



YEAR 7 ICT CURRICULUM PROGRESSION OVERVIEW

Subject Curriculum Intent:

Making progress in ICT gives immediate returns to the student; a final product which is the culmination of an initial idea and all the stages in between. In the process the student learns to apply skills and to constantly test, review and improve. Explicit computational thinking processes are introduced early in Key Stage 3 and then referenced throughout the curriculum in order to establish problem solving routines and develop a student's confidence in their own decision making as well as learning and applying software specific skills.

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Theme						
Topic	Unit 1: Office 365, School Systems and Hummersknott House Style	Unit 2: Computational Thinking	Unit 3: Computational Thinking in Practice - Scratch	Unit 4: Video Creation with ClipChamp	Unit 5: Using Spreadsheets	Unit 6: Sports Day Animation using DrawPlus
Links to prior learning	Use of online systems and learning environments for m primary school (TEAMS, Classroom, Email etc) Internet Safety		Unit 3: Computational Thinking		Unit 1: Office 365 (spreadsheet skills)	Unit 4: Video Creation (storyboarding)

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Substantive knowledge headlines	Responsibility with logins. Online safety. Organisation using cloud storage (filenames, folders, renaming). Awareness of audience; checking documents, presentation styles. Cloud storage tools; sharing, TEAMS assignments, email.	Decomposing big problems into manageable tasks, applying this to different scenarios, map design and abstraction, representing data graphically, pattern recognition in coding and application of loops, analysing daily tasks and producing algorithmic instructions.	Applying decomposition and abstraction to game scenario and subsequent code, analysing block codes in terms of an algorithm. Scratch codes for variables, behaviours, selection and iteration. Problem solving in order to develop a game.	Planning media products using storyboards, analysing video techniques for impact, researching a collecting content (different media types) and referencing legal issues such as copyright and creative commons. Video creation concepts; timelines, layers, transitions, effects. Exporting considerations; resolution, quality, file size, location, file type.	Understanding scenarios, reading and implementing instructions, analysing data in terms of key formulas (eg. Sum and Average), formatting techniques to make spreadsheets user friendly, representing data in graphs and through conditional formatting. Specific spreadsheet tools such as cell references, column width, fill handle.	Planning media products using storyboards, analysing Stop Frame animation techniques, collecting content and referencing legal issues such as copyright and creative commons. Animation concepts; frames, clone, onion skinning. Exporting considerations; resolution, quality, file size, location, file type.
Disciplinary knowledge headlines	Digital Safety & Digital Literacy Safe online practices Legal and ethical issues Productivity software (word processors, spreadsheets, presentation tools) Cloud computing and collaboration tools	Computational Thinking and Problem Solving Decomposition Pattern recognition Abstraction Algorithm design (basic)	Computational Thinking (see Unit 2) & Programming and Algorithms Programming fundamentals (variables, loops, conditionals) Control structures (if statements, for/while loops)	Information Technology Applications Multimedia design (image, audio, video editing) E-safety and digital citizenship Cloud computing and collaboration tools	Information Technology Applications Productivity software (word processors, spreadsheets, databases, presentation tools)	Information Technology Applications Multimedia design (image, audio, video editing) E-safety and digital citizenship Cloud computing and collaboration tools

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Links to knowledge in future units	Year 7 Unit 2: Computational Thinking Year 7 Unit 4: Video Creation with ClipChamp Year 7 Unit 5: Using Spreadsheets	Year 7 Unit 3: Computational Thinking in Practice - Scratch Year 7 Unit 5: Using Spreadsheets		Year 7 Unit 6: Sports Day Animation using DrawPlus		
Key vocabulary	login, portal, cloud storage, one drive, my files, TEAMS, assignments, saving, filename, folder, attach.	Decomposition, Pattern recognition, Abstraction, Algorithm, scenario, solution, resilience.	block code, variables, behaviours, selection and iteration, operators, stage, sprite, costume, backdrop	edit, media, content, assets, storyboard, annotation, stock content, timeline, split, , trim, fade, duration. transition, export, resolution.	cell, cell references, formulas, column width, fill handle, formatting, wrap text, select, highlight, right click, conditional formatting, colour scales, graph, heading, legend, axis.	storyboard, stop frame, copyright and creative commons, frames, clone, onion skinning, resolution, quality, file size, file type.



YEAR 8 ICT CURRICULUM PROGRESSION OVERVIEW

Subject Curriculum Intent:

Making progress in ICT gives immediate returns to the student; a final product which is the culmination of an initial idea and all the stages in between. In the process the student learns to apply skills and to constantly test, review and improve. Explicit computational thinking processes are introduced early in Key Stage 3 and then referenced throughout the curriculum in order to establish problem solving routines and develop a student's confidence in their own decision making as well as learning and applying software specific skills.

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Theme						
Topic	Unit 1: Python Block Coding: Repeating Shapes - Using EDUBLOCKS	Unit 2: Applied ICT: Analysing Energy Use	Unit 3: What's in the Box?: Computer Components & Hardware	Unit 4: Image Editing - using PixlR	Unit 5: Physical Coding Using Microbits	Unit 6: Web Animation using Flash
Links to prior learning	Year 7: Unit 2 & 3 (computational thinking and coding)	Year 7: Units 4 & 5 (research, presentation, spreadsheets, video)	Year 7: Units 4 & 5 (research, presentation, spreadsheets, video) Year 8: Unit 2 (as above)		Year 7: Unit 2 & 3 (computational thinking and coding) Year 8: Unit 1 (as above)	Year 7: Unit 4: (storyboarding) Year 8: Unit 4 (image editing)

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Substantive knowledge headlines	Key coding constructs/concepts: variables, assignment, operators, selection and iteration. Applying mathematical rule to shapes - The 360 Rule: $360/\text{sides} = \text{angle}$. Creating and editing loop to output various shapes. Nesting iteration to create repeating patterns. For loops and While loops. Pre-defined inputs and user defined inputs. Functions: defining and calling functions. Purpose of functions.	Combining ICT skills: 1. Researching sources of our electricity, presenting the results with consideration to audience, using tools to enhance user experience and interactivity. 2. Analysing Household Energy Use: understanding the KWh, estimating electricity use and using spreadsheet skills to calculate household bills 3. Promoting energy use solutions, applying video creation skills to promote the use of Smart Meters.	Researching components of a computer system: CPU, RAM, ROM, Storage (Magenetic and Solid state) - what are they and what do they do? Presenting CPU concepts of Clock Speed, Cores and Cache (3 C's) Applying spreadsheet skills to costing a self built computer. Applying video skills to promoting the self built computer	Understanding pixels, resolution and impact on quality. Developing image editing skills: crop, cutout & magic mask, eraser, lasso, fill, clone, dodge and burn. Also filters, effects and adjustments. Layers. Exporting and graphic file types: png, jpeg, tiff. Applying skills to developing a promotional graphic for 'Darlington Festival'. Consideration of whether visual images are real or edited - impact on viewer.	Using coding constructs/concepts (variables, assignment, operators, selection and iteration.) to create Rock Paper Scissors game. Downloading to Microbit computer. Using device components (accelerometers. sensors, LED lights, buttons) to test/modift game. Exploring alternative coding projects (applying problem solving to understanding and experimenting with algorithms for selected project)	Researching animated characters then creating a character according to scenario. Applying image editing skills. Saving individual elements (file types: png, jpeg), internet sources: copyright and creative commons). Import to Flash, dveloping Flash animation skills: classic and motion tween, frames and keyframes, frame rate, layers, free transform, libraries, properties. Exporting in appropriate formats (swf, animated gif, movie).

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Disciplinary knowledge headlines	Computational Thinking and Problem Solving Decomposition Pattern recognition Abstraction Algorithm design Programming and Algorithms Programming fundamentals (variables, loops, conditionals) Control structures (if statements, for/while loops)	Information Technology Applications Productivity software (word processors, spreadsheets, databases, presentation tools) Cloud computing and collaboration tools Multimedia design (image, audio, video editing) E-safety and digital citizenship	Computer Systems and Hardware Components of a computer system (CPU, RAM, storage, input/output devices) Types of hardware (internal vs. peripheral)	Information Technology Applications Multimedia design (image, audio, video editing) E-safety and digital citizenship Cloud computing and collaboration tools	Computational Thinking and Problem Solving Decomposition Pattern recognition Abstraction Algorithm design Programming and Algorithms Programming fundamentals (variables, loops, conditionals) Control structures (if statements, for/while loops)	Information Technology Applications Multimedia design (image, audio, video editing) E-safety and digital citizenship
Links to knowledge in future units	Year 8 Unit 5: Physical Coding Using Microbits	Year 8 Unit 4: Image Editing - using PixIR Year 8 Unit 6: Web Animation using Flash	Year 8 Unit 5: Physical Coding Using Microbits	Year 8 Unit 6: Web Animation using Flash		

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Key vocabulary	variables, assignment, operators, selection and iteration, loops, input, shapes, hexagon, octogon, decogon, polygon, range, funcrion, definition.	fossil fuel, carbon, global warming, emissions, renewable, cell references, formulas, column width, fill handle, formatting, highlight, right click, conditional formatting, kilo watt hour.	computer system, central processing unit, random access, read only, memory, storage, magnetic, solid state, clock speed, cores and cache.	crop, cutout & magic mask, eraser, lassoo, fill, clone, dodge and burn, filters, effects, adjustments, layers, graphic file types: png, jpeg, tiff.	variables, assignment, operators, selection and iteration, accelerometers. Sensors.	classic and motion tween, frames and keyframes, frame rate, layers, free transform, libraries, properties.



YEAR 9 ICT CURRICULUM PROGRESSION OVERVIEW

Subject Curriculum Intent:

Making progress in ICT gives immediate returns to the student; a final product which is the culmination of an initial idea and all the stages in between. In the process the student learns to apply skills and to constantly test, review and improve. Explicit computational thinking processes are introduced early in Key Stage 3 and then referenced throughout the curriculum in order to establish problem solving routines and develop a student's confidence in their own decision making as well as learning and applying software specific skills.

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Theme						
Topic	Unit 1: iMedia Taster Project	Unit 2: GCSE Computer Science Taster Project	Unit 3: Applied ICT - Personal Finance	Unit 4: Applied ICT - Festival Planning & Products	Exam Preparation:	Unit 5: Applied ICT - Festival Promotion
Links to prior learning	Year 7: Units 1, 4, 6 (presentation, video creation) Year 8: Units 3, 4 (presentation, image editing)	Year 7: Unit 2 & 3 (computational thinking and coding) Year 8: Unit 1 & 5 (Block Python)	Year 7: Units 4 & 5 Year 8: Units 2 & 4 (research, presentation, spreadsheets, video)	Year 7: Units 4 & 5 Year 8: Units 2 & 4 (research, presentation, spreadsheets, video) Year 9: Unit 1	Year 9: Unit 1, 3 & 4	Year 8: Units 4 & 6 (Video, Animation) Year 9: Unit 4 continued and Exam Preparation Topics

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Substantive knowledge headlines	Interactive Media Project based on iMedia R097: - Mindmap and Moodboard based on scenario - Visualisation diagram of Logo - Wireframe of slide template - Collecting Assets - Developing Interactive media components – Includes links, navigation buttons, video, images, and GUI elements with attention to usability and accessibility - Exporting final product in appropriate format.	Text Based Coding using Python (using EDUBLOCKS). Quiz Game Scenario using: - Variables with appropriate data types - User input - Operators - Selection (if statements and conditions) - Iteration (for & while loops - with range/conditions) - Outputs as print statements	Applying ICT Skills. Researching personal finance, loans and interest. Adapt and develop a loan calculator spreadsheet and model changes in loan amount, interest and loan term. Judge impact of changes (financially and on life choices) Research pay day loans and develop public service resources (presentation/video) to make people aware of risks and dangers.	Applying ICT Skills. According to scenario: - Use appropriate planning documents (mind map, moodboard, visualisation diagrams) to develop Festival theme, logo and promotional material (graphic and animation).	Assignment led preparation for the exam including the following topics: - Pre-production documentation - Target Audience and methods of segmenting potential customers of media products - Camera Angles/Shots as key elements to a range of media products - Hardware/Software requirements and components.	Applying ICT Skills. According to scenario: - Use appropriate planning documents (storyboards, scripts, wireframes) to develop festival promotional video, a comprehensive interactive product and a financial review of the event and model potential profit/loss using the spreadsheet formulas.

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Disciplinary knowledge headlines	Information Technology Applications Productivity software (word processors, spreadsheets, databases, presentation tools) Cloud computing and collaboration tools Multimedia design (image, audio, video editing) E-safety and digital citizenship	Computational Thinking and Problem Solving Decomposition Pattern recognition Abstraction Algorithm design Programming and Algorithms Programming fundamentals (variables, loops, conditionals) Control structures (if statements, for/while loops)	Information Technology Applications Productivity software (word processors, spreadsheets, databases, presentation tools) Cloud computing and collaboration tools Multimedia design (image, audio, video editing) E-safety and digital citizenship	Information Technology Applications Productivity software (word processors, spreadsheets, databases, presentation tools) Cloud computing and collaboration tools Multimedia design (image, audio, video editing) E-safety and digital citizenship	Pre-production documentation and planning Target audience and appropriate presentation styles Camera angles and design techniques. Purpose of hardware/software choices	Information Technology Applications Productivity software (word processors, spreadsheets, databases, presentation tools) Cloud computing and collaboration tools Multimedia design (image, audio, video editing) E-safety and digital citizenship
Links to knowledge in future units	Year 9 Unit 3: Applied ICT - Personal Finance Year 9 Unit 4: Applied ICT - Festival Planning & Products Exam Preparation: Year 9 Unit 5: Applied ICT - Festival Promotion	Exam Preparation: Year 9 Unit 5: Applied ICT - Festival Promotion	Year 9 Unit 4: Applied ICT - Festival Planning & Products Exam Preparation: Year 9 Unit 5: Applied ICT - Festival Promotion	Exam Preparation: Year 9 Unit 5: Applied ICT - Festival Promotion	Year 9 Unit 5: Applied ICT - Festival Promotion	
Key vocabulary	mindmap, moodboard, visualisation diagram, wireframe, assets, interactive media, navigation buttons, exporting, file format.	Python, text based, variables, assignment, operators, selection and iteration, loops, input, output, print.	loans, interest, loan term, debt, repayment, opportunity cost, saving, calculating, modelling, credit card, pay day loan	scenario, client brief, user, requirements, mindmap, moodboard, visualisation diagram, testing, promotion, editing, formatting.	See previous topics' and software specific terminology	storyboards, scripts, wireframes, multimedia, interactive, consistency, master slide, software specific terminology,



YEAR 10 Computer Science CURRICULUM PROGRESSION OVERVIEW

Subject Curriculum Intent:

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	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Theme						
Topic	1.1 System Architecture - CPU & 1.2 Memory and Storage	1.5 Systems Software	2.1 Algorithms 2.2 Programming Fundamentals	2.5 Programming Languages and IDE's Practical Programming Skills - Project	1.6 Ethical, Legal, Cultural and Enviromental Issues in Computing	1.2 Data Representation - Units, Number Conversion, Character Data
Links to prior learning		System Architecture Memory and Storage		Computational Thinking Algorithms Programming Fundamentals Additional	System Architecture Memory and Storage Number	System Architecture Memory and Storage

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Substantive knowledge headlines	Roles of CPU, ALU (Arithmetic Logic Unit): Performs arithmetic and logical operations, CU (Control Unit): Directs the flow of data and controls instruction execution, Cache: Small, fast memory that stores frequently accessed data and instructions. Registers in Von Neumann Architecture: MAR (Memory Address Register): Stores memory addresses of data to be accessed. MDR (Memory Data Register): Temporarily holds data read from or written to memory. Program Counter: Keeps track of the address of the next instruction. Accumulator: Temporarily stores intermediate results from the ALU. Fetch-Execute Cycle:	The transfer of data between memory. The allocation of memory to applications. Data is transferred between devices and the processor. This process needs to be managed. Allocation of an account. Access rights. Security. Naming files. Allocating files to folders. Moving files. Saving files. The purpose of specific utility software: Encryption software Defragmentation Data compression	Programming Fundamentals The use of variables, constants, operators, inputs, outputs, and assignments. three basic programming constructs: sequence, selection, and iteration arithmetic operators. Boolean operators AND, OR, and NOT. Data types: integer, real, Boolean, and character. String manipulation. File handling operations: open, read, write, and close.	The differences between high-level and low-level programming languages. The need for translators. The differences, benefits, and drawbacks of using a compiler or an interpreter. Knowledge of the tools that an IDE provides.	Knowledge of a variety of examples of digital technology and how this impacts society. An ability to discuss the impact of technology based on the issues listed. The purpose of each piece of legislation . The need to license software and the purpose of a software licence. Features of open source and proprietary software licenses including benefits and drawbacks.	Denary number range is 0 to 255. Hexadecimal range is 00 to FF. Binary number range is 00000000 to 11111111. Understanding the effect of a binary shift, both left or right, on a number. Ability to carry out a binary shift, both left and right. How characters are represented in binary. Understanding how the number of characters stored is limited by the bits available. The differences between and the impact of each character set.

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Disciplinary knowledge headlines	Embedded systems Architecture of the CPU (Von Neumann Architecture) Fetch Decode Execute CPU performance Primary storage (memory) Secondary storage	User Interface Memory management User management File management Device Management	Computational Thinking Designing/Refining Algorithms Programming Fundamentals	Languages (High and Low Level) Translation (Interpretors/Compilers) Intergrated Development Environments	Impact of technology on woder society. Legislation relevant to Computer Science	Units of storage Denary/Binary/Hexadecimal Conversion Binary Arithmetic and Shifts Characters Sets: Ascii, Extended Ascii and Unicode
Links to knowledge in future units	System Software Data Representation	Languages & IDEs	Programming Sorting/Searching Algorithms	Programming Sorting/Searching Algorithms Defensive Design		Data Representation

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Key vocabulary	CPU Fetch-Execute Cycle ALU CU Cache Registers Von Neumann Architecture MAR MDR Program Counter Accumulator Data vs Address	Data transfer Memory allocation Processor Process management User account Access rights Security File management Encryption Data compression	Decomposition Abstraction Patterns Variables Constants Operators Input Outputs Sequence Selection Iteration Data types File handling	High-level Low-level Programming languages Translators Compiler Interpreter Differences Benefits Drawbacks IDE (Integrated Development Environment)	Impact Society Legislation License Open source Proprietary Benefits Ethics Culture	Denary Hexadecimal Binary Range Shift Characters Bits Bytes Ascii Unicode



YEAR 10 iMedia CURRICULUM PROGRESSION OVERVIEW

Subject Curriculum Intent:

Making progress in ICT gives immediate returns to the student; a final product which is the culmination of an initial idea and all the stages in between. In the process the student learns to apply skills and to constantly test, review and improve. Explicit computational thinking processes are introduced early in Key Stage 3 and then referenced throughout the curriculum in order to establish problem solving routines and develop a student's confidence in their own decision making as well as learning and applying software specific skills.

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Theme						
Topic	Unit R093: Creative iMedia in the media industry	Unit R094: Visual identity and digital graphics	Unit R094: Visual identity and digital graphics	Unit R093: Creative iMedia in the media industry	Unit R093: Creative iMedia in the media industry	Unit R097: Interactive digital media
Links to prior learning	Year 9 IDMP Taster Project	R093	R093	R093 R094	R093 R094	R093 R094

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Substantive knowledge headlines	Separation of the media industry into Traditional and New Media sectors. Eg products for each Media job roles investigation: Creative, Technical, Senior. Understanding of phases: Pre-Production, Production, Post Production Pre-production documentation including: mind maps, moodboards, asset logs, scripts, storyboards, visualisation diagrams	Analyse NEA scenario for current year. Identify requirements and understand marking criteria. In relation to scenario consider design concepts/techniques and formulate ideas with a mind map and moodboard. Plan solution with a visualisation diagram. Collect required assets and complete asset log.	Create the visual identity using relevant software tools/techniques. Document development of VI maintaining a version history. Identify, source and log assets required for the digital graphic. Edit create assets. Document development of digital graphic maintaining a version history. Export in appropriate formats as required.	Recognising client requirements when given a client brief. Using/learning key terms. Different types of client brief. Recognising and applying different demographic categories and potential impact on media product design.	Subdivision of media codes into: technical, symbolic and written. Media code elements: animations, audio, camera techniques, colour, interactivity, lighting, Mis-en-scene, Transitions, Typography	Analyse NEA scenario for current year. Identify requirements and understand marking criteria. In relation to scenario consider purpose of the product and required types of content. Understand need for non linear, user friendly interactive product. Formulate initial ideas with a mind map and moodboard.

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Disciplinary knowledge headlines	1.1 Media industry sectors and products 1.2 Job roles in the media industry 2.1 How style, content and layout are linked to the purpose 3.2 Documents used to support ideas generation 3.3 Documents used to design and plan media products	1.1 Purpose, elements and design of visual identity 2.1 Graphic design and conventions 2.2 Properties of digital graphics and use of assets 2.3 Techniques to plan visual identity and digital graphics	3.1 Tools and techniques of imaging editing software used to create digital graphics 3.2 Technical skills to source, create and prepare assets for use within digital graphics 3.3 Techniques to save and export visual identity and digital graphics	2.2 Client requirements and how they are defined 2.3 Audience demographics and segmentation	2.5 Media codes used to convey meaning, create impact and/or engage audiences	1.1 Types of interactive digital media, content and associated hardware 1.2 Features and conventions of interactive digital media 1.3 Resources required to create interactive digital media products
Links to knowledge in future units	R093 R094 & R097	R093 R094 & R097	R093 R094 & R097	R093 R094 & R097	R093 R094 & R097	R093 R094 & R097
Key vocabulary	Traditional Media New Media Products Job Roles Pre-Production Production Post Production Documentation	Client brief Requirements Mind Map Moodboard Concepts Techniques Visualisation diagram Asset	Visual identity Logo Typography Colour palette House style Layout Graphic design Alignment White space	Purpose Audience Demographics Segmentation Formal/informal Commission Negotiated Occupation Interests Lifestyle	Media codes Technical Symbolic Written Dialogue Vocal intonation Camera techniques Interactivity Intensity/levels Mise-en-scene Typography	Interactive digital media Client brief Target audience Devices Navigation diagram Hierarchy diagram Wireframe Template Asset log/table Multimedia content



YEAR 11 Computer Science CURRICULUM PROGRESSION OVERVIEW

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	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Theme						
Topic	1.2 Data Representation continued: Image and Sound Data, Compression	1.3 Networks, Connections and Protocols 1.4 Network Security	2.1 Searching and Sorting Algorithms 2.3 Defensive Design 2.4 Boolean Logic	2.2 SQL and Programming Revision General Revision & Past Paper Analysis		
Links to prior learning	System Architecture Memory and Storage Number Conversion	System Architecture Memory and Storage Number Conversion System Software	Computational Thinking Algorithms Programming Fundamentals Additional Programming	Computational Thinking Algorithms Programming Fundamentals Additional Programming		

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Substantive knowledge headlines	Each pixel has a specific colour, represented by binary Effect on image size and quality when changing colour depth and resolution. Metadata examples. Analogue sounds stored in binary. Sample rate is measured in Hertz (Hz). Bit depth is the number of bits available to store each sample, for example, 16-bit. Advantages and disadvantages of each type of compression. Effects on the file for each type of compression.	LAN/WAN, Hardware: servers, routers, switches. Types of addressing: IP and MAC, Protocols, layers. The internet as a network: DNS, web servers, The 'cloud'. Topologies Wired and wireless connections. Network performance. Forms of attack and network weakness. Methods of preventing network weakness.	Standard searching algorithms: binary search and linear search. Standard sorting algorithms: bubble sort, merge sort, and insertion sort. Apply the algorithm to a data set. Identify an algorithm Ensuring a program caters for all likely input values. How to deal with invalid data in a program. Authentication to confirm the identity of a user. Recognition of gates and dealing with more than one gate.	SQL structures and SELECT FROM WHERE queries Arrays and 2D Arrays Functions & Procedures Local/Global variables. The use of basic file handling operations: open, read, write, and close.		

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Disciplinary knowledge headlines	Images as pixels, data per pixel, colour depth and file size calculation. Sound as samples, data per sample, bit depth and file size calculation Lossy and Lossless Compression	Types of network, network performance, network hardware, The internet (DNS, Hosting, Cloud, Web servers), topologies, IP and MAC addressing, protocols and layers. Threats and Vulnerabilities of networks. Prevention of vulnerabilities.	Searching and Sorting Algorithms. Defensive design techniques and trace tables. Logic gates and truth tables	Structuring data: Fields and Records. Querying data. Use of basic SQL. Revisiting arrays and file handling as methods of managing data.		
Links to knowledge in future units						
Key vocabulary	Pixel Binary Image size Quality Colour depth Resolution Metadata Sample rate Sample frequency Bit rate Compression	LAN WAN Servers Routers IP MAC Protocols Topologies Wired Wireless	Searching Binary search Linear search Sorting Bubble sort Merge sort Insertion sort Algorithm Authentication Gates	SQL SELECT FROM WHERE Queries Arrays 2D Arrays Functions Procedures Variables		



YEAR 11 iMedia CURRICULUM PROGRESSION OVERVIEW

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	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Theme						
Topic	Unit R097: Interactive digital media	Unit R097: Interactive digital media	Unit R093: Creative iMedia in the media industry	Unit R093: Creative iMedia in the media industry		
Links to prior learning	R093 R094	R093 R094	R093 R094 & R097	R093 R094 & R097		

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Substantive knowledge headlines	Within context of NEA: Create an appropriate work plan (GANTT) to include: Tasks & activities, Workflow, timescales and milestones, Contingencies. Also: As relevant complete Asset log, Flow chart, Script, Storyboard, Visualisation diagram, Wireframe layout. Finalise and apply house style and templates.	Within context of NEA: Develop assets and maintain a log of tools/techniques. Maintain version history. Assets may include: graphics, scripts, audio, video, navigation buttons, animations, maps, forms Export into appropriate file formats as specified in the NEA.	When finalising R097 product complete a comprehensive test plan covering functionality and multimedia. Assess prodcy against client requirements and suggest improvements. Understand different research methods: Primary and Secondary and the use of both qualitative and quantitative data/information. Different legal considerations for media projects: privacy, defamation, data protection, copyright. Also classification, H&S,	How media products can be reach audiences via online and physical platforms and media. File formats for a range of media. Compression techniques: Lossy and Lossless		

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Disciplinary knowledge headlines	(R093): 3.1 Work planning (R093): 3.3 Documents used to design and plan media products 1.4 Pre-production and planning documentation and techniques for interactive digital media	2.1 & 2.2 Technical skills to create and/or edit and manage assets for use within interactive digital media products. Creating the IDMP 2.3 Techniques to save and export/publish interactive digital media	(R097): 3.1 Techniques to test/check and review interactive digital media (R097): 3.2 Improvements and further developments 2.4 Research methods, sources and types of data 3.4 The legal issues that affect media	4.1 Distribution platforms and media to reach audiences		
Links to knowledge in future units	R093 R094 & R097	R093 R094 & R097	R093 R094 & R097	R093 R094 & R097		
Key vocabulary	Work plan Gantt chart Tasks Activities Workflow Timescales Milestones Contingencies Script Storyboard	Tools & Techniques Version history Scripts Audio & Video Navigation buttons Animations File formats Export/Publish	Privacy Permission Defamation Libel Slander Patents Trademarks Watermarks Classification Mitigation Location Recce	Platforms Physical Media Resolution Raster/bitmap Vector Compression Bit depth Sample rate Frame rate Lossy/Lossless		