Bishop Stopford's School

Curriculum Map Year 10 **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	Data Representation - Storage Units.	Computer Systems	Algorithms	Logic and languages	Programming techniques and producing robust programs.	Programming In Python - Programming concepts
Core Skills	Problem solving and computation skills, which prepares learners to solve tomorrow's problems by developing their' knowledge, skills, and understanding through critical computational concepts and experience.	Demonstrate knowledge and understanding of the key concepts and principles of computer science	Analyse problems in computational terms: to make reasoned j judgments and to design, program	Problem solving and computational skills, which prepares them to solve tomorrow's problems by developing learners' knowledge, skills, and understanding through critical computational concepts and experience.	Ability to design, program, evaluate and refine solutions curriculum is developed so that students are taught the principles of problem-solving and computation, Problem solving skills. Analysis and critical thinking. Computational logic and programming skills.	Analyze problems in computational terms: to make reasoned judgments, design, program, evaluate and refine solutions.
Core Knowledge	Binary arithmetic and Hexadecimal; ASCII and Unicode; Images, Sound and Compression. Programming.	Systems Architecture; Memory & storage; Wired and wireless networks; Network topologies; Protocols and Layers; System Security; Systems Software; Ethical, Legal, Cultural, and Environmental Concerns.	Computational logic; Translators and facilities of languages & Revision; Data representation; Python Programming.	Defensive design; Errors and testing; Translators and facilities of languages; Introduction to SQL & Unit assessment	Analysis; Design; Development; Testing; Evaluation & Conclusions	Sequence and selection; Iteration and Arrays; Procedures and functions; Records and files; Programming Project.
Assement & Feedback	Assessment: Google Forms Assessment. Worksheets. PowerPoints. Use OCR mark scheme/grade boundaries (1-9) to give accurate assessment relating to exam board criteria MCQ's. End of topic test Homework booklets. Peer Assessments. Access to level/grade descriptors. Exemplar work available Peer and self-assessment are evident. Past Paper exercises.					
Link to prior learning	The Big ideas: The big ideas you will consider are Digital literacy, Programming, Algorithms and Computational thinking. In Year 9, students consolidated their knowledge of Computer systems in the Modern World and Python programming. Students learnt about Wired and Wireless networks, the Ethical, legal, Cultural and Environmental Impacts of Digital Technology and practiced Binary logic and completed diverse mini-Programming tasks. In Year 10, students studied Algorithms, Data Representation, and were introduced to SQL. Students also build on their skills and knowledge in Python Programming, Programming Techniques and undertake a Structured Programming Tasks. Beyond Year 10, you will work on Programming Techniques to produce robust programs. You will further design, develop, test, and evaluate programs. Students will search and sort Algorithms, engage in Problem solving tasks and consider the Ethical, Legal, Cultural and Environmental Concerns with regards to the use of Computer Systems. Students will develop their understanding in Binary Arithmetic, Hexadecimals, the ASCII and Unicode, undertake exam styled programming challenges and solve exam styled questions. Important Skills students will acquire and develop which will be crucial to their study are: mathematical, investigative, analytical, reasoning, problem solving skills and critical thinking.					
Outside learning/trips	Japan - Miraikan, the National Museum of Emerging Science and Innovation with its interactive displays on robots, genetic discoveries, space and astronomy. The Sony ExploraScience.					