Curriculum Map – Year 7 – Computing (2024-25)

Topic Name	Term	Skills Developed	Link to NC Subject Content	Next link in curriculum	Other Notes
Introduction to Computing: E-Safety and File Management	Autumn 1	● *Basic knowledge of file management with Windows 10. Creating directory structures.* ● *Safe and responsible use of technology and social media.* ● *Online threats such as virus, spyware and ransomware.* ● *Online privacy issues.*	● *Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.*	● *Impacts of Computing Project (Year 7 Summer 2)*	*Taught over a series of individual lessons at the start of Year 7 along with how to log in to school network, use the school VLE and email.* **Links to Prior Learning:** KS2: Safe, responsible and respectful use of technology
Computer Systems	Autumn 1	● Definition of a computer system and different types of computer system ● Understanding the difference between input, output and storage devices, hardware and software. ● Storage devices and Units of storage from bit to GB.	● *Understand the hardware and software components that make up computer systems.*	● *Computer Systems 2 – Year 8 (Autumn 1)*	Foundations for GCSE sections 1.1/1.2/1.3 **Links to Prior Learning:** N/A

Data Representation 1	Autumn 2	• How computers represent and add numbers using binary. • *Understanding of logic gates and circuit diagrams.* • *Truth table and Boolean algebra representation of circuits.*	• *Understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal.* • *Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming.*	• *Representing Data 2 (Year 8 Autumn 2)*	**Links to Prior Learning:** N/A
Computational Thinking	Spring 1	• Key aspects of Computational Thinking: Abstraction, decomposition, and pattern recognition. • Basic flowchart symbols (terminators/input/output/process etc). • Combining symbols to create algorithms (showing sequence, selection and iteration).	• *Understand several key algorithms that reflect computational thinking.* • *Use logical reasoning to compare the utility of alternative algorithms for the same problem.* • *Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems.*	• *Searching Algorithms (Year 8 (Summer 1)* • *Python Programming 1 (Spring 2 Year7)*	Some of the algorithms designed / created will be coded in the next year 7 unit. Foundations for GCSE section 2.1 **Links to Prior Learning:** KS2: Logical Reasoning. Detect and correct errors in algorithms

| Python Programming 1 | Spring 2 | • Simple Python input and output commands
• Programs involving user input.
• Data types
• Sequences
• Selection and nested selection.
• Implementing some of the algorithms developed in the Computational Thinking/Designing Algorithms topic. | *Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems.*

Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems

Understand several key algorithms that reflect computational thinking

Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming | • *Python Programming 2 – Year 8 Spring 2)* | Foundations for GCSE section 2.2 and 2.3

Links to Prior Learning:

KS2: Sequence/Selection/Iteration in programs.

Design, write and debug programs. |
| Web Design – HTML/CSS | Summer 1 | • Basic structure of websites.
• HTML tags
• HTML tag attributes
• Cascading Style Sheet (CSS) use.
• Application of skills to develop a website of their own choice. | *Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems.*

Undertake creative projects that involve selecting, using, and combining multiple applications. | • *Computer Networks (how the Internet works) - Year 9 Spring 1* | **Links to Prior Learning:**

KS2: select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs |

| Impacts of Computing Project – Environmental Issues | Summer 2 | • Environmental impact on the growth of computing technology. | • *Create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability*

• *Undertake creative projects that involve selecting, using, and combining multiple applications.* | • *Impacts of Computing Project – Social and Ethical Issues – (Year 8 Summer 2)* | Online research and data analysis used here.

Foundations for GCSE section 1.6

<mark>Links to Prior Learning:</mark>

KS2:

use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content

Collecting, analysing, evaluating and presenting data and information |