

Term → Year ↓	Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
7	Theory Computer History and the evolution of the CPU. Programming Introduction to flowcharts.	Theory Data representation - Binary Programming Introduction to programming - Bits box - Variables	Theory Hardware – Basics of how CPU, RAM and storage interact. Programming Selection in programming – Bits box.	Theory Hardware – Basics of how CPU, RAM and storage interact. Programming Selection in programming – Bits box.	Theory Keeping safe online Programming Introduction to robotics /	Theory Computational thinking Programming Introduction to robotics.
8	Theory Hardware – Recap of the main flow of data. Programming Problem solving	Theory Hacking and networking Programming Introduction to python – Sequencing and I/O	Theory Data representation – Binary, character sets and images. Programming Websites and HTML	Theory Internet technology Programming Selection in python	Theory Protecting your data – encryption. Programming Selection in python	Theory Machine learning and future technology. Programming Logic in computer science.
9	Theory Hacking and networking – recap of key ideas. Programming Variables, I/O and selection in python.	Theory Looking back – Revising year 7 and 8 theory. Programming Variables, I/O and selection in python.	Theory Legal aspects of CS Programming Iteration in python.	Theory System software - OS Programming Iteration in python.	Theory Standard algorithms – Linear search and bubble sort. Programming Developing larger programs in python	Theory Digital literacy. Programming Developing larger programs in python
10	Theory Binary, character sets and binary addition. RAM/ROM and units of measurement. Storage devices and virtual memory. Programming Recap of KS3 programming.	Theory CPU – Components, FDE cycle and CPU performance. Boolean algebra. Programming String manipulation. Debugging and validation.	Theory Translators and different types of language. Operating systems. Programming Decomposition and developing larger projects.	Theory Networking – Hardware Hexadecimal. Programming File handling Arrays	Theory Internet technology. Programming SQL Programming practice.	Theory Networking protocols. Wireless networking Programming Searching and sorting algorithms. Programming practice.
11	Theory Networking threats and protective measures. Revise year 10 theory. Programming Recap year 10 programming skills – Iteration, arrays, file handling and string manipulation.	Theory Legal, ethical and cultural impact of CS – Extended writing practice. Programming Recap year 10 programming skills – Iteration, arrays, file handling and string manipulation.	Theory Open and closed source software. Compression. Revise networking. Packet and circuit switching. Programming Functions in programming.	Exam practice and revision.		

12	<p>Theory Hardware – Memory, storage devices and I/O. Data representation – Binary, hexadecimal, sign magnitude and two complement. Boolean algebra and Karnaugh maps.</p> <p>Programming Revise GCSE programming – An introduction to problem solving.</p>	<p>Theory Translators. Virtual memory. CPU architecture and FDE cycle.</p> <p>Programming Decomposition and developing larger projects – Connect 4. Reusable components – Developing a UI for connect 4.</p>	<p>Theory Encryption and compression. Systems lifecycle.</p> <p>Programming Space invaders – Developing larger programs. Functions and modular coding.</p>	<p>Theory Legal, moral and ethical impacts of CS – Extended writing practice. Floating point. Operating systems</p> <p>Programming Data structures – Stacks, Queues, arrays, records and tuples. Little man computer – Developing assembly code.</p>	<p>Theory Boolean algebra simplification. Networking. Device drivers and interrupts.</p> <p>Programming Problem solving – Computational thinking by developing Frogger.</p>	<p>Theory Adders and flip flops. Standard algorithms. Database normalisation.</p> <p>Programming Coursework - Analysis Object orientated programming.</p>
13	<p>Theory Computational methods. Recursion - Divide and conquer. SQL Data structures – Trees and graphs.</p> <p>Programming Coursework - Design</p>	<p>Theory Complexity theory. Standard algorithms – Dijkstra, A*, merge and quicksort. ACID – Managing transactions. Hashing – Linked lists and hash tables.</p> <p>Programming Coursework – Prototype 1 Local and global variables. Pass by reference and value.</p>	<p>Theory HTML, CSS and JavaScript. Thinking concurrently. Parallel processing. Virtual machines</p> <p>Programming Coursework – Prototype 2 and 3</p>	<p>Theory Compilers. Page rank algorithm. Revision.</p> <p>Programming Coursework – Evaluation.</p>		