COMPUTER SCIENCE CURRICULUM OVERVIEW

Ready. Respect. Safe.

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
7	Introduction to the Brownhills Network: • Network protocols • E-safety • Passwords/logins	Python Turtle: • Programming using Python Turtle library. • Drawing shapes/objects	History of computers: • Pioneers in computing • The space race • Enigma code	Data Representation: • Binary • Binary addition • Decimal • Hexadecimal	Digital Imaging : • Pixel Art • Image types • Lossy compression • Lossless compression	Flowol : • Creating flowcharts using software. • Flowchart symbols • Real world applications.
8	Cybersecurity: • Malware • Phishing • DDOS/Botnet • Hacking	Python Programming: • Error Types • Variables • Algorithms • Data Types	Scratch Programming: • Animating a short cartoon. • Block based coding	Image Editing: • Image manipulation. • Cloning/morphing images	Hardware/Software : • Components of a computer • Software/ hardware applications.	Databases: • Creating databases • Queries/forms • Macros/reports
9	Data Representation: • Binary shifts • Binary addition • Hexadecimal • Character sets	Advanced Scratch Programming: • Animating a game with multiple levels. • Block based coding.	Website development: • HTML coding • CSS coding • JavaScript coding	Computational thinking: • Algorithms • Decomposition • Abstraction	Advanced Python Programming: • Efficiency • Loops • Error decoding	Spreadsheets: • Creating spreadsheets • Formulas • Graphs/charts
10	OCR Computer Science J277- Paper 1 & 2: • Systems architecture • Memory and storage • Python Programming practice		OCR Computer Science J277- Paper 1 & 2: • Computer networks, connections and protocols • Network security • Python Programming practice		OCR Computer Science J277- Paper 1 & 2: • Systems software • Ethical, legal, cultural and environmental impacts of digital technology • Python Programming practice	