

YEAR 10 COMPUTER SCIENCE CURRICULUM PROGRESSION OVERVIEW

Subject Curriculum Intent

Develop skills and understanding of computer systems, including computer hardware, software, networks and computer programming.

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic	<ul style="list-style-type: none"> Binary representation Programming basics 	<ul style="list-style-type: none"> Computer hardware Selection 	<ul style="list-style-type: none"> Operating systems FOR loops 	<ul style="list-style-type: none"> Computer networks WHILE loops 	<ul style="list-style-type: none"> Legislation List handling 	<ul style="list-style-type: none"> Consequences Searching & sorting
Core Knowledge/ Threshold Concept	<ul style="list-style-type: none"> Binary representation Binary units Binary conversion Hexadecimal Python syntax Flowcharts Data types Arithmetic 	<ul style="list-style-type: none"> CPU components Embedded systems Memory Storage Selection statements Abstraction Decomposition 	<ul style="list-style-type: none"> Types of operating systems Purpose of operating systems Memory management Iteration Syntax for FOR loops 	<ul style="list-style-type: none"> Pros and cons of networks LANs and WANS Topologies Wired vs wireless networks Syntax for WHILE loops Validation loops 	<ul style="list-style-type: none"> Computer Misuse Act Data Protection Act Intellectual Property Lists and arrays Interrogating lists 	<ul style="list-style-type: none"> Moral, environmental, legal and cultural consequences of computing Searching algorithms Sorting algorithms
Why this learning now?	Fundamental to understanding computer systems	Build on existing knowledge of computer hardware	Link the operating system as the interface between hardware and software	Understand the basics of how computers communicate	Technical knowledge required to discuss the MELC topic from next half term	Apply knowledge of legal and IP issues to a range of complex scenarios
Assessment Opportunities:	<ul style="list-style-type: none"> Written exam-style assessments of theory content Practical programming activities 	<ul style="list-style-type: none"> Written exam-style assessments of theory content Practical programming activities 	<ul style="list-style-type: none"> Written exam-style assessments of theory content Practical programming activities 	<ul style="list-style-type: none"> Written exam-style assessments of theory content Practical programming activities 	<ul style="list-style-type: none"> Written exam-style assessments of theory content Practical programming activities 	<ul style="list-style-type: none"> Written exam-style assessments of theory content Practical programming activities

Learning at Home	<ul style="list-style-type: none"> • Regularly set home learning activities based on cementing the knowledge taught throughout the year • Independent programming tasks to reinforce the knowledge of syntax and problem-solving capabilities taught through Python programming 					
Key Vocabulary	<ul style="list-style-type: none"> • Binary • Hexadecimal • Syntax • String 	<ul style="list-style-type: none"> • CPU • Abstraction • Decomposition 	<ul style="list-style-type: none"> • Interface • Peripheral • Iteration 	<ul style="list-style-type: none"> • Topology • Switch • Validation 	<ul style="list-style-type: none"> • Legislation • Intellectual Property • Index 	<ul style="list-style-type: none"> • Moral • Stakeholder • Merge
Spiritual, Moral, Social and Cultural concepts covered	<ul style="list-style-type: none"> • Understanding why computer problems occur and identifying strategies for solving them • Consideration of the moral, environmental, legal and cultural consequences of computing • Developing solutions to solve real-world problems 					
Links to careers and the world of work	<ul style="list-style-type: none"> • Understanding of how computer hardware choices impact suitability for a range of tasks • Practical experience with computer networks and solving computer problems • Developing a fundamental grounding in computer science concepts that can support a wide range of careers • Practical problem solving techniques that apply to programming, but also to the wider world 					

YEAR 10 iMEDIA CURRICULUM PROGRESSION OVERVIEW

Subject Curriculum Intent

Develop skills and understanding about digital creativity and digital media. Understand a range of media roles and gain skills and knowledge about the three stages of media products: pre-production, production, and post-production

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic	Graphic Design Principles	Planning for graphic design	Completing a design project	Photography composition	Photography Project Lifecycle	Videography
Core Knowledge/ Threshold Concept	<ul style="list-style-type: none"> Purpose of a visual identity Concepts of graphic design Photoshop fundamentals Photoshop effects 	<ul style="list-style-type: none"> Image properties Planning techniques Advanced Photoshop techniques 	<ul style="list-style-type: none"> Preparing assets How to export digital graphics 	<ul style="list-style-type: none"> Rules of photography Camera settings Exposure 	<ul style="list-style-type: none"> Interpreting a brief Recces and shot lists Capturing photos to meet a brief Post production techniques 	<ul style="list-style-type: none"> Shot types Shot angles Camera movement Scripts & storyboards Editing techniques
Why this learning now?	Grounding in the basic, fundamental principles behind graphic design in preparation for unit R094	Building on the basic skills and how to plan for a real project	Ensuring that students have the right skills and knowledge for the R094 assessment	Preparing students for R098, the second practical unit	Ensuring that students have the right skills and knowledge for the R098 assessment	Adding videography skills to the photography skills to ensure that students are fully prepared for the practical assessment in September
Assessment Opportunities:	Regular assessment of practical skills throughout lessons	Regular assessment of practical skills throughout lessons Formal coursework assessment for R094	Regular assessment of practical skills throughout lessons Formal coursework assessment for R094	Regular assessment of practical skills throughout lessons	Regular assessment of practical skills throughout lessons Practical photography project	Regular assessment of practical skills throughout lessons Practical videography project

Learning at Home	Regular homework tasks to help build on the theory and underlying principles behind the digital media industry that start to prepare students with the core knowledge that will be assessed in the final exam in Year 11					
Key Vocabulary	<ul style="list-style-type: none"> • Identity • Graphic • Brand 	<ul style="list-style-type: none"> • Vector • Bitmap • Moodboard 	<ul style="list-style-type: none"> • Format • Export • Asset 	<ul style="list-style-type: none"> • Composition • Exposure • Perspective 	<ul style="list-style-type: none"> • Recce • Pre-production • Post-processing 	<ul style="list-style-type: none"> • Videography • Dolly • Storyboard
Spiritual, Moral, Social and Cultural concepts covered	<ul style="list-style-type: none"> • Consideration of the impact of edited images on perceptions • Intellectual property and how to source images fairly and legally • Consideration for target audiences – demographics and how images might have different impacts depending on the audience • Photo and video journalism, and the role of the citizen journalist 					
Links to careers and the world of work	<ul style="list-style-type: none"> • Practical skills in image editing that can be used in a real creative workplace • Project briefs that have realistic clients, audiences and project requirements • Planning techniques that include consideration of legislation and health & safety 					

YEAR 10 IT CURRICULUM PROGRESSION OVERVIEW

Subject Curriculum Intent

To continue developing IT literacy from KS3 to ensure students have the skills required to function in the wider world of work. To introduce the students to app development and the use of WYSIWYG software. To provide a broad understanding of how technology is used in society.

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic	Planning an AR Prototype	Developing an AR Prototype	Hardware	Human Computer Interfaces	Modelling	Planning an effective Model
Core Knowledge/ Threshold Concept	<ul style="list-style-type: none"> Interpreting a brief Visualisation diagrams Effective use of mindmaps Effective use of sitemaps 	<ul style="list-style-type: none"> Use of software to develop Augmented Reality Use of navigation and triggers Evaluating working practice 	<ul style="list-style-type: none"> Types and uses of devices Inputs and outputs Understanding how purpose and scenario will impact choice of device 	<ul style="list-style-type: none"> Types of HCI's Uses of HCI's How to use HCI's to navigate Testing products 	<ul style="list-style-type: none"> Using cell references Using formula and functions Data type Formatting 	<ul style="list-style-type: none"> Recap of visualisation diagrams Understand how navigation will work in a model
Why this learning now?	Will provide necessary teaching for the RO60 coursework unit	Will provide necessary teaching for the RO60 coursework unit	Will provide teaching for the RO70 coursework unit and key topics for terminal exam	Will provide teaching for the RO70 coursework unit and key topics for terminal exam	Will provide teaching for the RO70 coursework which will be started at beginning of Y11	Will provide teaching for the RO70 coursework which will be started at beginning of Y11
Assessment Opportunities:	RO60 coursework will be submitted in Autumn term 2	RO60 coursework will be submitted in Autumn term 2 and there will be opportunity to improve this	Exam questions on the key topics. End of topic assessments to gauge understanding of each topic	Exam questions on the key topics. End of topic assessments to gauge understanding of each topic	RO70 coursework will be started at the beginning of Y11. End of topic assessments.	RO70 coursework will be started at the beginning of Y11. End of topic assessments.

Learning at Home	Booklet work to practice practical planning skills	Multiple choice quizzes on Satchel:One to check understanding	Exam questions focusing on key topics	Exam questions focusing on key topics	Multiple choice quizzes on Satchel:One to check understanding	Booklet work to practice practical planning skills
Key Vocabulary	<ul style="list-style-type: none"> • Visualisation Diagram • Mindmap • Sitemap 	<ul style="list-style-type: none"> • Triggers • Navigation • Scenes • Animation • Multimedia 	<ul style="list-style-type: none"> • Devices • Audience • Purpose • Input • Output 	<ul style="list-style-type: none"> • HCI • GUI • Touchscreen • Testplans 	<ul style="list-style-type: none"> • Functions • Formula • Data Type • Validation 	<ul style="list-style-type: none"> • Visualisation Diagram • Testplan • Sitemaps
Spiritual, Moral, Social and Cultural concepts covered	App development will link to the concept that just because you can make something should you and how will it be used in society. There are some links to how users can interact with products and how this can be done securely and safely.					
Links to careers and the world of work	AR development will have strong links to app development and web development. Understanding of devices and how they are appropriate will provide real links to how technology is used in the wider world. Spreadsheet skills are becoming essential for most office orientated jobs.					

YEAR 11 COMPUTER SCIENCE CURRICULUM PROGRESSION OVERVIEW

Subject Curriculum Intent

Further develop skills and understanding of computer systems from Year 10, extending knowledge into more abstract concepts and producing more elegant, modular and robust program code

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic	<ul style="list-style-type: none"> Binary representation Subroutines 	<ul style="list-style-type: none"> Computer hardware File handling 	<ul style="list-style-type: none"> Software Robust programming 	<ul style="list-style-type: none"> Computer networks Translators 	<ul style="list-style-type: none"> Final revision and preparation 	<ul style="list-style-type: none"> Exams
Core Knowledge/ Threshold Concept	<ul style="list-style-type: none"> Binary shifts Binary arithmetic Character sets Representation of images Representation of sounds Encryption algorithms Subroutines 	<ul style="list-style-type: none"> CPU architecture Fetch-Decode-Execute cycle Registers Virtual memory File handling 2D lists / arrays 	<ul style="list-style-type: none"> Utility software Defragmentation Compression Test plans Defensive programming Exception handling 	<ul style="list-style-type: none"> Protocols DNS VLANs Network security Assemblers Compilers Interpreters IDEs 	<ul style="list-style-type: none"> Revision of all content 	
Why this learning now?	Revisiting topics from Year 10 in the same order, but with advanced depth and detail				Final preparation for exams	
Assessment Opportunities:	<ul style="list-style-type: none"> Written exam-style assessments of theory content Practical programming activities 					<ul style="list-style-type: none"> Final exam

Learning at Home	<ul style="list-style-type: none"> Regularly set home learning activities based on cementing the knowledge taught throughout the year Independent programming tasks to reinforce the knowledge of syntax and problem-solving capabilities taught through Python programming 					
Key Vocabulary	<ul style="list-style-type: none"> ASCII Unicode Frequency Colour depth Bit depth 	<ul style="list-style-type: none"> Architecture Register Module 	<ul style="list-style-type: none"> Utility Defragmentation Compression Robust 	<ul style="list-style-type: none"> Protocol Translator IDE 		
Spiritual, Moral, Social and Cultural concepts covered	<ul style="list-style-type: none"> Understanding why computer problems occur and identifying strategies for solving them Consideration of the moral, environmental, legal and cultural consequences of computing Developing solutions to solve real-world problems 					
Links to careers and the world of work	<ul style="list-style-type: none"> Understanding of how computer hardware choices impact suitability for a range of tasks Practical experience with computer networks and solving computer problems Developing a fundamental grounding in computer science concepts that can support a wide range of careers Practical problem solving techniques that apply to programming, but also to the wider world 					

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
Topic	Digital photography & videography	Completing a real project	What is media?	Understanding media	Revision	Exam window
Core Knowledge/ Threshold Concept	<ul style="list-style-type: none"> Principles of digital photography Principles of digital videography Planning techniques for digital imaging 	<ul style="list-style-type: none"> Practical photography skills Practical videography skills How to critically evaluate against a brief 	<ul style="list-style-type: none"> Traditional media Digital media Job roles Client requirements Audience demographics 	<ul style="list-style-type: none"> Media codes Pre-production documents Distribution platforms Properties and formats 	<ul style="list-style-type: none"> All content for the R093 exam 	
Why this learning now?	Assessing skills from the latter half of Year 10 and completing the formal assessment	Assessing skills from the latter half of Year 10 and completing the formal assessment	Preparation for the external assessment in May/June	Preparation for the external assessment in May/June	Preparation for the external assessment in May/June	
Assessment Opportunities:	<p>Regular assessment of practical skills throughout lessons</p> <p>Formal coursework assessment for R098</p>	<p>Regular assessment of practical skills throughout lessons</p> <p>Formal coursework assessment for R098</p>	<p>Written assessments in an exam style</p> <p>February mock exam window</p>	Written assessments in an exam style	Written assessments in an exam style	External examinations
Learning at Home	Regular homework tasks to help build on the theory and underlying principles behind the digital media industry that start to prepare students with the core knowledge that will be assessed in the final exam in Year 11					

Key Vocabulary	<ul style="list-style-type: none"> Storyboard Portfolio Complimentary 	<ul style="list-style-type: none"> DoP Transition Evaluation 	<ul style="list-style-type: none"> Sector Media Demographic 	<ul style="list-style-type: none"> Code Legislation Distribution 	•	•
Spiritual, Moral, Social and Cultural concepts covered	<ul style="list-style-type: none"> Consideration of the impact of edited images on perceptions Intellectual property and how to source images fairly and legally Consideration for target audiences – demographics and how images might have different impacts depending on the audience Photo and video journalism, and the role of the citizen journalist 					
Links to careers and the world of work	<ul style="list-style-type: none"> Practical skills in photography and videography that can be used in a real creative workplace Project briefs that have realistic clients, audiences and project requirements Planning techniques that include consideration of legislation and health & safety Understanding of job roles and sectors within the media industry 					

YEAR 11 IT CURRICULUM PROGRESSION OVERVIEW

Subject Curriculum Intent

To continue developing IT literacy from KS3 to ensure students have the skills required to function in the wider world of work. To provide a clear focus on the use of spreadsheets to create effective and useful models. To provide a broad understanding of how technology is used in society and the impact that can have in terms of inclusivity, security and legally.

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic	Planning an effective model	Creating an effective model	Hardware, storage and software	Computer use in Society	Revision of key topics	Exams
Core Knowledge/ Threshold Concept	<ul style="list-style-type: none"> Produce wireframes of sheets in a spreadsheet Produce sitemaps of how to navigate spreadsheets Produce useful testplans 	<ul style="list-style-type: none"> Use formula and functions to create an effective model Use formatting and data types Use of validation Use of charts Evaluate working practice 	<ul style="list-style-type: none"> Understand the inputs and outputs Understand how purpose will impact hardware choice Understand types of storage 	<ul style="list-style-type: none"> Understand the main pieces of legislation relating to technology Understand how to ensure data is kept secure 	<ul style="list-style-type: none"> Recall planning documents Recall technology in society Recall devices and uses Recall storage 	
Why this learning now?	RO70 will be completed and assessed in this term	RO70 will be completed and assessed in this term and improvements can be made	Recap of some of the theory about devices in Y10 and introduction of software and hardware for exam	Introduce the final topics required for the exam in the summer	Final recall of key exam topics before terminal exam	
Assessment Opportunities:	Coursework will be submitted and assessed with the chance to make improvements	Coursework will be submitted and assessed with the chance to make improvements	Use of various recall methods to check understanding of previous topics End of topic assessments	End of topic assessments Delivery of presentation to show understanding of legislation	Exam style questions Past Papers	

Learning at Home	Booklet work to practice practical planning skills	Multiple choice quizzes on Satchel:One to check understanding	Exam questions focusing on key topics Creation of revision aids	Exam questions focusing on key topics Creation of revision aids	Exam questions focusing on key topics Creation of revision aids	
Key Vocabulary	<ul style="list-style-type: none"> • Sitemaps • Visualisation Diagrams • Mindmaps • Testplans 	<ul style="list-style-type: none"> • Formulas • Functions • Validation • Formatting • Charts 	<ul style="list-style-type: none"> • Devices • Storage • Physical • External • Cloud 	<ul style="list-style-type: none"> • Data Protection • Hacking • Computer Misuse • Networks 	<ul style="list-style-type: none"> • Planning Documents • Devices • Storage 	
Spiritual, Moral, Social and Cultural concepts covered	The use of technology in wider society will link to key pieces of legislation and introduce the concept of hacking and the various forms it can take. It will stress the importance of keeping data secure as individuals and organisations. It will cover how certain devices will allow users to be able to access technology despite specific barriers.					
Links to careers and the world of work	The spreadsheet unit will provide students literacy in a widely used piece of software across many offices. Security will have links to the role of cyber security experts and how they will protect users and organisations.					