Bishop Stopford's School

Curriculum Map Year 9 **Computer Science**

Curriculum Intent: To inspire every student to engage in lessons and want to explore the curriculum beyond the classroom

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of work	Hardware and Software	Data representation	Introduction to Python - Programming Concepts.	Programming in Python – Part 2	Algorithm - Computational Thinking Python Programming	Hardware and Software
Core Skills	Understanding and applying the fundamental principles and concepts of computer science, including abstraction, logic, algorithms, and data representation	Analyzing problems in computational terms and having ample opportunities to gain practical experience of writing computer programs to solve such problems and be proficient in programming.	Evaluating and applying information technology, including new or unfamiliar technologies, analytically to solve problems.	Describe what algorithms and programs are and how they differ, write simple Python programs that display messages, assign values to variables, Locate and correct common syntax errors Describe the semantics of assignment statements Use simple arithmetic expressions in assignment statements to calculate values	Being responsible, competent, confident and creative users of information and communication technology.	programming skills, computational and problem-solving skills, and logic.
Core Knowledge	Systems architecture; The CPU; Function and Characteristics of the CPU; Memory; Storage; Software; Assessment.	Data representation, Units, Numbers, Characters, Images, Sound ad Compression.	Programming Concepts. Introduction to Python and programming; Python IDLE and programming Problem solving ways of describing problems (algorithms, written description, flowchart, pseudo-code)	Operators: arithmetic operators, order of precedence and parenthesis Develop code: error messages, debugging, comment statements, writing, saving and retrieving program files Data types, variables and input	Algorithm - Computational Thinking Python Programming	Understand the hardware and software components that makeup computer systems, and how they communicate with one another and with other systems
Assesment & Feedback	This will be in the formats specified: Class structured assessments. End of unit and topic assessments. Diagnostic Assessments with detailed constructive feedback given to improve and progress. Half Term assessment of skills by the student based on units delivered. Termly assessment of skills by the teacher (In addition to formal school reporting).					
Link to prior learning	The Big ideas: Network security and Internet protocols and layers, Algorithms and Computational thinking will be the key ideas under pinning your study. In Year 8, students studied Systems Architecture, how to represent data, the various hardware and software components of a computers and how they operate and develop your skills in programming basic algorithms and systems. In Year 9, students will learn about Wired and Wireless networks, the Ethical, legal, Cultural and Environmental Impacts of Digital Technology. You will further be consolidating your knowledge in the use of Computer systems in the Modern World and Python programming. Beyond Year 9, students will deepen your understanding in Programming concepts and developing skills in programming. You will learn about Systems Architecture, how to represent data, the various hardware and software components of a computers and how they operate. Crucial Skills students will develop will be: mathematical, investigative, analytical, reasoning, critical thinking and problem solving skills.					
Outside learning/trips			Silicon Valley (San Francisco) - Apple, Google, eBay, The Tech Museum.			