Fairfield High School for Girls

Computer Science – Year 9 — Long-Term Plan 2025-2026

Calendar	Topic	Assessment	Sequencing and Coherence *concepts - themes - skills*	Literacy *reading - vocabulary - oracy - writing*
Autumn **Half Term 1**	**Unit 1 Computational Thinking:** • Logical Thinking • Logic Gates • Algorithmic Thinking • Computational Thinking • Decomposition • Abstraction	Whole school Exam window on unit topics with feedback from the exam. Next steps time to review knowledge gaps.	Knowledge unit covering how computers work. Looking at the choices are made with logic gates and then how computational thinking is developed to use computers to solve problems. Links to units on python and spreadsheets in Y8, links to understanding computers and Micro bits in Y7. Practical programming unit building on skills in Python in Y8 and Kodu and Micro bit in Y7. Links to data and info for Computational thinking unit **NC Thread:** Algorithms Data and information	Knowledge organisers including glossaries Oracy opportunities within discussions Reading task given at the end of the unit.
Autumn **Half Term 2**	**Unit 2 Python Next Steps:** • Algorithmic Thinking • Computational Thinking • Decomposition • Abstraction • iteration • selection extension: functions		Practical programming unit building on skills in Python in Y8 and Kodu and Micro bit in Y7. Links to data and info for Computational thinking unit **NC Thread:** Algorithms Programming Computer Systems Data and information	Knowledge organisers including glossaries Oracy opportunities within discussions, paired design work to develop problem solving skills. Presentation of ideas to audience
Spring **Half Term 3**	**BEBRAS Challenge**	The Bebras Challenge introduces computational thinking to students worldwide. Each participant has 45 minutes to tackle a series of interactive tasks, designed to encourage logical thinking and problem-solving skills appropriate for their age group. Students don't need to excel in maths or computing to take part in the Bebras Challenge. The tasks are designed to allow every student the opportunity to showcase their potential.		
	Continue… **Unit 2 Python Next Steps**	Assessed using Python Challenges to gauge understanding. Levels tracked in PowerPoints		

Spring **Half** **Term 4**	**Unit 3 Networks:** • The Internet • Connectivity • Topologies • Client-server Networks • Encryption	In the final lesson, pupils will sit a multiple choice test which will form the Unit assessment.	This is a theoretical unit covering the basic principles and architecture of local and wide area networks. Pupils will learn that the World Wide Web is part of the Internet, and how web addresses are constructed and stored as IP addresses. Client-server, peer-to-peer networks and the concept of cloud computing are all described. Ways of keeping data secure and simple encryption techniques are also covered. This unit will form very good preparation on the topic of networks at GCSE level. **NC Threads:** Algorithms Data and Information Impact of Technology Safety and Security	Knowledge organisers including glossaries Oracy opportunities within discussions, paired design work to develop problem solving skills. Presentation of ideas to audience
Summer **Half** **Term 5**	**Unit 3 AI Machine Learning:** • What is AI • Machine Learning • Ethics of AI • Image recognition • Reviews	Full end of year Assessment covering all units covered so far in the year. Marks will be issued with Next steps feedback	Theory unit looking at new tech and AI, focusing on exploring the future developments. Links with both prior units in year 9 threading data and information through, linking with thoughts on use of algorithms from computational thinking. Links to safety and impact of tech within the Y8 units on privacy, security and Cyber crime looking at how tech developments are used. **NC Threads:** Data and Information Impact of Technology Safety and Security Computer systems Computer Networks	Knowledge organisers including glossaries Oracy opportunities within discussions Reading task given at the end of the unit.
Summer **Half** **Term 6**	**Unit 4 Copyright and Ownership:** • Laws • Use of online materials		Knowledge of the laws that should be followed when using online items. Guidance on how to follow the rules when using the internet. Unit 5 links to AI unit and the units on Privacy and managing online safety in both previous years. **NC Threads:** Impact of Technology Safety and Security	Knowledge organisers including glossaries Oracy opportunities within discussions Reading task given at the end of the unit.