Year 10 - Computer Science - Curriculum – 2024-2025

	Autumn Term		Spring Term		Summer Term	
	1	2	1	2	1	2
Key Concepts	Computer Systems / Systems Architecture	Computer Networks / Network Management	Network Security	Legal / Ethical issues	Programming / Algorithms	Programming Project
Knowledge & Understanding (National Curriculum) *Skills are across the whole year.*	Outstanding lesson delivery is a product of staff adopting the Boldon Learning Sequence into their practice. Staff begin lessons with 'Bold Starts' where learning is revisited from previous lessons and/or schemes of learning. The sequence progresses onto new learning being introduced, together with development of new knowledge through independence and enrichment. New learning is then reviewed through varied questioning through 'cold-calling' strategies. Introductory concepts of Networks / Network security is covered in KS3 to ensure the fundamental network components and topologies are introduced, this knowledge is then built on by introducing protocols / layers and other key networking concepts at KS4. Outstanding lesson delivery is a product of staff adopting the Boldon Learning Sequence into their practice. Staff begin lessons with 'Bold Starts' where learning is revisited from previous lessons and/or schemes of learning. The sequence progresses onto new learning being introduced, together with development of new knowledge through independence and enrichment. New learning is then reviewed through varied questioning through 'cold-calling' strategies.					
Skills	**R** *Develop* **RESILIENCE**		★ *Students need to solve and develop complex algorithms to ensure systems work - resilience is a critical aspect of this.*			

	A *Possess* **AMBITION**	★ *Students should show a desire to always improve based on constructive feedback and look to participate in group discussions and problem solving computational thinking activities. Students should show a desire to always improve their creative digital skills.*
	I *Demonstrate* **INTEGRITY**	★ *Demonstrating and upholding strong moral and ethical values when learning specific topics throughout the year.*
	S *Embed* **Self-Discovery**	★ *Students have to reflect on topical issues such as digital threats and issues. Students should be open to developing personal opinions and feelings, being mature enough to discuss in a group environment.*
	E *Display* **EMPATHY**	★ *Students need to listen to other people's views, experiences and opinions and be prepared to listen and understand differing viewpoints in order to develop their own personal opinion.*
Curriculum Links	• Network threats builds on cyber security, e-safety knowledge and understanding from the KS3 units of work. Networks in computing are further explored and binary use in computing is reviewed and further explored in sound and graphics. Students build on programming knowledge and principles, and algorithms that have been developed in KS3 across block and text based programs. The main programming language at KS4 is Python, students learn Microsoft Small Basic and Scratch at KS3, this is to ensure pupils get a broad range of programming experience across various systems, applications and languages to support them more in the wider world. Data types such as Integers link into Mathematics and Logic Gates link into Science in terms of cross curricular, all of which are critical to producing high quality Algorithms and programs. Digital IT skills are linked to project work which helps reflect a working environment with pre-production, production and post production stages, similar to subjects such as Art and Photography, all of which encompass the mentioned stages when developing a prototype. Developing algorithms in Computing has strong cross curricular links to Mathematics in terms of solving equations and formulas due to thinking creatively, innovatively, analytically and logically.	

	• Students' digital skills and computing knowledge from each unit of learning interlinks digital strands and helps students to begin to think about their future digital career prospects. Students during year 7 - 9 get to experiment with different skills and computing experiences so they begin to get a better understanding of what digital path they might prefer (KS4 Digital Paths - Digital IT / Computer Science).

Assessment	• Written assessment - Unit 1 checkpoint
	  ○ Unit checkpoint - Key Frame animation
	• Written Test Assessment - Unit 1 checkpoint
	  ○ Unit checkpoint - Computer networks / network management
	• Written Assessment - Unit 1 final checkpoint
	  ○ Unit checkpoint - Network security and protocols
	• Written Assessment - Unit 1 final checkpoint
	  ○ Unit checkpoint - Legal / ethical issues in computing
	• Written Assessment - Programming checkpoint
	  ○ Unit checkpoint - Design
	• Written - Unit 2 final checkpoint
	  ○ Unit checkpoint - Programming checkpoint

Aspirations & Careers	• Students recognise that the digital sector is a major source of employment in the UK where digital skills span across multiple industries, where almost all jobs in the UK require good levels of digital literacy. Students can pursue a career in computing, the digital sector, university, sixth form or apprenticeship with good digital skills.