Curriculum Map – Computer Science

> **Intent**
> In Computer Science, we aim to inspire and equip students with the knowledge, skills, and understanding necessary to thrive in an increasingly digital world. We are committed to fostering a deep appreciation for computational thinking, digital literacy, and technological innovation. By offering a comprehensive and engaging curriculum, shaped by well executed lessons, we strive to develop students' critical thinking, problem-solving and ethical awareness, celebrating their achievements and promoting a diverse range of career opportunities in technology and beyond.

	Stream	September > October	October > Christmas	Christmas > February	February > Easter	Easter > June	June > July
		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7	Digital Literacy	E-Safety	Networks & Internet	Digital Influencing	Spreadsheets	Binary Imaging	Evolution of Games
Year 8	Creative Computing	Computer Systems	Scratch Gaming	Introduction to Python	Vector Graphics	Gaming Enterprise	Blender Modelling
Year 9	Computer Science	Python Returns	Introduction to Python Game Development	Cybersecurity	Introduction to Artificial Intelligence	Digital Skills for GCSE and The Workplace	

In Year 7 and Year 8, students are taught Computing for one hour a week and will follow the Digital Literacy and Creative Computing streams as mentioned above. In Year 9, students are taught an hour of Computer Science every fortnight alongside one hour of Creative iMedia. At GCSE and A Level, students are given the option of studying Computer Science. Shown on the following pages are the breakdowns for the GCSE and A Level in Computer Science and how both qualifications operate at Thomas Alleyne Academy.

AQA GCSE Computer Science

GCSE Computer Science is formed of two papers;

Paper 1 *2 Hours, Written Paper*	Paper 2 *1 Hour 45 Minutes, Written Paper*
● Fundamentals of Algorithms ● Fundamentals of Programming	● Fundamentals of data representation ● Computer systems ● Fundamentals of computer networks ● Cyber security ● Relational databases and structured query language (SQL) ● Ethical, legal and environmental impacts of digital technology on wider society, including issues of privacy

AQA A Level Computer Science

A Level Computer Science is formed of two assessments and a non-examined assessment (NEA)

Paper 1 *2 Hours, On-screen exam*	Paper 2 *1 Hour 45 Minutes, Written Paper*	Non Examined Assessment (NEA)
● Fundamentals of programming ● Fundamentals of data structures ● Fundamentals of algorithms ● Theory of computation	● Fundamentals of data representation ● Fundamentals of computer systems ● Fundamentals of computer organisation and architecture ● Consequences of uses of computing ● Fundamentals of communication and networking ● Fundamentals of databases ● Big Data	Out of 75 marks worth 20% of the A Level The Non-Examined Assessment assesses student's ability to use the knowledge and skills gained through the course to solve or investigate a practical problem. Students will be expected to follow a systematic approach to problem solving

	● Fundamentals of functional programming ● Systematic approach to problem solving	