Subject Group	Subje ICT & Computer Science
	Set

Threshold Concepts		

Curriculum Map

CITY OF LONDON ACADEMIES TRUST

Year 7

	Term Aut 1 Unit 1	Term Aut 2 Unit 2	Term Spr 1 Unit 3	Term Spr 2 Unit 4	Term Sum 1 Unit 5	Term Sum 2 Unit 6
	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage
Unit Title	**Using-computers-safely-effectively-and-responsibly**	**Computer Basic**	**Spreadsheets**	**Programming Essentials pt1**	**Programming Essentials pt2**	**Using Media**
Knowledge / Skills	**At the end of this Unit all pupils should be able to:** - Use basic file management techniques to create folders, save, copy, move, rename and delete files and folders - Understand how to upload and download work from google classroom - Use our email platform effectively. To be able to send emails to multiple people and use attachments - Work collaberatively to identify the pros and cons of social networking sites - Research and present findings about e-safety. Students to understand what makes a good presentation	**At the end of the Unit all pupils should be able to:** - Identify input and output devices - Explain how different parts of the computer work - Explain how to stay safe when using a computer - Decode binary numbers - set up wireless Internet at home. - Explain the difference between a LAN and a WAN	**At the end of this Unit all pupils should be able to:** - Identify columns, rows, cells, and cell references in spreadsheet software - Use formatting techniques in a spreadsheet - Use basic formulas with cell references for calculations in a spreadsheet (+, -, *, /) - Use the autofill tool to replicate cell data - Use formulas with to calculate and create new data - Explain the difference between data and information - Explain the difference between primary and secondary sources of data	- Recognise that computers follow the control flow of input/process/output - Define a variable as a name that refers to data being stored by the computer - Identify that selection uses conditions to control the flow of a sequence - Create conditions that use logic operators (and/or/not) - Describe the need for iteration - Identify where count-controlled iteration can be used in a program	- Define a subroutine as a group of instructions that will run when called by the main program or other subroutines - Define decomposition as breaking a problem down into smaller, more manageable subproblems - Define a list as a collection of related elements that are referred to by a single name - Describe the need for lists - Identify when lists can be used in a program	- Select the most appropriate software to use to complete a task - Identify the key features of a word processor - Apply the key features of a word processor to format a document Select appropriate images for a given context - Apply appropriate formatting techniques - Demonstrate an understanding of licensing issues involving online content by applying appropriate Creative Commons licences
Lit / Num	Netiquette, writing emails	Computer hardware, binary and denary numbers, base 10/base 2 systems	Formulas, Operators, Functions	Programming, Algorithms, Sequence	Programming, Algorithms, Sequence	Problem solving, using software to solve problems
Enrichment	responsibility, safety and confidence when using computers	Confidence while using computer technology	Using computers to help carry out calculations	problem-solving, breaking down problems into smaller chunks	problem-solving, breaking down problems into smaller chunks	Identifying what softwares provide additional features for users
British Vals	rule of law: students know specific rules and consequences if breaking any	How computers can help improve communication with people around the world and how its possible	How computers can be used to impact society positively	mutual respect: students will listen and adapt work with feedback from teacher and peers	mutual respect: students will listen and adapt work with feedback from teacher and peers	How computers can be used to impact society positively
Character	self-confidence, independence, public speaking	Computer knowledge and confidence	self-confidence, independence	resilience, confidence	resilience, confidence	resilience, confidence
Careers	cyber security, system security	IT Technician, Network manager	Accounting, Data analysis	Software developer	Software developer	Software tester, Software engineer

Year 8

	Term Aut 1 Unit 7	Term Aut 2 Unit 8	Term Spr 1 Unit 9	Term Spr 2 Unit 10	Term Sum 1 Unit 11	Term Sum 2 Unit 12
	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage
Unit Title	**Understanding Computers**	**Web Development**	**Mobile App Development part 1**	**Mobile App Development part 2**	**Vector Graphics**	**Computer Networks**
Knowledge / Skills	**At the end of this Unit all pupils should be able to:** Distinguish between hardware and software Give examples of computer hardware and software Draw a block diagram showing CPU, input, output and storage devices Name different types of permanent storage device Suggest appropriate input and output devices for a simple scenario Explain what RAM and ROM are used for Show how numbers and text can be represented in binary Explain the impact of future technologies	**At the end of this Unit all pupils should be able to:** Will learn the basics of HTML and CSS, and how to create a responsive design which adapts to any size of screen for viewing on, say, a mobile phone or a PC. They will learn how to create text styles and add content, including text and graphics, in a specified position on a page, as well as navigation links to other pages on their website and to external websites. The basics of good design are covered and, with the help of worksheets, pupils will develop their own templates in a text editor such as Notepad. They will decide on a topic for their websites, document their designs and collect suitable text and images.	**At the end of this Unit all pupils should be able to:** Run simple JavaScript. Understand basic flowchart symbols Write programs using different types of data (e.g. strings and integers) Decompose a problem using a flow chart or pseudocode	**At the end of this Unit all pupils should be able to:** Correctly use different variable types (e.g. integer and floating point), assignment statements, arithmetic operators Distinguish between syntax and logic errors and be able to find and correct both types of error Use comments to document their programs and explain how they work Write an error-free, well-documented program involving sequence, selection and iteration, but with some help given Design a simple app using app lap.	**At the end of this Unit all pupils should be able to:** The opportunity to design graphics using vector graphic editing software. By the end of the unit learners will have produced an illustration, a logo, or some icons using vector graphics. The lessons are tailored to Inkscape (inkscape.org), which is open source and cross-platform, but the resources should be readily adaptable to any vector graphics editor. Vector graphics can be used to design anything from logos and icons to posters, board games, and complex illustrations. Through this unit, lpupils will be able to better understand the processes involved in creating such graphics and will be provided with the knowledge and tools to create their own.	**At the end of this Unit all pupils should be able to:** unit covering the basic principles and architecture of local and wide area networks. Pupils will learn that the World Wide Web is part of the Internet, and how web addresses are constructed and stored as IP addresses. Client-server, peer-to-peer networks and the concept of cloud computing are all described. Ways of keeping data secure and simple encryption techniques are also covered.
Lit / Num	components of a computer, CPU	html, css, hyperlinks, webpage design, navigation, use of text and images	javascipt, variables, conditional statements - if and while, data types	problem solving, alogorithms	Design, Graphics, Bitmap, Vector images	LANs and WANs, protocols and topologies
Enrichment	Knowledge of the different parts of a computer system	design their own webpage	app design, problem solving skills	Design and troubleshoot home computer networks - use internet safely	Prinicples for designing in Inkscape using vector images	problem-solving, breaking down problems into smaller chunks
British Vals	How computers can be used to impact society positively	mutual respect: students will listen and adapt work with feedback from teacher and peers	How computers can be used to impact society positively	mutual respect: students will listen and adapt work with feedback from teacher	Rule of law, Individual Liberty	mutual respect: students will listen and adapt work with feedback from
Character	Morals, computer knowledge, independence, confidence	resilience, confidence	Morals, computer knowledge, independence, confidence	resilience, confidence	Morals, computer knowledge, independence, confidence	resilience, confidence

	Careers	IT technician, systems analyst		Software developer		IT technician, systems analyst, Online Safety		Software developer		IT technician, systems analyst	Software developer
Year 9		Term Aut 1 Unit 13		Term Aut 2 Unit 14		Term Spr 1 Unit **15**		Term Spr 2 Unit 16		Term Sum 1 Unit 17	Term Sum 2 Unit 18
		Curriculum/Syllabus Coverage		Curriculum/Syllabus Coverage		Curriculum/Syllabus Coverage		Curriculum/Syllabus Coverage		Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage
	Unit Title	**Cyber Security**		**Web Development with Dreamweaver**		**Image Manipulation with Abode Photoshop**		**Python Programming**		**Physical Computing with BBC Microbit**	**Animation with Blender**
	Knowledge / Skills	**At the end of this Unit all pupils should be able to:** Understand techniques used by cybercriminals to steal data, disrupt systems, and infiltrate networks. Pupils will start by considering the value of their data to organisations and what they might use it for. They will then look at social engineering techniques used by cybercriminals to try to trick users into giving away their personal data. The unit will look at the more common cybercrimes such as hacking, DDoS attacks, and malware, as well as looking at methods to protect ourselves and our networks against these attacks.		**At the end of this Unit all pupils should be able to:** Define the technologies that make up the internet and World Wide Web. Starting with an exploration of the building blocks of the World Wide Web, HTML, and CSS, learners will investigate how websites are catalogued and organised for effective retrieval using search engines. By the end of the unit, learners will have a functioning website made up of single or multiply pages.		**At the end of this Unit all pupils should be able to:** Use photoshop to create, manipulate images for a varity of purposes. Pupils will learn all the standard tools avaliable such as Move Tool, Magic wand and text tools. In addition, pupils will learn to cropping, resizing and rotating images, retouching and repairing images, effects and filters, using the selection tools, image transformations, point, paragraph and path type, type transformations, masks and effects, and the use of layers. By the end of this unit, pupils will create a poster for a scenario chosen by the teacher.		**At the end of this Unit all pupils should be able to:** Create simple programs involving input and output, and gradually moves on through arithmetic operations, randomness, selection, and iteration. Emphasis is placed on tackling common misconceptions and elucidating the mechanics of program execution. Understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation. Analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems.	**At the end of this Unit all pupils should be able to:** Enhance programming skills in a new engaging context: physical computing, using the BBC micro: bit. Pupils will be acquainted with a host of components built into the micro:bit, and write simple programs that use these components to interact with the physical world. In the process, they will refresh their Python programming skills and encounter a range of programming patterns that arise frequently in physical computing applications. Pupils will build a physical computing project. They will be required to select and design their project purposefully, apply what they have learnt by building a prototype, and keep a structured diary throughout the process.	**At the end of this Unit all pupils should be able to:** Create 3D animations using the industry-standard software package, Blender. By completing this unit pupils will gain a greater understanding of how this important creative field is used to make the media products that we consume. Lessons will take pupils through the basics of modelling, texturing, and animating; outputs will include 3D models, short videos, and VR. Links are made throughout to computer science, computational thinking, and the world of work. Tools and techniques learnt in this unit can also be used for 3D printing.
	Lit / Num	Key-terms in cybersecurity social bots, iruses, trojans, ransomware, anti-virus, security patches and adware blockers		Image width and height - calculating the aspect ratio of an image. HEX code for HTML colours		Use of photoshop and all the standard tools needed to create a poster. Design, image manipulation, aspect ratio, colour balance		Learn a textual with its own grammer and rules. Variables and constant, binary numbers. assignment expressions.		Algebraic equations, number system, problem solving	Geometry Lines, vectors and planes
	Enrichment	Understanding the functions of different computer hardware, The different uses of software		Create personal website to showcase their work, safely use the internet		Create / Design documents using photoshop		Concepts of programming, variables, data types, sequence, selection and iteration,		Concepts of programming, variables, data types, sequence, selection and iteration,	Create short animation for a of purposes
	British Vals	Rule of Law (Computer Misuse Act 1990) , Individual Liberty, Mutual Respect for others		Individual Liberty, Mutual Respect, Rule of Law (Copyright Act 1988)		Rule of Law - Copyright laws and use of intellectual property		Individual Liberty - expressions through prgramming		Individual Liberty - Express creativity through programming that interacts with the real world	Rule of Law - Credit creator for animations used in main project
	Character	Morals, computer knowledge, independence, confidence		Morals, computer knowledge, independence, confidence		Rule of Law: Use examples of how in the UK law is encouraged and there are laws to ensure that they use images lawfully		confidence, independence in how programs are produced		Resilience, Confidence	Resilience
	Careers	IT technician, systems analyst, computer engineer, network analyst		Website Designer, systems analyst, computer engineer		Graghic Design, Website Designer, Illustrator		Software developer, Data anaylst, System analyst		software developer	Animator, 3D Graphic Designer

		Term Aut 1 Unit 1		Term Aut 2 Unit 2		Term Spr 1 Unit 3		Term Spr 2 Unit 4		Term Sum 1 Unit 5	Term Sum 2 Unit 6
		Curriculum/Syllabus Coverage		Curriculum/Syllabus Coverage		Curriculum/Syllabus Coverage		Curriculum/Syllabus Coverage		Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage
	Unit Title	**System Architecture, Memory and Storage**		**Wired and Wireless Networks**		**System Software and Security**		**Ethical, Legal And Environmental Concerns**		**Algorithms**	**Logic And Languages**

Year 10 Computer Science							
	Knowledge / Skills	**At the end of this Unit all pupils should be able to:** Understand the purpose of the CPU Explain the role and operation of the following CPU registers used in Von Neumann architecture: MAR (Memory Address Register), MDR (Memory Data Registers), Program Counter and Accumulator Describe common CPU components and their function: (ALU Arithmetic Logic Unit), CU (Control Unit), Cache Purpose of RAM and ROM Difference between RAM and ROM Virtual memory and flash memory Calculate data capacity requirements Select suitable storage devices and storage media for a given application and the advantages and disadvantages these, using characteristics: capacity, speed, portability, durability reliability and cost	**At the end of this Unit all pupils should be able to:** Be familiar with Local and Wide Area Network types Understand the factors that affect network performance Explain the different roles of computers within client-server and peer-to-peer networks Identify and describe the hardware needed to connect stand-alone computers into a LAN: Understand that the Internet is a worldwide collection of computer networks Use of virtual networks Describe mesh and star network topologies Explain Wi-Fi, frequency and channels, and encryption Understand the uses of IP addressing and MAC addressing Describe different protocols including TCP/IP, HTTP, HTTPS, FTP, POP, IMAP, SMTP Describe the concept of layers network packet switching	**At the end of this Unit all pupils should be able to:** Understand forms of attack and threats to a network (social engineering) including brute force attacks, denial of service attacks, data interception and theft, the concept of SQL injection, poor network policy Identify and explain ways to prevent vulnerabilities including penetration testing network forensics network policies, anti-malware software, firewalls, user access levels, passwords, encryption Describe the purpose and functions of an operating system with reference to, user interface, memory management / multitasking, peripheral management and drivers, user management, file management Describe the purpose and functions of common utility programs, encryption software, defragmentation, data compression Describe the role and methods of backup, full, incremental	**At the end of this Unit all pupils should be able to:** Investigate the following issues related to Computer Science technologies: Ethical issues Legal issues Cultural issues Environmental issues Privacy issues Understand how key stakeholders are affected by technologies Consider the environmental impact of Computer Science Consider the cultural implications of Computer Science Compare open source with proprietary software Study legislation relevant to Computer Science: The Data Protection Act 1998 Computer Misuse Act 1990 Copyright Designs and Patents Act 1988 Creative Commons Licensing Freedom of Information Act 2000	**At the end of this Unit all pupils should be able to:** Understand and apply computational thinking methods including abstraction, decomposition and algorithmic thinking Understand and trace linear and binary searching algorithms Describe and trace bubble, insertion and merge sort algorithms Learn how to produce algorithms using flow diagrams and pseudocode Interpret, correct or complete algorithms	**At the end of this Unit all pupils should be able to:** Draw simple logic diagrams using the operations AND, OR and NOT Draw truth tables Apply logical operators in appropriate truth tables to solve problems Describe defensive design considerations: input sanitisation/validation, planning for contingencies, anticipating misuse, authentication Use comments and indentation to assist maintainability of programs Understand the purpose of testing Describe types of testing: iterative and terminal Learn how to identify syntax and logic errors Select and use suitable test data Describe the characteristics and purpose of different levels of programming language, including low-level language
	Lit / Num	algebraic equations, number system, problem solving Literacy: comprehension of articles, and using application and analysis skills in writing	Students are able to research the different types of networks and layers. Students are able to look through different types of networks and explain how these affect performance.	Understanding of Transmissons speeds mbps, gbps. Able to tell the difference between phishing, and spam email. Avoid email viruses Implement good secuirty habits on home network	Understand how different laws etc. govern technology and whether these are ethical. Students should be able to understand how these impact on privacy and breaching data of consumers	algebraic equations, number system, problem solving	boolean algebra, binary numbers
	Enrichment	Students work through examples and animations of the fetch decode execute cycle. They also act this out. Student have an opportunity to see different types of memory and storage mediums	Students work out how different networks work and watch videos/presentations on this	**CyberFirst programme** of opportunities to help young people explore their passion for tech by introducing them to the world of cyber security	Research skills, Problem solving, Critical thinking of how ethical, cultural and environmental issues affect technology and the impact of society. Students research different case students	rule of law: students know specific rules and consequences if breaking any	democracy: discussions will take place where everyone will have a say
	British Vals	Democracy, mutual respect, rule of law , personal liberty	How democracy impacts networks and how government censors this. The impact on their personal freedom and liberty	Rule of Law: Ethical Hacking vs Criminal Hacking	Rule of law - Look through real world examples such as cases of copyright infringement, computer misuse act and the consequences of breaking such laws.	resilience, confidence	confidence
	Character	Democracy, mutual respect, rule of law , personal liberty	Democracy, mutual respect, rule of law , personal liberty	Aware of cyber security isuues faced by individuals and organisations	Democracy: classroom discussions to be open, giving every student time and space to voice their opinions and develop their understanding Personal Liberty: learning about different	confidence	confidence
	Careers	Network or database manager, system analysis. Computer engineer	Network manager, security expert, programmer	Cyber Security Consultant and Network Admin	Consultancy, Politics, Cyber security or web manager	mathematician - Big Data Analyser - AI Developer	software tester - Software Developer

		Term	Aut 1	Unit	7	Term	Aut 2	Unit	8	Term	Spr 1	Unit	9	Term	Spr 2	Unit	28	Term	Sum 1	Unit	29	Term	Sum 2	Unit	30
		Curriculum/Syllabus Coverage				Curriculum/Syllabus Coverage				Curriculum/Syllabus Coverage				Curriculum/Syllabus Coverage				Curriculum/Syllabus Coverage				Curriculum/Syllabus Coverage			
	Unit Title	**Introduction to Programming Project**				**System Security And Software**				**The Internet And Networks And Algorithms**				**Exam Preparation**				**Exam Preparation**				**Exam Preparation**			

Year 11 Computer Science							
	Knowledge / Skills	**At the end of this Unit all pupils should be able to:** This component is the non-exam assessment where pupils will be challenged by a range of exciting and engaging tasks to apply the knowledge and skills they have learned. Skills that will be assessed: Programming techniques, Analysis, Design, Development, Testing and evaluation and conclusions, Data Types & Operators	**At the end of this Unit all pupils should be able to:** Understand Network Threat Understand forms of attack and threats posed to a network: Malware, Phishing, Social engineering, Brute force attacks, Denial of service attacks, Data interception and theft, SQL injection, Poor network policy, Identifying and preventing vulnerabilities, penetration testing, network forensics, network policies, anti-malware software, firewalls, user access levels, passwords, encryption Operating system software Identify and understand how to prevent vulnerabilities including the use of: penetration testing, network forensics, network policies, anti-malware software, firewalls, user access levels, passwords and encryption Explain the need for the following functions of an operating system: provision of a user interface, memory management and multitasking, peripheral management and drivers, user management, file management, Utility software, Describe the purpose and use of common utility software:, encryption software, defragmentation software, data compression software, Describe the role and methods of backup: full and incremental	**At the end of this Unit all pupils should be able to:** How the internet Works Define a Wide Area Network, Describe the nature of the Internet as a worldwide collection of computer networks, Explain the need for IP addressing of resources on the Internet and how this can be facilitated by the role of DNS service to Understand the need for Network Interface Cards and the uses of MAC addressing, explain packet switching The Local Network Describe the difference between a Local Area Network and a Wide Area Network, Describe star and mesh network topologies, Describe routers and switches needed to connect stand-alone computers into a Local Area Network, Explain the use of Ethernet standards to transmit data over a wired network, Explain the concept of virtual networks Wireless Network Explain the need for Wireless Access Points (WAP) to create wireless hotspots, Explain wireless data transmission including:, Frequency and channels, Encryption, Client-server and peer-to-peer networks Protocols and layers, Explain the role of computers in client-server and peer-to-peer networks, Explain the advantages and disadvantages of client-server and peer-to-peer networks Hosting and The Cloud Explain the advantages and disadvantages of various transmission media, Describe the factors that affect network performance Protocols and layer including, HTTP, HTTPS, FTP, POP, MAP, SMTP, TCP/IP Algorithms, Computational thinking, Understand and apply computational thinking methods including abstraction, decomposition and algorithmic thinking Flowcharts, Produce algorithms using flow diagrams to Create algorithms to solve problems that you have analysed			
	Lit / Num	Reading for meaning, algorithms, algebra	Understanding of Transmissons speeds mbps, gbps. Able to tell the difference between phishing, and spam email. Avoid email viruses Implement good secuirty habits on home network	Students are able to identifydifferent types of networks and layers. Students are able to look through different types of networks and explain how these affect mance. Reading for meaning, algorithms, algebra			
	Enrichment	democracy: discussions will take place where everyone will have a say	**CyberFirst programme** of opportunities to help young people explore their passion for tech by introducing them to the world of cyber security	Students work out how different networks work and watch videos/presentations on this. Discussions to also take place to clear any misconceptions			
	British Vals	Mutual respect: understanding that stronger views may sometimes be wrong or vice versa	Rule of Law: Ethical Hacking vs Criminal Hacking	How democracy impacts networks and how government censors this. The impact on their personal freedom and liberty			
	Character	Resilience, confidence	Aware of cyber security isuues faced by individuals and organisations	Democracy, mutual respect, rule of law , personal liberty			
	Careers	software developer	Cyber Security Consultant and Network Admin	Network manager, security expert, programmer			

	Term Aut 1 Unit 19	Term Aut 2 Unit 20	Term Spr 1 Unit 21	Term Spr 2 Unit 22	Term Sum 1 Unit 23	Term Sum 2 Unit 24
	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage
Unit Title	**R093**	**R093**	**R094**	**R094**	**R094**	**R097**

Year 10 Creative iMedia							
	Knowledge / Skills	- Media industry (TA1) R093: How style, content and layout are linked to te purpose. - Client requirements and how the are defined (TA2) - Audience demographics and segmentation (TA2) - Media codes used to convey meaning, create impact and/or engage audiences (TA2)	- Work planning and documents used to support ideas generation - Documents used to design/plan media products - Components of workplans phases - pre-production, production, post-production, tasks, activities, workflow, timescales, Milestones, contingencies, resources - hardware, people, software Mind map - digital, hand drawn Mood board - digital, physical	R094: Techniques to plan visual identity and digital graphics - Tools and techniques to create visual identity and digital graphics - Technical skills to source, create and prepare assets for use within digital graphics	R094: Techniques to save and export visual identity and digital graphics (with integrated R093 TA4 distribution considerations and file formats) R094: NEA Assessment (working on)	R094: NEA Assessment (Working on and submit for moderation)	R097: Features and conventions of interactive digital media R097: TA1 Introduction (with R093 key content embedded) R097: Resources required to create interactive digital media products
	Lit / Num	Reading for meaning and reading for understanding	Stages of media production, reading with context in mind	Use of photoshop and all the standard tools needed to create a poster. Design, image manipulation, aspect ratio, colour balance	Use of photoshop and all the standard tools needed to create a poster. Design, image manipulation, aspect ratio, colour balance	Use of photoshop and all the standard tools needed to create a poster. Design, image manipulation, aspect ratio, colour balance	Produce an interpretation of a client brief for a given set task Produce pre-production and planning documentation
	Enrichment	Be able to identify key decisions that need to be made to produce mida products	For students to understand the processes required prior to creating media products	Create / Design documents using photoshop	Create / Design documents using photoshop	Create / Design documents using photoshop	Explain how the intended product meets the client brief and how it appeals to the target audience
	British Vals	Rule of law and individual liberty	Rule of law and individual liberty	Rule of Law - Copyright laws and use of intellectual property	Rule of Law - Copyright laws and use of intellectual property	Rule of Law - Copyright laws and use of intellectual property	Rule of Law - Copyright laws and use of intellectual property
	Character	Independence and resilience	Independence and resilience	Rule of Law: Use examples of how in the UK law is encouraged and there are laws to ensure that they use images lawfully	Rule of Law: Use examples of how in the UK law is encouraged and there are laws to ensure that they use images lawfully	Rule of Law: Use examples of how in the UK law is encouraged and there are laws to ensure that they use images lawfully	Independence and resilience
	Careers	Film editor, camera man, sound technician	Project manager, Lead designer	Graghic Design, Website Designer, Illustrator	Graghic Design, Website Designer, Illustrator	Graghic Design, Website Designer, Illustrator	Media Analyst, Product designer

		Term	Aut 1	Unit	25	Term	Aut 2	Unit	26	Term	Spr 1	Unit	27	Term	Spr 2	Unit	28	Term	Sum 1	Unit	29	Term	Sum 2	Unit	30
		Curriculum/Syllabus Coverage				Curriculum/Syllabus Coverage				Curriculum/Syllabus Coverage				Curriculum/Syllabus Coverage				Curriculum/Syllabus Coverage				Curriculum/Syllabus Coverage			
	Unit Title	**R085**				**R085**				**Coursework Improvements**				**Exam Preparation & Marking/ Moderation**				**Exam Preparation**				**Exam Preparation**			

Year 11 Creative iMedia	Knowledge / Skills	**Learning Objective 2:** - Identify Client Requirements and Target Audience - Create supporting documents susch as work plans and visualisation diagrams - Creation of a test plan for the website - Research legislations when working on websites **Learning Objective 3:** - Gather and prepare assets to be used on the website	**Learning Objective 3:** - Creating a masterpage on dreanweaver - Ceating a functional website with multiple web pages - Testing the website **Learning Objective 4:** - An evaluation of the project from start to finish. Explanation of how the website meets the needs of the client - Critique the final product by identify the positives and negatives of the final product - Suggest possible improvements to the final product	- Work marked and students identify where they have dropped marksand what needs to be done to further imrpove their coursework before submission. - R082: Digital Graphics - R085: Creating a multipage website			
	Lit / Num	Produce an interpretation of a client brief for a given set task Produce pre-production and planning documentation	Creating HTML pages, dreamweaver software,	Reviewing work and using feedback to make further improvements			
	Enrichment	Explain how the intended product meets the client brief and how it appeals to the target audience	Create an interactive website that meets the requirements of a client	Learning to self evaluate and identify mistakes in work			
	British Vals	Individual Liberty, Mutual Respect, Rule of Law (Copyright Act 1988)	Individual Liberty, Mutual Respect, Rule of Law (Copyright Act 1988)	Individual Liberty, Mutual Respect, Rule of Law (Copyright Act 1988)			
	Character	Morals, computer knowledge, independence, confidence	Morals, computer knowledge, independence, confidence	Independence and resilience			
	Careers	Project manager, Website Designer, systems analyst, computer engineer	Website Designer, systems analyst, computer engineer	Project manager			

		Term Aut 1 Unit 61	Term Aut 2 Unit 62	Term Spr 1 Unit 63	Term Spr 2 Unit 64	Term Sum 1 Unit 65	Term Sum 2 Unit 66
	Unit Title	Curriculum/Syllabus Coverage System Architecture, System Software, Programming	Curriculum/Syllabus Coverage WebTechnoligies, Subroutines, Computational Thinking	Curriculum/Syllabus Coverage Databases, Networks, Data Structures	Curriculum/Syllabus Coverage Data Representation, Little Man Computing	Curriculum/Syllabus Coverage Boolean Algebra, Ethics in technology, NEA	Curriculum/Syllabus Coverage Graphical Programming, Standard

Year 12	Knowledge / Skills	Learning Objective 1: - The Fetch-Execute cycle and the role of the -registers. -the factors affecting the speed of the Computer -the different types of processors -The best device for solving a problem -meaning and differences of memory and storage - the different components of a computer Learning Objective 2: -the OS functions and types of scheduling -need and uses of different types of OS -difference between OS and Device Drivers - the different kinds of software - the different kinds of languages and how are they converted -the stages of compilation -software classification and translation methods - the different types software Learning Objective 3: -Coding a basic program in Python using an IDE -Coding a selection in Python using an IDE -Coding a iteration in Python using an IDE -Coding a program using String handling in Python using an IDE -Coding a program using File handling in Python using an IDE	Learning Objective 1: -the structure of HTML and basic tags. -the complex HTML tags. -the use of CSS and basic CSS styles -the use of CSS classes and ids -the use of JS and basic JS functions -the use of web forms and basic web form creation -the elements /languages needed for a webpage -the different components of a webpage Learning Objective 2: -Coding a program using in-built subroutines in Python using an IDE -Coding a program using subroutine with no return in Python using an IDE -Coding a program using subroutine with pass by value in Python using an IDE -Coding a program using subroutine with pass by reference in Python using an IDE -Coding a program using subroutine with recurrsion in Python using an IDE -Coding a program using data structures in Python using an IDE Learning Objective 3: -Computational Thinking basics - need for abstraction -Devising an abstract model from reality - Specifying inputs, outputs and preconditions for reusable	Learning Objective 1: -The structure of a relational database -the factors to make a Database 3NF -the different types of SQL statements -The primary considerations regarding transaction processing - the different methods of creating and using a database Learning Objective 2: -URL, IP address, DNS - the features of an internet network - Network security and threats, use of firewalls, proxies and encryption -Page rank algorithm -Web pages and web apps – client-side and server-side scripts - Characteristics, structure, hardware, security and processing of networks Learning Objective 3: - the characteristics of different data Structure -the advantages,disadvantages and usage of queues -need and uses of different types of list traversal -Describe and give examples of stacks -Vertices,edges,Digraph,Arcs,Weighted & Directed graph, nodes,Undirected graph -the properties of a tree and specifically binary trees - How to create, traverse, add data to and remove data from the data structures mentioned above. Learning Objective1 :	Learning Objective 1: -Binary Numbers -the binary units of measurement and need for ASCII and UNICODE -the different types negative representations -The conversion of fixed binary numbers to decimal and vice versa -The conversion of floating binary numbers to decimal and vice versa -types of binary Shift and binary logic truth tables - the different data types and Binary arithmetic and logic operations Learning Objective 2: -Coding a basic program in LMC using an IDE -Understanding how you are addressing memory in a given location - know some of the basic differences between the programming languages Learning Objective 3: -Understanding requirements and marks scheme of NEA -The relative merits and drawbacks of different methodologies and when they might be used	Learning Objective 1: -Logic gates -Logic Circuits -Simplifying Boolean expressions -Problem Identification -Karnaugh Maps -D-type flip-flops, adders and -half-adders - the different logic circuits, truthtables and simplification of Boolean Expressions Learning Objective 2: -4 laws /acts -Understanding the ethics and wider impact of digital technology -Understanding the privacy issues of digital technology Learning Objective 3: -Basic OOp concepts - OOP coding - OOPS concepts Learning Objective 4: -Stakeholders -Research the Problem -Specify the Proposed Solution -Decompose the Problem -Describe the solution -Describe the approach to testing	Learning Objective 1: -P5Js -P5Js with Recursion -P5Js self referential functions Learning Objective 2: -Searching -Bubble sort and insertion sort -Merge sort and quicksort Learning Objective 3: - Recap Yr 12 topics
	Lit / Num	algebraic equations,problem solving Literacy: comprehension of articles, and using application and analysis skills in writing Numeracy: working out how the number of signals on a CPU impacts performance and how this can be improved	Reading for meaning, algorithms, algebra	Students are able to research the different types of networks and layers. Students are able to look through different types of networks and explain how these affect performance.	algebraic equations, number system, problem solving,boolean algebra, binary numbers	Understand how different laws etc. govern technology and whether these are ethical. Students should be able to understand how these impact on privacy and breaching data of consumers.	Reading for Understanding, algorithms, algebra
	Enrichment	Students work through examples and animations of the fetch decode execute cycle. They also act this out. Student have an opportunity to see different types of memory and storage mediums	democracy: discussions will take place where everyone will have a say	Students work out how different networks work and watch videos/presentations on this	democracy: discussions will take place where everyone will have a say	Research skills, Problem solving, Critical thinking of how ethical, cultural and environmental issues affect technology and the impact of society. Students research different case students	democracy: Discussions to also take place to clear any misconceptions
	British Vals	Democracy, mutual respect, rule of law , personal liberty	Mutual respect: understanding that stronger views may sometimes be wrong or vice versa	How democracy impacts networks and how government censors this. The impact on their personal freedom and liberty	confidence	Rule of law - Look through real world examples such as cases of copyright infringement, computer misuse act and the consequences of breaking such laws.	confidence
	Character	Resilience, Confidence, personal liberty	Resilience, confidence	Democracy, mutual respect, rule of law , personal liberty	confidence	Democracy: classroom discussions to be open, giving every student time and space to voice their opinions and develop their understanding Personal Liberty: learning about different perspectives through real life case studies	confidence
	Careers	system analyst. Computer engineer, Software Engineer	software developer, Website Designer,	Network manager, security expert, programmer	Data Analyst - Software Developer	Consultancy, Politics, Computer Designer	software tester - Software Developer, Game Designer

		Term Aut 1 Unit 71	Term Aut 2 Unit 72	Term Spr 1 Unit 73	Term Spr 2 Unit 74	Term Sum 1 Unit 75	Term Sum 2 Unit 76
		Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage
	Unit Title	Web Technologies, DataBases, Data Structures, Ethical Moral and Cultural Issues	Standard Algorithms	Computational Methods	**Exam Preparation**	**Exam Preparation**	**Exam Preparation**

Year 13	Knowledge / Skills	Learning Objective 1: - HTML , CSS, Js -Search Engines -Client -server Processing -Page Rank -Compression, Encryption, Hashing Learning Objective 2: -Relational database,primary key, foreign key, secondary key -SQL – Interpret and modify. -Defining and updating tables using SQL -Transaction processing -ACID (Atomicity, Consistency, Isolation, Durability), record locking and redundancy. Learning Objective 3: -Know how to create, traverse, add data to and remove data from a linked list -Know how to create, traverse, add data to and remove data from a Stack -Know how to create, traverse, add data to and remove data from a Queue and Circular Queue -graph, weighted graph, vertex/node, edge/arc, undirected graph, directed graph, adjacency matrix and an adjacency list Learning Objective 4: - Censorship and Privacy on the Internet -Monitoring Behaviour - Cultural Impact of Digital Technology - Impact of Artificial Intelligence - Impact of Digital Technology on Environment -Data Collection Big data -The Data Protection Act 1998. -The Computer Misuse Act 1990. -The Copyright Design and Patents Act 1988. -The Regulation of Investigatory Powers Act 2000.	Big O notation, Complexity Searching algorithms Binary , linear Sorting algorithms bubble merge quick (Mock Paper analysis) Trees traversing/adding/deleting with Algorithms Dijkistra Algorithm, A* Alogrihtm , travelling salesman	Recap Yr12 Content Abstraction/Decomposition/ storage of data Backtracking Data mining hueristics with A* Algorithm Thinking concurrently performance modelling pipeling visualization Programming caching trace read write code using functions and procedures Recap Recurrision and Object oriented Programming, Thinking logically , Thinking Procedurely			
	Lit / Num	Literacy: comprehension of articles, and using applic	algebraic equations,problem solvingLiteracy: comprehensi	Literacy: comprehension of articles, and using application a			
	Enrichment	democracy: discussions will take place where everyone will have a say	democracy: discussions will take place where everyone will have a say	democracy: discussions will take place where everyone will have a say			
	British Vals	Mutual respect: understanding that stronger views may sometimes be wrong or vice versa	Mutual respect: understanding that stronger views may sometimes be wrong or vice versa	Mutual respect: understanding that stronger views may sometimes be wrong or vice versa			
	Character	Resilience, confidence	Resilience, confidence	Resilience, confidence			
	Careers	software developer, Website Designer, Network manager, security expert, Law	software developer	software developer, Website Designer, Network manager, security expert, Law			