Year 10 Computer Science						
Curriculum intent	The curriculum has been designed to challenge, inspire and engage all students, offering them an insight into the inner workings of computers, computer networks and storage devices. The aim is to develop students' problem-solving skills through the development of coding techniques and applying these to different scenarios and challenges, thus developing the efficiency of the code. Students will look at the different types of networks and how they are designed, and the protocols used to make them functional. They will look at the risks of networked computers from cyber crime and how to mitigate those risks.					
Term	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Knowledge	Fundamentals of algorithms Programming I/O Variables Conditional statements (IF, ELIF and ELSE)	Programming Lists 2D Lists Functions Reading and writing to external text files.	Data representation, focusing on number bases, binary arithmetic and how characters, images and sound or stored. The different forms of compression and how they are applied to different types of files. Exam question technique focusing on writing code to solve given problems.	Computer systems focusing on Boolean logic and system architecture	Trace tables, the reading and identifying outputs at different stages of the execution of code, being able to read and understand the use of pseudo code when creating and planning a programme	Relational database, how to create and then search them using search terms Cyber security Fundamentals of securing a network against malicious attack
Skills	Recall of knowledge. Application of knowledge. Problem solving	Recall of knowledge. Application of knowledge. Problem solving	Recall of knowledge. Application of knowledge. Analyse the needs of different scenarios and	Recall of knowledge. Application of knowledge.	Recall of knowledge. Application of knowledge.	Recall of knowledge. Application of knowledge. Analyse the needs of different

			selecting and justifying choices			scenarios and selecting and justifying choices
Assessments	Exam board questions at the end of each topic with feedback and RAMP opportunities End of October	Exam board questions at the end of each topic with feedback and RAMP opportunities End December	Exam board questions with feedback and RAMP opportunities End of January	Exam board questions with feedback and RAMP opportunities End of February End of March	Exam board questions with feedback and RAMP Mid May	Exam board questions with feedback and RAMP Start of June Start of July
Curiosity	RaspberryPi https://www.raspberrypi.org/learn/	Coding in schools https://code.org/educate/curriculum/high-school	The brain chip https://www.youtube.com/watch?v=KsX-7hS94Yo	encryption https://www.youtube.com/watch?v=sMOZf4GN3oc	The brain chip, next steps https://www.cnet.com/videos/neuralinks-latest-monkey-brain-chip-demo-explained/	cyber security youtube.com/watch?v=sdpxddDzXfE