Subject: *ICT & Computing*

Year Group: *10*   (Timelines e.g., Autumn 1 can be adjusted depending on the needs of the subject area to ensure a fair reflection of the cohort's curriculum intent).

Mega Concepts: **Hardware – Software – Binary - Computational Thinking – Algorithms - Logic – Math – Pseudocode - Communication** (These core strands are the fundamental building block to computing curriculum)

Content Delivered Core knowledge		Content Delivered Core knowledge		Content Delivered Core knowledge	
Autumn 1 September – October	**Autumn 2 November – December**	**Spring 1 January - February**	**Spring 2 March - April**	**Summer 1 April - May**	**Summer 2 June-July**
Computer Architecture Programming Constructs (Sequence Selection Iteration)	Memory and Storage Representing Data Data Structures (Up to 2D Array)	Compression Networks Introduction to Functions and Procedures	Network Security Operating Systems Writing to File/ Reading from File	Ethical and Legal Coding Project	Coding Project
Key Curriculum Skills: Hardware Software - Binary	**Key Curriculum Skills: Hardware Software Binary**	**Key Curriculum Skills: Hardware Software – Computational Thinking - Communication**	**Key Curriculum Skills: Hardware Software – Computational Thinking – Communication - Binary**	**Key Curriculum Skills: Hardware Software – Computational Thinking**	**Key Curriculum Skills: Hardware Software – Computational Thinking**
1: Understand how instructions are stored and executed within a computer system 2: use sequence, selection, and repetition in programs; work with variables and various forms of input and output	1: make appropriate use of data structures [for example, lists, tables or arrays] 2: understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits	Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems

Opportunity to study aspects of information technology and computer science at sufficient depth to allow them to progress to higher levels of study or to a professional career. | Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems

Opportunity to study aspects of information technology and computer science at sufficient depth to allow them to progress to higher levels of study or to a professional career. | Understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to identify and report a range of concerns.

Develop and apply their analytic, problem-solving, design, and computational thinking skills | Develop and apply their analytic, problem-solving, design, and computational thinking skills |
| **Key Knowledge (Cultural Capital and Content):** | **Key Knowledge (Cultural Capital and Content):** | **Key Knowledge (Cultural Capital and Content):** | **Key Knowledge (Cultural Capital and Content):** | **Key Knowledge (Cultural Capital and Content):** | **Key Knowledge (Cultural Capital and Content):** |
| **Key Terminology:** CPU Registers Cache | **Key Terminology:** RAM ROM Virtual Memory | **Key terminology** Internet Network LAN | **Key Terminology** Malware Phishing Brute force | **Key Terminology** Data Protection Computer Misuse Copyright | **Key Terminology** Sequence Selection Iteration |

RAM ROM	Primary Storage Secondary Storage Flash Memory Magnetic Storage Optical Storage Solid State Binary Bit Nibble Byte Kilobyte Megabyte Gigabyte Terabyte Hexadecimal	WAN Bandwidth DNS IP TCP Protocol Ethernet Wi-fi Router Hub Switch	Denial of service Data interception and theft SQL injection Viruses Trojans Worms Ransomware Spyware Adware Firewall Spam filter Anti-virus Anti-spyware Anti-spam ============= Graphical (GUI) Command line Menu driven Natural language Multitasking Memory Management Device Driver File Management Utility Software Defragmentation Encryption Compression	———————— Sequence Selection Iteration Variable Constant Casting Data Type Function Procedure Abstraction Decomposition Algorithm	Variable Constant Casting Data Type Function Procedure
Assessment:	**Assessment:**	**Assessment:**	**Assessment:**	**Assessment:**	**Assessment:**
Architecture online Quiz **1.1 Architecture written Assessment**	Online Quizzes: Memory and Storage Representation data (Images) Representing data (Sound) Lists and arrays Written Assessments	Online Quizzes: Networks Functions and Procedures Written Assessments 1.4 Networks	Online Quizzes: Network Security Operating System Written Assessments 1.5 Network Security 1.6 Operating Systems	Online Quizzes: Legislation Python for GCSE Written Assessments 1.7 Legislation Project	Written Assessment End of year Mocks

		1.2 Memory and Storage 1.3 Representing Data			
Literacy Curriculum:	**Literacy Curriculum:**	**Literacy Curriculum:**	**Literacy Curriculum:**	**Literacy Curriculum:**	**Literacy Curriculum:**
Countdown Puzzle starter: Match Keyword to definition Computational thinking exercises Written assessment Student Learning Record Etymology and Vocabulary	Countdown Puzzle starter: Match Keyword to definition Computational thinking exercises Written assessment Student Learning Record Etymology and Vocabulary	Countdown Puzzle starter: Match Keyword to definition Computational thinking exercises Written assessment Student Learning Record Etymology and Vocabulary	Countdown Puzzle starter: Match Keyword to definition Computational thinking exercises Written assessment Student Learning Record Etymology and Vocabulary	. Countdown Puzzle starter: Match Keyword to definition Computational thinking exercises Written assessment Student Learning Record Etymology and Vocabulary	Revision – Passed Paper questions Written assessment Reading: Revision Text
Home Learning	Home Learning	Home Learning	Home Learning	Home Learning	Home Learning
Flip Learning: https://youtu.be/t8H6-anK0t4 Python Coding Challenges	Flip Learning (Students watch video at home make notes and bring notes to lesson) https://www.youtube.com/watch?v=tsH7IGcWSLg https://www.youtube.com/watch?v=dhQOkkZXu5w&list=PLCiOXwirraUCaJP5LxCsFXWgX1_S-liGM https://www.youtube.com/watch?v=Q2pzT6oYPWg&list=PLCiOXwirraUCaJP5LxCsFXWgX1_S-liGM&index=2 https://www.youtube.com/watch?v=M31SS70Od08&list	Flip Learning (Students watch video at home make notes and bring notes to lesson https://www.youtube.com/watch?v=ZAMbMcYqK_0&list=PLCiOXwirraUCTooN8MYg4RDWF3FUC7JBU https://www.youtube.com/watch?v=KDnHXq-trQk&list=PLCiOXwirraUCTooN8MYg4RDWF3FUC7JBU&index=2 https://www.youtube.com/watch?v=3qRCxu9C_AI&list=PLCiOXwirraUCTooN8MYg4RDWF3FUC7JBU&index=3 https://www.youtube.com/watch?v=SrZd6uqr8rs&list=PLCiOXwirraUCTooN8MYg4RDWF3FUC7JBU&index=4 https://www.youtube.com/watch?v=5-IY6UGZF4s&list=PLCiOXwirraUCTooN8MYg4RDWF3FUC7JBU&index=5 https://www.youtube.com/watch?v=rbMm6BJM1jg&list=PLCiOXwirraUCTooN8MYg4RDWF3FUC7JBU&index=6	Flip Learning (Students watch video at home make notes and bring notes to lesson https://www.youtube.com/watch?v=tHly47IhAqQ https://www.youtube.com/watch?v=lOAMkJSjy2k	Flip Learning (Students watch video at home and bring notes to lesson https://www.youtube.com/watch?v=NSFjAaGeJfY&list=PLCiOXwirraUCJmKc7xDNgrKdUNIxIeQbi https://www.youtube.com/watch?v=6zTOHgTT9qw&list=PLCiOXwirraUCJmKc7xDNgrKdUNIxIeQbi&index=2 https://www.youtube.com/watch?v=fHOHOqIdhh8&list=PLCiOXwirraUCJmKc7xDNgrKdUNIxIeQbi&index=3 https://www.youtube.com/watch?v=g91-xCNv8-E&list=PLCiOXwirraUCJmKc7xDNgrKdUNIxIeQbi&index=4	Flip Learning (Students watch video at home make notes and bring notes to lesson

| | =PLCiOXwirraUCaJP5LxCsFXWgX1_S-liGM&index=3
https://www.youtube.com/watch?v=FNwA-h_tfPo&list=PLCiOXwirraUCaJP5LxCsFXWgX1_S-liGM&index=4
https://www.youtube.com/watch?v=qIy_wgo03Oo&list=PLCiOXwirraUCaJP5LxCsFXWgX1_S-liGM&index=5
https://www.youtube.com/watch?v=xfDwcdap5LA&list=PLCiOXwirraUCaJP5LxCsFXWgX1_S-liGM&index=6
https://www.youtube.com/watch?v=jBXWZbHPLWI&list=PLCiOXwirraUCaJP5LxCsFXWgX1_S-liGM&index=7 | Python Coding Challenges | | https://www.youtube.com/watch?v=Mh2t_bp5qgc&list=PLCiOXwirraUCJmKc7xDNgrKdUNIxIeQbi&index=5

https://www.youtube.com/watch?v=cswBJir5Sd0&list=PLCiOXwirraUCJmKc7xDNgrKdUNIxIeQbi&index=6

https://www.youtube.com/watch?v=49IVvPiiGP4&list=PLCiOXwirraUCJmKc7xDNgrKdUNIxIeQbi&index=7 | |