Curriculum map – Computer Science

YEAR 7	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
TOPIC(s)	**7.1 Introduction to computer science** • Baseline • Getting organised • Safety in a computer room • The dangers of social media	**7.2 Under the hood of a computer** • Input and output • Sensors • Hardware • The CPU • Software • Operating Systems • Assessment	**7.3 The language of computers** • Binary units • Binary conversion • ASCII • Binary addition • Encryption • Assessment	**7.4 Cyber Security** • Malware • The law • Attacks and preventions • Penetration testing & forensics • Assessment	**7.5 Computational Thinking** • Abstraction and Decomposition • Flowcharts the basics • Algorithms and Pseudocode • Lightbot algorithms • Assessment	**7.6 Block based programming** • Sequence and Iteration • Selection • Variables • Testing
What students will know	**Strand 1 Computer Science** • E-safety online **Strand 2 Information Technology** • How to access the schools' network. **Strand 3 Digital Literacy** • Health and Safety. • Year 7 Social media awareness	**Strand 1 Computer Science** • The hardware and software that makes up a computer. **Strand 2 Information Technology** • The purpose of different types of software. **Strand 3 Digital Literacy** • Use of hardware and software for a specific purpose (sensors)	**Strand 1 Computer Science** • Binary **Strand 2 Information Technology** • Use of technology to drive learning e.g.: excel, web games. • Character sets are used by other cultures and languages. **Strand 3 Digital Literacy** • Keeping data safe: encryption.	**Strand 1 Computer Science and Strand 2 Information Technology** • The dangers to computer systems and methods to protect computer systems. **Strand 3 Digital Literacy** • The misuse can lead to threats to the computer. • Reporting concerns if the computer misuse act has been broken.	**Strand 1 Computer Science** • Sequences and Algorithms **Strand 2 Information Technology** • Collecting data. **Strand 3 Digital Literacy** • Police use software to create e-fits of potential criminals.	**Strand 1 Computer Science** • Design a computer game in a block-based IDE for a given audience. • How to sequence code. • Which scratch block shows selection and iteration. **Strand 2 Information Technology** • Analyse computer games, considering audience, design and usability. **Strand 3 Digital Literacy** • The consequence of not testing software.

High Performance Learning
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YEAR 7	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
What students will be able to do	**Strand 1 Computer Science** • Identify a websites URL **Strand 2 Information Technology** • Use the school's network and cloud-based systems Logging on to school systems. • Use presentation software on the cloud. • Use digital templates to complete a task. **Strand 3 Digital Literacy** • Behave safely in a computer room • Report e-safety concerns (School, CEOP and Child line) • Adhere to the school's user agreement	**Strand 1 Computer Science** • Identify hardware and software and select relevant components for a purpose. **Strand 2 Information Technology** • File management • Develop further skills using digital templates. **Strand 3 Digital Literacy** • Develop the use of effective internet use. • Use of presentation software to create slideshows including formatting, layout and multimedia elements. • Use spreadsheet software to display information in a clear way.	**Strand 1 Computer Science** • Binary and converting between denary and binary. • Add two binary numbers together. • ASCII. • Decrypt ciphers. **Strand 2 Information Technology** • Using digital templates to complete a task – excel. • Use file management on the cloud. **Strand 3 Digital Literacy** • Using the school network, respectfully, safely and securely. • Use spreadsheet software to display information in a clear way.	**Strand 1 Computer Science** • Identify threats and preventions to a computer system. • Use scenarios to decide if the Computer Misuse Act applies. **Strand 2 Information Technology** • Creating their own digital artefacts to display learning. **Strand 3 Digital Literacy** • Identify anti-virus programs do not protect from all Malware.	**Strand 1 Computer Science** • Create algorithms to solve a problem. **Strand 2 Information Technology** • Use the flowchart shape tools. • Use the crop and snip tool. • Use the picture tools to format an image • Use of an iPad to solve a problem. **Strand 3 Digital Literacy**	**Strand 1 Computer Science** • Create a working computer game, using a block-based visual programming language (Scratch). • Test code using a test table. **Strand 2 Information Technology** • Selecting the correct software to write a program. • Design a game with separate components **Strand 3 Digital Literacy** • Compare different computer games for a given audience.