Year 9: Computing

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topics	**Topic:** What is a computer? **Foci:** - Computer history - Hardware & Software - Hardware components - Binary - Networks	**Topic:** Programming **Foci:** - Edublocks - Input & Output - Variables - Sequence - Selection - Iteration (loops)	**Topic:** Spreadsheets **Foci:** - Formatting - Formulas - Simple functions Sum(), Min(), Max(), Average() - Complex functions countifs() - Charts	**Topic:** Creative Project **Foci:** - Operating digital cameras - Associated file types & properties - Using editing software	**Topic:** Cyber-Security **Foci:** - Cyber Choices - Cyber-security threats - Malicious code - Pen testing - Encryption - Digital footprint	**Topic:** Web Programming **Foci:** - HTML - CSS - Javascript
Assessments	Assessment: Written	Assessment: On-screen	Assessment – On-screen	Assessment - Portfolio	Assessment – Written	Assessment – On-screen

Building on Prior Learning	**Substantive Knowledge** Students will draw upon a mixed program of Computing, IT and Digital Literacy from years 7 and 8. The year 9 Programme of study develops programming skills further for PC and web, looks at use of different devices together to use produce creative outcomes and builds confidence in using spreadsheets towards larger datasets. **Disciplinary/procedural Knowledge** Students will draw upon exposure to different programming environments from years 7 and 8. The year 9 Programme of study develops algorithmic / block programming further in a structured way exploring sequence, selection and iteration.
Cultural Capital	**There is cultural capital in abundance in this programme of study:** Given the relative youth of Computer Science, Digital Literacy and Information Technology as disciplines, cultural capital is usually a mix of technology history alongside identification and explanation of related personal experience to a given topic. For example, the 'What is a Computer' topic might look historically at the timeline of modern computing, but equally relevant would be the day-to-day experience of using different computing devices from PCs to games consoles to mobile devices.
Mastery	**In terms of mastery:** Students will create solutions to logical problems with Edublocks / Python, they will be able to identify key hardware components in a computer and what they do. Students will be able to create spreadsheets to summarise tabular data using functions and charts. Students will be able to create high quality creative photography outcomes through use of devices and application of theory. Students will understand threats posed to computers / data and how organisations protect against these. Students will create hand coded web pages with a mix of media and functionality.
Development of Character	**A wide range of virtues are covered through the teaching of Computing:** For example, through programming students learn creativity, open mindedness to alternative solutions, persistence through debugging, bravery in seeing mistakes positively and the appreciation of beauty in the simplicity of a solution.
Extra-Curricular opportunities	**In School:** Code club **Outside of School:**
Metacognitive Learning	Students will learn through practice, different methods promoting knowledge retention and effective revision techniques and how these apply these for written assessments.