YEAR 10 GCSE COMPUTER SCIENCE AUTUMN TERM 1 – 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	**Learning Outcomes for the unit** **At the end of this Unit all students should be able to:** • Use basic programming structures of sequence • Use basic programming structures of selection • Use basic programming structures of iteration • Use a regular expression to validate an input **Most students will be able to:** • Write error-free, well-documented programs using code maintenance **Some students will be able to:** • Write error-free programs that extend advanced techniques (understand when different data types should be used and why)
Numeracy	Arithmetic, BIDMAS, Comparison operators
Literacy	**Vocabulary Tier 3:** Integrated development, IDLE, variable, string, syntax, assignment statement, data type, integer, float, round, BIDMAS, selection, iteration, regular expression, list, two-dimensional list, text file, syntax error, logic error, debug, procedure, function, call, argument, parameter. **Vocabulary Tier 2:** code, program, arithmetic **Reading:** Worksheets, presentations, answer sheets, exam questions, mark scheme, further reading for homework **Writing**: Answer on the worksheet via word **Oracy:** Listening and using tier 3 words
Becoming future ready	**Careers/Employability:** ▪ Software Architect. ▪ Data Scientist. ▪ Machine Learning Engineer. ▪ Blockchain Developer ▪ Cybersecurity Engineer. ▪ Cloud Solutions Architect. ▪ AI Research Scientist. ▪ Full-Stack Developer.
Adaptation	Throughout this topic, quality first teaching will provide differentiation:
QFT/SEND Provision	**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 **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. **By Intervention:** By providing different levels of supervision and support depending on coding ability **By Progressive Questioning:** Exploring pupils' understanding of programming by setting adaptive challenges **By Grouping:** According to coding ability, prior attainment, gender, social preference, preferred learning style.

	By Task: Pupils identify targets which are meaningful via level of coding ability **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)	**Topic 1 Fundamentals** Be able to identify and correct common errors in computer programs Be able to use inputs, outputs, arithmetic and string handling Be able to cast Understand different data types Understand BIDMAS and MOD and DIV Write a programing using all of the above **Topic 2 Selection** Describe the different comparison operators Be able to use selection statements Write program using selection programming **Topic 3 Iteration for** Be able to use counter controlled (for) loops Write code using for loops Understand when and why to use for loops **Topic 4 Iteration while** Be able to use condition controlled (while) loops Write code using while loops Understand when and why to use while loops Programing end of unit assessment
Current learning to be developed in the future within:	Functions, procedures, regular expressions
Assessment	See assessment maps for formative and summative assessment opportunities.
Impact	Review assessment results and target pupils that require further support via:- • 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 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