Birchwood High School   **KS4 Computer Science Curriculum/Assessment Map 2025/26**   *your dreams, your future, our challenge*

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
9	**Topic:** Intro into Computer systems **Knowledge and skills** • Intro – how does a computer work? • Function of the CPU (Von Neumann architecture) • Embedded systems. • RAM, ROM and cache • Fetch execute cycle using the CPU and RAM.	**Topic:** Storage **Knowledge and skills** • Secondary storage devices • Units of data • Binary to denary conversions and vice versa • Character sets, ASCII and Unicode. • The use of compression	**Topic:** Python Programming **Knowledge and skills** • Print • Inputs • Selection – How to use if statements effectively.	**Topic:** Python Programming **Knowledge and skills** • Iteration – for and while loops • Lists • File handling. • Python project.	**Topic:** Networks **Knowledge and skills** • LAN and WAN • Components that make up a networks • The internet • Identifying the Star and mesh topologies • Modes of connection: Wired and wireless. • Encryption	**Topic:** Ethics and the law **Knowledge and skills** • Introduction into Ethics • Impact of IT on different industries. • Laws that surround ICT •

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
10	**P1 Topic:** Architecture of the CPU and primary storage **Knowledge and skills** • The fetch-execute cycle • Functions of the components and registers of the Von Neumann architecture • What affects the performance of the CPU? • Primary storage **P2 Topic:** Functions and gates **Knowledge and skills** • Recap of year 9 skills • Functions and procedures • Knowing when to use a function and procedure • Nesting • Binary logic AND, OR, NOT gates	**P1 Topic:** Secondary storage and Data **Knowledge and skills** • Common types of secondary storage • Characteristics of secondary storage devices • Data capacity and calculation of data capacity requirements • Hex conversions • Binary additions • Binary shifts. **P2 Topic:** **Knowledge and skills** • Built in libraries within Python • If statements and case statements. • For and while loops • 2d Arrays	**P1 Topic:** Binary and Networks **Knowledge and skills** • Binary in images • Binary in sounds • Types of compression, Lossy and lossless • P 2 P vs client server networks. • Factors affecting network performance. • Understanding the star and mesh topologies. • The internet. • IP addressing and MAC addressing. **P2 Topic:** Pseudocode **Knowledge and skills** • How to write in pseudocode (OCR) • Trace tables. • SQL • Searching records with SQL	**P1 Topic:** Networks and software **Knowledge and skills** • Standards and layers • TCP/IP protocols. • Forms of network attacks • Preventing network attacks • Functions of the OS • Utility software • Ethics and the laws **P2 Topic:** Defensive design **Knowledge and skills** • Intro into defensive design • Authentication • Validation and verification methods • Types of testing • Test data.	**P1 Topic:** Getting ready for end of year exam **Knowledge and skills** • Creating revision resources • Understanding the requirements of the exam • Revisiting topic areas **P2 Topic:** Programming project **Knowledge and skills** • Creating a programming solution for a given scenario released by the exam board. • Applying all the python skills to this scenario using the SDLC.	**P1 Topic:** Getting ready for end of year exam **Knowledge and skills** • Creating revision resources • Understanding the requirements of the exam • Revisiting topic areas **P2 Topic:** Programming project **Knowledge and skills** • Creating a programming solution for a given scenario released by the exam board. • Applying all the python skills to this scenario using the SDLC.

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11	**P1 Topic:** Revisited topics 1	**P1 Topic:** Revisited topics 2	**Revision stage 1**	**Revision stage 2**	**GCSE exams**	**GCSE exams**

- The fetch-execute cycle - Functions of the components and registers of the Von Neumann architecture - Cache memory **Knowledge and skills** **P2 Topic:** Searches and sorts **Knowledge and skills** - Applying pseudocode to the exam questions. - Sorts and searches - Writing code for the sorts and searches. - High/Low level languages - IDE's	**Knowledge and skills** - Data capacity and calculation of data capacity requirements - Hex conversions - Binary additions - Binary shifts. - Standards and layers - TCP/IP protocols. **P2 Topic: Exam questions.** **Knowledge and skills** - Applying pseudocode to the exam questions. - Revision for paper 2 Year 11 mocks will be completed in this term.	All knowledge and skills will be completed by this stage. Students will complete personalised revision addressing their weaker topic areas. This is to ensure they are completely ready for their GCSE examinations.	All knowledge and skills will be completed by this stage. Students will complete personalised revision addressing their weaker topic areas. This is to ensure they are completely ready for their GCSE examinations.	External GCSE exams	External GCSE exams