Key

Creative iMedia

Computing / Computer Science

Click to see plan

Year 7

Year 8

Year 9

Year 10

Year 11

Year 12

Year 13

CLICK ME !

CAREERS

Computing & IT Curriculum

St Thomas More High School

Computing – Year 7

	Autumn Term	Spring Term	Summer Term
Year 7 Topics 2024/2025	**7.1 Clear Messaging in Digital Media (S1, S2, S3)** The unit is designed so that learners can concentrate on applying skills that they may have previously learnt as well as those learnt in the unit. Learners are given clear tasks for which they need to first plan and then implement a solution. A rubric is used to help learners focus on specific aspects of their work. **7.2 Networking (S1, S2, S3)** Pupils understand the links between computer networks and popular platforms they use such as YouTube, Google, instant messaging, online video gaming, Netflix, and iTunes; online shopping; file sharing; and central backups of information. This unit begins by defining a network and addressing the benefits of networking, before covering how data is transmitted across networks using protocols.	**7.3 Kodu Programming (S1, S2, S3)** Pupils will be introduced to the idea of computer programs requiring a precise series of statements and, through using Kodu, will understand how to build a world and program characters and objects before moving on to enhance their games with more advanced features. **7.4 Scratch Programming (S1, S2, S3)** The aim of this unit and the following unit (Programming II) is to build learners' confidence and knowledge of the key programming constructs. Importantly, this unit does not assume any previous programming experience, but it does offer learners the opportunity to expand on their knowledge throughout the unit. The main programming concepts covered in this unit are sequencing, variables, selection, and count-controlled iteration.	**7.5 Spreadsheet Fundamentals (S1, S2, S3)** The spreadsheet unit for Year 7 takes learners from having very little knowledge of spreadsheets to being able to confidently model data with a spreadsheet. The unit uses engaging activities to progress learners from using basic formulas to writing their own COUNTIF statements. This unit will give learners a good set of skills that they can use in computing lessons and in other subject areas. **7.6 3D Design Using Tinkercad (S1, S2, S3)** Learners will develop their knowledge and understanding of using a computer to produce 3D models. Learners will initially familiarise themselves with working in a 3D space, moving, resizing, and duplicating objects. They will then create hollow objects using placeholders and combine multiple objects to create a model of a desk tidy.
NCC Codes	3.1 , 3.2 , 3.3 , 3.4 , 3.5 , 3.9 See national curriculum codes here	3.1 , 3.2 , 3.3, 3.4 See national curriculum codes here	3.1 , 3.2 , 3.3, 3.4, 3.7 , 3.8 See national curriculum codes here
Assessment	Online assessments for the following topics: Please see Pupils Learning Journey in Planner. Collaborating Online, Kodu, Scratch, Modelling Data, Networking		
E/L	• www.idea.org.uk – Digital Enterprise • Supportive Worksheets for each topic • KS3 Super Curriculum Interactive PDF – Please See Teams for Interactive worksheet		

	Autumn Term	Spring Term	Summer Term
Year 8 Topics 2024/2025	**8.1 Understanding Computers (S1, S2, S3)** The aim is to provide a concise overview of how computing systems operate, conveying the essentials and abstracting away the technical details that might confuse or put off learners. The last lessons cover two interesting contemporary topics: artificial intelligence and open-source software. **8.2 Media Vector Graphics (S2)** Vector graphics can be used to design anything from logos and icons to posters, board games, and complex illustrations. Through this unit, learners 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.	**8.3 Web Development (S1, S2)** In this unit, learners will explore 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. **8.4 Cybersecurity (S1, S2, S3)** This unit takes learners on a journey of discovery of techniques that cybercriminals use to steal data, disrupt systems, and infiltrate networks. The learners will start by considering the value their data holds and what organisations might use it for. They will then learn about social engineering and other common cybercrimes, and finally look at methods to protect against these attacks.	**8.5 Mobile App Development (S1, S2)** Building on the programming concepts learners used in previous units, they will work in pairs to perform user research, design their app, write the code for it, before finally evaluating and publishing it for the world to use. **8.6 Python (S1, S2)** This unit introduces learners to text-based programming with Python. The lessons form a journey that starts with 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
NCC Codes	3.5 , 3.6 , 3.7 , 3.9 See national curriculum codes here	3.2 , 3.3 , 3.5 , 3.6 , 3.8 See national curriculum codes here	3.1 , 3.2 , 3.3 , 3.4 , 3.8 See national curriculum codes here
Assessment	Online assessments for the following topics: Please see Pupils Learning Journey in Planner. Media Vector Graphics, Developing for web, Data Rep, Python Skills		
E/L	• www.idea.org.uk – Digital Enterprise • Supportive Worksheets for each topic • KS3 Super Curriculum Interactive PDF – Please See Teams for Interactive worksheet		

Computing Useful Links

Go Back

Y7

Collaborating Online Respectfully

- Microsoft Office/Teams

- www.youtube.com/watch?time_continue=20&v=opRMrEfAIiI&feature=emb_logo
- www.ncsc.gov.uk/cyberaware/home
- www.security.org/how-secure-is-my-password
- www.youtube.com/watch?v=OBg2YYV3Bts&feature=emb_logo
- www.thinkuknow.co.uk/11_13/help/CEOP
- www.childline.org.uk
- www.thinkuknow.co.uk/11_13/help/Contact-social-sites
- www.anti-bullyingalliance.org.uk
- www.bullying.co.uk/cyberbullying
- www.ditchthelabel.org

Networking/Internet

- Microsoft Office/Teams

- www.bbc.co.uk/bitesize/guides/z36nb9q/revision/2
- www.nibusinessinfo.co.uk/content/benefits-computer-networks
- www.speedtest.net
- www.youtube.com/watch?v=Dxcc6ycZ73M
- www.submarinecablemap.com
- www.youtube.com/watch?v=ewrBalT_eBM
- www.lifehacks.io/facts-about-the-internet
- www.youtube.com/watch?v=ZTM9GA-4nBA
- www.seotribunal.com/blog/google-stats-and-facts
- www.bbc.co.uk
- www.lifewire.com/most-common-tlds-internet-domain-extensions-817511
- www.yougetsignal.com/tools/network-location/

Programming

- Scratch 3
- Kodu
- Microsoft Teams

- scratch.mit.edu
- en.wikipedia.org/wiki/Five_Little_Ducks
- en.wikipedia.org/wiki/Software_bug

Data Modelling

- Microsoft Excel
- Microsoft Teams
- en.wikipedia.org/wiki/2016_Summer_Olympics_medal_table
- en.wikipedia.org/wiki/2018%E2%80%9319_Premier_League
- socialblade.com/youtube

Y8

Developing For web

- Microsoft Office/Teams
- Notepad
- www.w3schools.com/html
- www.w3schools.com/css
- www.w3schools.com/cssref

Computer Systems

- Microsoft Office/Teams
- www.computerhistory.org
- thecrashcourse.com/courses/computerscience
- projects/rasperberrypie.org

Vector Graphics

- Inkscape
- Affinity Designer
- Affinity Photo

Python Programming Introduction Using Primm

- Python

- repl.it
- blog.teachcomputing.org/tag/pedagogy
- pythontutor.com/visualize.html
- trinket.io
- projects.raspberrypi.org
- docs.python.org/3

Data Science

- Microsoft Office/Teams

- www.datawrapper.de
- www.youtube.com/watch?v=f_6IEKqS2l0
- www.gapminder.org
- berkeleyearth.lbl.gov/country-list
- codap.concord.org
- datashine.org.uk
- naei.beis.gov.uk/emissionsapp
- www.gaugemap.co.uk

Cyber Security

- threatmap.checkpoint.com
- scratch.mit.edu
- forbusiness.snapchat.com/advertising#targeting
- www.snap.com/en-GB/privacy/privacy-policy
- help.instagram.com/519522125107875/?helpref=hc_fnav&bc[0]=Instagram%20Help&bc[1]=Privacy%20and%20Safety%20Center
- policies.google.com/privacy#infocollect
- en-gb.facebook.com/policy.php
- www.ncsc.gov.uk
- www.cps.gov.uk/legal-guidance/computer-misuse
- us.norton.com/internetsecurity-malware-what-is-a-computer-virus.html
- us.norton.com/internetsecurity-malware-what-is-a-computer-worm.html
- antivirus.comodo.com/blog/computer-safety/computer-worm-definition
- www.malwarebytes.com/ransomware
- uk.norton.com/internetsecurity-malware-ransomware-5-dos-and-donts.html

Physical Computing

- microbit.org
- python.microbit.org
- microbit-micropython.readthedocs.io/en/v1.0.1
- www.arm.com/resources/education/schools/content
- blog.teachcomputing.org/tag/pedagogy
- youtu.be/oNLf6aFYVoU

Creative iMedia - Year 9

	Autumn Term	Spring Term	Summer Term
Topics	R093: Media industry sectors and products (TA1) R093: How style, content and layout are linked to the purpose. Client requirements and how they are defined (TA2) R093: Audience demographics and segmentation (TA2) R093: Media codes used to convey meaning, create impact and/or engage audiences (TA2) R093: Work planning and documents used to support ideas generation (TA3) R093: Documents used to design/plan media products (TA3)	R094: Purpose, features, elements and design of visual identity R094: Graphic design concepts and conventions R094: Properties of digital graphics and use of assets R094: Techniques to plan visual identity and digital graphics R094: Tools and techniques to create visual identity and digital graphics	R094: 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 practice tasks **1st June Release** **R094: NEA Assessment (Working on and submit1 for moderation)**
Exam Spec w/link	Unit R094 – skills building https://www.ocr.org.uk/Images/610942-specification-cambridge-nationals-creative-imedia-j834.pdf Pages 26 -36 See how we cover the KS4 National Curriculum here	Unit R094 – skills building https://www.ocr.org.uk/Images/610942-specification-cambridge-nationals-creative-imedia-j834.pdf Pages 26 -36 See how we cover the KS4 National Curriculum here	Unit R094 – skills building https://www.ocr.org.uk/Images/610942-specification-cambridge-nationals-creative-imedia-j834.pdf Pages 26 -36 See how we cover the KS4 National Curriculum here
Assessment	End of Term tests on each Component • Mock Assessment builds on knowledge, understanding and skills acquired and developed across the qualification. • Questions will require learners to apply knowledge and understanding to the given scenarios or context. • The supervised assessment period is a maximum of 1 hour and 30 minutes and should be arranged in the period timetabled by Pearson. • First assessment is January/June 2024		
E/L	Extended Learning Sheets for each topic will be set on teams with the class work		

	Autumn Term	Spring Term	Summer Term
Topics	**R094: NEA Assessment (Working on and submit1 for moderation)** R095 (or alternative optional unit): TA1 Introduction (with R093 key content embedded) R095: Character features and convention R095: Conventions of comics R095: Resources required to create characters and comics	R095: Pre-production and planning documentation and techniques for characters and comics R095: Techniques to obtain and create components for use within comics	R095: Techniques used to create characters and comics R095: Techniques to save and export characters and comics R095: Techniques to test/check and review characters and comics R095: Improvements and further developments **1st JUNE RELEASE** **R095: NEA Assessment (Working on and submit1 for moderation)**
Exam Spec w/link	Unit R095 – skills building https://www.ocr.org.uk/Images/610942-specification-cambridge-nationals-creative-imedia-j834.pdf Pages 37 -51 See how we cover the KS4 National Curriculum here	Unit R095 – skills building https://www.ocr.org.uk/Images/610942-specification-cambridge-nationals-creative-imedia-j834.pdf Pages 37-51 See how we cover the KS4 National Curriculum here	Unit R095 – skills building https://www.ocr.org.uk/Images/610942-specification-cambridge-nationals-creative-imedia-j834.pdf Pages 37-51 See how we cover the KS4 National Curriculum here
Assessment	**R094 – Visual Identity and Digital Graphics** - 30 GLH - OCR-set assignment - 50 marks (50 UMS) - Centre-assessed and OCR moderated. - This set assignment contains two practical tasks. - It should take approximately 10-12 GLH to complete		
E/L	Extended Learning Sheets for each topic will be set on teams with the class work		

	Autumn Term	Spring Term	Summer Term
Topics	R096: Review and revise techniques and process **R095: NEA Assessment (Working on and submit1 for moderation)**	R093: Distribution platforms and media to reach audiences (TA4) R093: Properties and formats of media files (TA4) R093: Sources of research and types of research data (TA2) R093: The legal issues that affect media (TA3)	R093: Job roles in the media industry (TA1) R093: Revision and mock papers/tests R093: Examination (Terminal unit)
Exam Spec w/link	Unit R093 – Exam skills building https://www.ocr.org.uk/Images/610942-specification-cambridge-nationals-creative-imedia-j834.pdf Pages 17 -26 See how we cover the KS4 National Curriculum here	Unit R093 – Exam skills building https://www.ocr.org.uk/Images/610942-specification-cambridge-nationals-creative-imedia-j834.pdf Pages 17 -26 See how we cover the KS4 National Curriculum here	Unit R093 – Exam skills building https://www.ocr.org.uk/Images/610942-specification-cambridge-nationals-creative-imedia-j834.pdf Pages 17 -26 See how we cover the KS4 National Curriculum here
Assessment	**R093 UNIT is assessed by an exam (JUNE)** - The exam is 1 hour and 30 minutes. - It has two sections – Section A and Section B. - Section A has 10 marks. - Section B has 60 marks. - The exam has 70 marks in total. - This will be conducted under examination conditions. **R095 – Characters & Comics** - 42 GLH - OCR-set assignment - 70 marks (50 UMS) - Centre-assessed and OCR moderated. - This set assignment contains two practical tasks. - It should take approximately 10-12 GLH to complete		
E/L	Extended Learning Sheets for each topic will be set on teams with the class work		

Go Ba

BTEC ICT – Year 12

	Autumn Term	Spring Term	Summer Term
Topics	Unit 2: Creating Systems to Manage Information Learners study the design, creation, testing and evaluation of a relational database system to manage information. Unit 3: Using social media in Business A. Explore the impact of social media on the ways in which businesses promote their products and services B. Develop a plan to use social media in a business to meet requirements C. Implement the use of social media in a business..	Unit 2: Creating Systems to Manage Information Learners study the design, creation, testing and evaluation of a relational database system to manage information. Unit 3: Using social media in Business A. Explore the impact of social media on the ways in which businesses promote their products and services B. Develop a plan to use social media in a business to meet requirements C. Implement the use of social media in a business..	Unit 2: Creating Systems to Manage Information Learners study the design, creation, testing and evaluation of a relational database system to manage information. Unit 3: Using social media in Business A. Explore the impact of social media on the ways in which businesses promote their products and services B. Develop a plan to use social media in a business to meet requirements C. Implement the use of social media in a business..
Exam Spec	BTEC Nationals | Information Technology (2016) | Pearson qualifications	BTEC Nationals | Information Technology (2016) | Pearson qualifications	BTEC Nationals | Information Technology (2016) | Pearson qualifications
Assessment	Unit 2: External Exam • This unit is externally assessed through a task set and marked by Pearson. • The set task will be completed under supervised conditions. • Part A will be carried out in three hours on the afternoon of the first day. • Part B will be carried out in two hours on the morning of the second day. • The set task will assess learners' ability to design, create, test and evaluate a relational database system to manage information. • The number of marks for the unit is 66 Unit 3: Internal Assessment • An assignment is issued to learners as an assignment brief with a defined start date, a completion date and clear requirements for the evidence that they need to provide. • There may be specific observed practical components during the assignment period. • Assignments can be divided into tasks and may require several forms of evidence. A valid assignment will enable a clear and formal assessment outcome based on the assessment criteria		
E/L	Extended Learning Sheets for each topic will be set on teams with the class work		

BTEC ICT – Year 13

Go Ba

	Autumn Term	Spring Term	Summer Term
Topics	**Unit 1: Creating Systems to Manage Information** A. Digital devices in IT systems B. Transmitting Data C. Operating Online D. Protecting Data & Information E. Impact of IT systems F. Issues Affecting Systems **Unit 6: Website Development** A. Understand the principles of website development B. Design a website to meet client requirements C. Develop a website to meet client requirements.	**Unit 1: Creating Systems to Manage Information** A. Digital devices in IT systems B. Transmitting Data C. Operating Online D. Protecting Data & Information E. Impact of IT systems F. Issues Affecting Systems **Unit 6: Website Development** A. Understand the principles of website development B. Design a website to meet client requirements C. Develop a website to meet client requirements.	**Unit 1: Creating Systems to Manage Information** A. Digital devices in IT systems B. Transmitting Data C. Operating Online D. Protecting Data & Information E. Impact of IT systems F. Issues Affecting Systems **Unit 6: Website Development** A. Understand the principles of website development B. Design a website to meet client requirements C. Develop a website to meet client requirements.
Exam Spec	BTEC Nationals | Information Technology (2016) | Pearson qualifications	BTEC Nationals | Information Technology (2016) | Pearson qualifications	BTEC Nationals | Information Technology (2016) | Pearson qualifications
Assessment	Unit 1 External Exam • This unit is externally assessed through a written examination set and marked by Pearson. • The examination is two hours in length. • Learners will be assessed on their understanding of computer systems and the implications of their use in personal and professional situations. • The number of marks for the unit is 90 Unit 6: Internal Assessment • An assignment is issued to learners as an assignment brief with a defined start date, a completion date and clear requirements for the evidence that they need to provide. • There may be specific observed practical components during the assignment period. • Assignments can be divided into tasks and may require several forms of evidence. • A valid assignment will enable a clear and formal assessment outcome based on the assessment criteria		
E/L	Extended Learning Sheets for each topic will be set on teams with the class work		

Computer Science - Year 9

	Autumn Term	Spring Term	Summer Term
Topics	**Python Programming –** Basic Inputs / Outputs Print Methods Data Types Basic Selection Statements Maths in Python Iteration **Computer Systems** CPU Architecture FDE Cycle Secondary Storage Computer Specifications **Intro to Data Representation** Binary Units Hexadecimal	**Data Representation (continued)** Characters Sound Images **Introduction to Networks** What are networks Internet & WWW IP Suite Packet Switching **Impacts of technology** How does technology impact us? The law, data protection, and copyright The Freedom of Information Act and The Computer Misuse Act Cultural impacts Privacy and surveillance Environmental impact Ethical impact Putting it all together	**3D Modelling** Films, television, computer games, advertising, and architecture have been revolutionised by computer-based 3D modelling and animation. In this unit learners will discover how professionals create 3D animations using the industry-standard software package, Blender. By completing this unit learners will gain a greater understanding of how this important creative field is used to make the media products that we consume. Sessions will take learners through the basics of modelling, texturing, and animating; outputs will include 3D models and short videos. **End of Year Project** Students will take part in project-based work at the end of year 9 to showcase the skills they have gained in the course to date. Students will be expected to create a presentation and programming project and present both to the class.
Exam Spec w/link	GCSE (9-1) Computer Science J277 Specification (ocr.org.uk) 1.1 , 2.2 1.2 See how we cover the KS4 National Curriculum here	GCSE (9-1) Computer Science J277 Specification (ocr.org.uk) 1.2, 1.3, 1.6 See how we cover the KS4 National Curriculum here	GCSE (9-1) Computer Science J277 Specification (ocr.org.uk) 1.1 See how we cover the KS4 National Curriculum here
Assessment	End of Unit tests marked out of 50 will take place roughly each half term. End of year assessment w/b 8th May Multiple choice questions through the use of Quizizz are often used at the end of each lesson to assess students.		
E/L	Students have access to a wide range of resources on Microsoft Sharepoint Extended learning tasks and challenges are set via Teams channels. Additional programming tasks may be set via Teams or websites such as Repl.		

Computer Science - Year 10

	Autumn Term	Spring Term	Summer Term
Topics	**Intermediate Python Programming Skills –** For Loops vs While Loops List processing String methods Functions vs Parameters Writing pseudocode Creating / interpreting Flowcharts **Systems Architecture** RAM vs ROM Cache, Clock Speed and Cores Flash vs Optical vs Magnetic How CPU performance is affected by various components	**Logic Gates & Languages** And / Or & Not gates Designing Truth Tables Types of programming errors Translators & facilities of languages IDE's **Network Security** Network threats Preventing vulnerabilities Operating Systems Utility software	**Algorithms** Computational thinking Searching algorithms Sorting algorithms Practice programming exam questions **Programming practice** Writing Python programs in an exam Pseudocode interpretation Trace tables SQL ***End of year test w/b 26th June***
Exam Spec w/link	GCSE (9-1) Computer Science J277 Specification (ocr.org.uk) 2.2 , 1.1 See how we cover the KS4 National Curriculum here	GCSE (9-1) Computer Science J277 Specification (ocr.org.uk) 2.4,1.4 See how we cover the KS4 National Curriculum here	GCSE (9-1) Computer Science J277 Specification (ocr.org.uk) 2.1,2,2 , 2.3 See how we cover the KS4 National Curriculum here
Assessment	Exam questions specific to units at the end of every topic Weekly programming style exam questions End of year assessment w/b 26th June Multiple choice questions through the use of Quizizz are often used at the end of each lesson to assess students. Programming tasks set on Repl.it		
E/L	Students have access to a wide range of resources on Microsoft Sharepoint Extended learning tasks and challenges are set via Teams channels. Exam style questions used for retrieval practice.		

Computer Science - Year 11

	Autumn Term	Spring Term	Summer Term
Topics	**Systems Architecture** FDE cycle RAM vs ROM Cache, Clock Speed and Cores Flash vs Optical vs Magnetic How CPU performance is affected by various components **Data Representation** Hexadecimal Binary Shifts Binary Addition ASCII vs Unicode Representing Images & Sound ***Paper 1 test encompassing 1.1 – 1.6 of GCSE specification***	**Writing advanced Python programs using subroutines** Students will be expected to complete programming tasks each week this term that will encompass the skills needed in their GCSE examinations. Students progress will be tracked weekly and will involve the following programming constructs – ✓ Subroutines ✓ Selection ✓ Iteration ✓ Reading and writing to file ✓ List operations ✓ Basic Input / Output **Logic gates & Languages** Applying Boolean logic to given scenarios Creating robust programs Assembly language vs Machine code IDE tools Defensive Design	***Exam style questions*** ***Student informed revision lessons.*** ***Students who wish to take A Level Computer Science can obtain A Level transition work from Mr Marshall.*** OCR A Level Computer Science H446 Specification
Exam Spec w/link	GCSE (9-1) Computer Science J277 Specification (ocr.org.uk) 1.1 – 1.6 See how we cover the KS4 National Curriculum here	GCSE (9-1) Computer Science J277 Specification (ocr.org.uk) 2.4,1.4 See how we cover the KS4 National Curriculum here	GCSE (9-1) Computer Science J277 Specification (ocr.org.uk) 2.4,1.4 See how we cover the KS4 National Curriculum here
Assessment	Exam questions specific to units at the end of every topic Weekly programming style exam questions GCSE Examinations first 2 weeks of public examinations see school website for examination timetable. Multiple choice questions through the use of Quizizz are often used at the end of each lesson to assess students. Programming tasks set on Repl.it Paper 1 test – December Two exam papers will be sat every half term from January until the GCSE exam dates.		
E/L	Students have access to a wide range of resources on Microsoft Sharepoint Extended learning tasks and challenges are set via Teams channels. Exam style questions used for retrieval practice.		

Go Back

Computer Science - Year 12

	Autumn Term	Spring Term	Summer Term
Topics	**Unit 1 – Components of a Computer (1.1)** Processor components Processor performance Types of processor Input devices Output devices Storage devices **Unit 2 – Systems Software (1.2.1 – 1.2.2)** OS functions Types of OS Nature of application software Programming languages translators **Unit 5 – Networks (1.3.3 – 1.3.4)** Structure of the Internet Internet communication Network security & threats HTML & CSS JavaScript Search Engine indexing Client Server & P2P	**Unit 4 - Exchanging Data (1.3.1 – 1.3.2)** Compression & encryption Database concepts Relational databases and normalisation Introductions to SQL Defining and updating tables using SQL Transaction processing **Unit 7 – Data Structures (1.4.2)*** Arrays & Tuples Queues Lists & Linked lists Stacks Hash tables Graphs Trees **Unit 8 – Boolean Algebra (1.4.3)** Logic Gates Boolean expressions Karnaugh maps Adders and D type flip flops **** Students will also be introduced to the initial ideas behind Object Orientated Programming (OOP) during this module***	**Unit 9 - Legal & Cultural issues (1.5)** Computing related legislation Ethical, moral & Cultural issues Privacy & censorship **Unit 6 – Data Types (1.4.1)** Data types, binary and hexadecimal ASCII & Unicode Binary Arithmetic Floating point Arithmetic Bitwise manipulation and masks **Programming Project Introduction (NEA component 20%)** In the summer term of Y12 students will begin to think about their coursework element including choosing a project title and learning a new programming language (LUA).
Exam Spec w/link	OCR A Level Computer Science H446 Specification	OCR A Level Computer Science H446 Specification	OCR A Level Computer Science H446 Specification
Assessment	Exam questions specific to units at the end of every topic. Revision lists are circulated via students individual OneNote notebooks. Students will complete 2 full AS papers in the Y12 assessment week w/b 26/06/23 Programming tasks will be set on the REPL.it team page.		
E/L	Students have access to a wide range of resources on Microsoft Sharepoint Students have access to a OneNote Notebook that allows them to have access to all lesson notes and activities Students are expected to use their directed time to complete activities not finished in class as well as completing lesson notes.		

Go Back

Computer Science - Year 13 (AQA specification until June 2023)

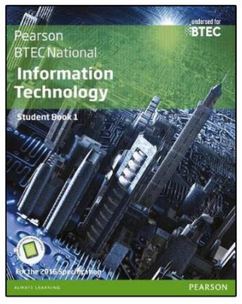
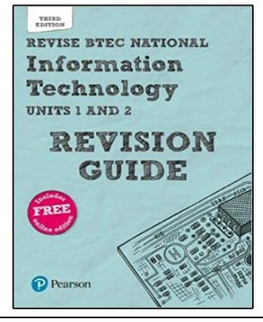
	Autumn Term	Spring Term
Topics	**Unit 9 – Regular Languages (4.3.3 & 4.4.2 – 4.4.5)** Mealy Machines Sets Regular Expressions Turing machine Backus-Naur form Reverse Polish Notation **Unit 10 – The Internet (4.9.3 – 4.9.4)** Structure of the Internet Packet switching and routers Internet security TCP/IP **Coursework Lessons – Analysis & Design (Grade descriptors below)** **Analysis -** Fully or nearly fully scoped analysis of a real problem, presented in a way that a third party can understand. Requirements fully documented in a set of measurable and appropriate specific objectives, covering all required functionality of the solution or areas of investigation. Requirements arrived at by considering, through dialogue, the needs of the intended users of the system, or recipients of the outcomes for investigative projects. Problem sufficiently well modelled to be of use in subsequent stages. **Design-** Fully or nearly fully articulated design for a real problem, that describes how all or almost all of the key aspects of the solution/investigation are to be structured/are structured **Technical -** A system that meets almost all of the requirements of a solution/an investigation (ignoring any requirements that go beyond the demands of A-level). Above average performance: Group A equivalent algorithms and model programmed more than well to excellent; all or almost all excellent coding style characteristics; more than to highly effective solution. Average performance: Group A equivalent algorithms and/or model programmed well; majority of excellent coding style characteristics; an effective solution. Below average performance: Group A equivalent algorithms and/or model programmed just adequately to fully adequate; some excellent coding style characteristics; less than effective to fairly effective solution.	**Unit 8 – Algorithms** Recursive Algorithms Big O notation Searching and Sorting Graph traversal algorithms Optimisation Algorithms Limits of Computation **Unit 12 – OOP & Functional Programming** Basic concepts of OOP OOP Design principles Functional Programming Function Application Big data **Coursework Lessons – Testing & Evaluation (Grade descriptors below)** **Testing -** Clear evidence, in the form of carefully selected representative samples, that thorough testing has been carried out. This demonstrates the robustness of the complete or nearly complete solution/thoroughness of investigation and that the requirements of the solution/ investigation have been achieved**.** **Evaluation –** Full consideration given to how well the outcome meets all of its requirements. How the outcome could be improved if the problem was revisited is discussed and given detailed consideration. Independent feedback obtained of a useful and realistic nature, evaluated and discussed in a meaningful way. **Grading Structure - NEA** Section / Total Analysis 9 Design 12 Technical Solution 42 Testing 8 Evaluation 4 Totals 75 **Skeleton Programming Lessons** After covering the above topics students will begin to work on their Skeleton code that form the majority of their Paper 1 assessment,
Exam Spec w/link	https://www.aqa.org.uk/subjects/computer-science-and-it/as-and-a-level/computer-science-7516-7517/specification-at-a-glance	https://www.aqa.org.uk/subjects/computer-science-and-it/as-and-a-level/computer-science-7516-7517/specification-at-a-glance
Assessment	Exam questions specific to units at the end of every topic. Revision lists are circulated via students individual OneNote notebooks. Programming tasks will be set on the REPL.it team page. 1:1 coursework session for students will take place throughout the Autumn & Spring term Coursework deadlines **Section** / **Deadline** Analysis – Thursday 24th November 2022 Design – Thursday 8th December 2022 Implementation – Thursday 24th February Testing – Thursday 9th March 2023 Evaluation & all final versions – Thursday 23rd March 2023 Students will be expected to spend time working on their coursework implementation outside of lessons.	
E/L	Students have access to a wide range of resources on Microsoft Sharepoint Students have access to a OneNote Notebook that allows them to have access to all lesson notes and activities Students are expected to use their directed time to complete activities not finished in class as well as completing lesson notes.	

Computer Science Resources

KS4	KS5
Free OCR Computer Science GCSE Revision | Seneca (senecalearning.com) GCSE topics — Isaac Computer Science GCSE Computer Science - OCR - BBC Bitesize	***Past Papers & Useful Links*** Computer Science Revision - PMT (physicsandmathstutor.com) A level topics — Isaac Computer Science(OCR – **Y12 only**) A level topics — Isaac Computer Science(AQA – **Y13 only**) All students have online access to a version of the A Level textbook via the Classoos app.

BTEC KS4 / KS5 Resources

KS4 Resources		
OCR Creative iMedia Levels 1/2: Illustrated Revision and Practice (ClearRevise OCR Creative iMedia	https://www.amazon.co.uk/New-Cambridge-National-Creative-iMedia	

KS5 Resources	
 BTEC National Information Tech Illustrated revision & practice ISBN 978-1292140414 amazon PG ONLINE	 Revise BTEC Information Technology Revision Guide ISBN 978-1292299099 amazon PG ONLINE

Key Stage	Careers in the curriculum
KS3	The following careers encompass a range of roles within the field of computing and technology. They are connected to the foundational knowledge and skills that students can acquire through the Key Stage 3 NCCC curriculum. • Software Developer – Year 8 App Development • Data Analyst – Year 8 Data Modelling • Web Designer – Year 8 HTML Web Developing. • Network Administrator – Year 7 Networking • Cybersecurity Analyst – Year 7 Networking • Systems Analyst – Year 8 Data Modelling • Game Developer – Year 7 & 8 Programming in Kodu, Scratch and Python • User Interface (UI) Designer - Year 8 App Development, Vector Graphics • IT Project Coordinator – Year 7 Collaborating Online Respectively
KS4	The OCR Creative iMEDIA course is designed to develop students' creative and technical skills in digital media production. It focuses on areas such as graphic design, website development, digital animation, and audio production. Here are some careers that are closely linked to the OCR Creative iMEDIA course Module 093: Creative Roles: • Animator - Unit R093 and R096 • Content Creator - Unit R093 and R094 • Copywriter - Unit R093 and R094 • Graphic Designer - Unit R094 • Illustrator - Unit R094 • Graphic Artist - Unit R094 • Photographer - Unit R093 • Script Writer – Unit R093 Technical Roles: • Camera Operator - Unit R093 and R094 • Games Programmer - Unit R093 and R094 • Sound Editor - Unit R093, R094 & R096 • Audio Tech - Unit R093, R094 & R096 • Video Editor - Unit R093, R094 & R096 • Web Developer - Unit R093 and R094 Senior Roles: • Campaign Manager - Unit R093 and R094 • Creative Director - Unit R093 and R094 • Director - Unit R093 and R094 • Editor - Unit R093 and R094 • Production Manager - Unit R093 and R094 The GCSE Computer Science OCR course covers various units that provide students with a strong foundation in computer science principles, programming, algorithms, and computational thinking. Here are some careers that are closely linked to the GCSE Computer Science OCR course, along with the corresponding units: • Software Developer/Engineer • Data Analyst • Network Administrator/Engineer • Cybersecurity Specialist • Systems Analyst • IT Project Manager • AI/Machine Learning Engineer • Computer Hardware Engineer
KS5	The BTEC IT Level 3 Extended Certificate is a vocational qualification that provides students with a solid foundation in various aspects of information technology. It covers topics such as computer systems - software development - data management - and IT support. Here are some careers. • IT Support Technician – Unit 1 • Web Developer – Unit 6 • Database Administrator – Unit 2 • Network Administrator/Engineer – Unit 1 • Systems Analyst – Unit 1 & 2 • IT Project Manager – Unit 1