Year 10 Curriculum Implementation: GCSE Computer Science

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge & Skills	**Fundamentals of Algorithms** • Algorithms, Decomposition and Abstraction • Flowcharts • Pseudocode • Searching Algorithms • Sorting Algorithms • Python Basics	**Programming Basics** • Data Types and Operations • Sequence and Selection • Iteration • Arrays and Records • Python – Subroutines, Lists and File Handling	**Programming Techniques** • Procedures and Functions • Validation and Authentication • Purpose of Algorithms • Errors and Testing • Python Challenges	**Data Representation** • Units and Binary Numbers • Binary Arithmetic and Hexadecimal • ASCII and Unicode • Images • Sound • Compression • Python Challenges	**Computer Systems** • Boolean Logic • Application and System Software • Programming Languages and Translators • Systems Architecture • The CPU • Memory • Secondary Storage • Python Challenges	
Links to prior learning	• Year 9 Python	• Year 7 Scratch • Year 8 Small Basic • Year 9 Python	• Year 9 Python • Programming Basics	• Year 8 Computers & Networks	• Year 8 Computers & Networks	
Assessment	• End of Unit Assessment	• End of Unit Assessment	• End of Unit Assessment	• End of Unit Assessment	• End of Unit Assessment • Mock Exams	
Home learning	• Weekly homework based on the current topic	• Weekly homework based on the current topic	• Weekly homework based on the current topic	• Weekly homework based on the current topic	• Weekly homework based on the current topic	
Cultural Capital and extra-curricular opportunities	• Wide Reading	• Wide Reading	• Wide Reading	• Wide Reading	• Wide Reading	
Literacy	• Oracy: Discussion in pairs and groups • Computer Science Terminology	• Oracy: Discussion in pairs and groups • Computer Science Terminology	• Oracy: Discussion in pairs and groups • Computer Science Terminology	• Oracy: Discussion in pairs and groups • Computer Science Terminology	• Oracy: Discussion in pairs and groups • Computer Science Terminology	
Numeracy	• Arithmetic • Storing values in variables • Loop counting and control • Executing code paths based on specific conditions • Boolean Operators • Comparison Operators • Integers and Decimals • Sorting Data	• Arithmetic • Storing values in variables • Integers and Decimals • Binary • String Handling • Boolean Operators • Comparison Operators • Random numbers • Loop counting and control • Executing code paths based on specific conditions	• Arithmetic • Dates • Length • Range • Trace Tables	• Binary • Data Units • Most and Least Significant Bits • Decimals • Hexadecimal • Number Conversions • Binary Addition • Binary Shifts • Fille Size Calculations • Metadata • Sound Wave Graphs • Compression	• Binary • Boolean Operators • Truth Tables • Boolean Logic • Clock Speed • Cache Size • Processor Performance • Capacity	
Careers Information, Education, Advice and Guidance (CEIAG)	• Careers in Software Development	• Careers in Software Development	• Careers in Software Development	• Careers in Software Development	• Careers in Software Development	
Spirituality	• Principles: Truth & Patience	• Principles: Truth & Patience	• Principles: Truth & Patience	• Principles: Truth & Patience	• Principles: Truth & Patience	
How can parents support the curriculum?	• Checking homework • Support with any computer science questions	• Checking homework • Support with any computer science questions	• Checking homework • Support with any computer science questions	• Checking homework • Support with any computer science questions • Support with Revision	• Checking homework • Support with any computer science questions • Support with Revision	