p> <p>Oracy: listening and using tier 3 words</p>
Becoming future ready	<p>Careers/Employability:</p> <ul style="list-style-type: none">▪ Software Architect.▪ Data Scientist.▪ Machine Learning Engineer.▪ Blockchain Developer▪ Cybersecurity Engineer.▪ Cloud Solutions Architect.▪ AI Research Scientist.▪ Full-Stack Developer.
Adaptation	<p>Throughout this topic, quality first teaching will provide differentiation:</p> <p>By product: Learners are asked to present outcomes writing different code, not all code will be equal in style and sophistication, all code will work with teachers input, top end programmers will be set challenges on how to extend code and be expected to conduct a level of independent research</p> <p>By resource: Worksheets are well presented and accessible. Instructions are clearly outlined and separate from the information so that pupils know where to begin and end. Handouts are differentiated by outcome. Resources used will appeal to the range of preferred learning styles of pupils e.g. visual, auditory or kinesthetic learners. Scaffolding of tasks – word frames.</p> <p>By Intervention: By providing different levels of supervision and support depending on coding ability</p> <p>By Progressive Questioning: Exploring pupils’ understanding of programming by setting adaptive challenges</p> <p>By Grouping: According to coding ability, prior attainment, gender, social preference, preferred learning style.</p> <p>By Task: Pupils identify targets which are meaningful via level of coding ability</p>
QFT/SEND Provision	

By Offering Optional Activities: In class or as homework, to extend learning.
This QFT/SEND provision will be explicit within the lesson by lesson schemes of work.



Implementation Curriculum Delivery	To be able to:
Learning Outcomes (Knowledge)	<p>Topic 1 Sorting List Understand why you might want to sort a list Know how to sort a list using Python Be able to use other functions with lists</p> <p>Topic 2 2D lists Understand the nature of a 2D list Be able to use a 2D list to solve a problem Be able to read from a 2D list Be able to add to a 2D list</p> <p>Topic 3 Read from a file Understand how to read data from a file Be able to read data from a file one line at a time Know how to interrogate data</p> <p>Topic 4 Write to a file Be able to write data to a file Understand what “append” means Know how to append data to a file</p> <p>Programing end of unit assessment</p>
Current learning to be developed in the future within:	Writing combination programs to combine all areas of programming skills and techniques
Assessment	See assessment maps for formative and summative assessment opportunities.
Impact	<p>Review assessment results and target pupils that require further support via:-</p> <ul style="list-style-type: none"> • Learning conversation • Changing seating plan • Plan lessons to address areas of concern in assessment • Targeted homework based on low performance areas identified in the assessment and marked pieces • Stretch and challenge high ability pupils by identifying ambitious next steps to expand knowledge <p>Create a feedback sheet for each student Each student identifies areas of Green, Amber and Red using Mark Assessment on their feedback sheet Complete NOW task on areas identified as Amber and Red</p>