



YEAR 7 COMPUTER SCIENCE: MY LEARNING JOURNEY

AUTUMN 1



ONLINE SAFETY

Knowledge: Pupils will learn about the key concepts on how to stay safe online. We will be looking at digital footprint, protecting passwords, and the pros and cons of social media. Students will also be able to recognise spam and phishing emails as well as virus attacks and how to prevent them.

AUTUMN 2:



DIGITAL LITERACY

Knowledge: We explore the use of Google software's available on Google Chromebooks. Students will create and format information sheets on Google Docs and Google slides using a range of formatting tools. Students will also work on Google Sheets exploring how to format, create formulas and how functions can be implemented and used.

SPRING 1:



SCRATCH

Knowledge: Students will create a game involving a 'main character', 'enemy character', 'rewards character', and program levels into their game. Students will program movement, add scoring, and add levels using the block based programme.

SPRING 2



HARDWARE AND SOFTWARE

Knowledge: We learn about how components work and make up a computer. We also look at which components are considered an input and output. Students will be able to know the use of software's and operating systems and how devices use them.

SUMMER 1 :



BINARY

Knowledge: Students are learning how computers "think" using Binary, a system made up entirely of 1's and 0's. Students will learn how to decode these strings of numbers, converting them into the familiar figures we use every day.

SUMMER 2 :



HTML

Knowledge: Students will look at how websites are coded using HTML. They will build a website using 'tags' to structure content, insert images, and create hyperlinks. They will explore how a simple text file is transformed by a web browser into a professional-looking web page.



YEAR 8 COMPUTER SCIENCE: MY LEARNING JOURNEY

AUTUMN 1



DIGITAL WORLD

Knowledge: Students look at how they can use different prompts to stay safe online. Students will learn how to keep themselves safe from copyright and how they can recognise a copyrighted item. Students will do practical learning on how to tackle cyber-abuse.

AUTUMN 2:



DATA REPRESENTATION

Knowledge: Students will learn how base-2 numbers work in computing and how we can use this to convert into numbers, text, images, videos, and sound. We focus on the use of ASCII when representing text, Pixels when representing images, and Sample Rates when representing sound.

SPRING 1:



SCRATCH

Knowledge: Students will make and develop their own game using a block based program. They will program their main character to move using the keys and the enemy to move automatically. They will also use variables and functions to add a scoring system to their game as well as program new levels and rewards.

SPRING 2:



INTRODUCTION TO PYTHON

Knowledge: Students will have a practical practice on programming using Python. They will be introduced to the 'print' functions and how they can tackle syntax errors. Students will set variables and functions, and learn how to implement selection and iteration into their code.

SUMMER 1 :



ENCRYPTION AND EMERGING TECHNOLOGIES

Knowledge: Students will look at what encryption is and the different types of encryption keys that are used. They will have a practice on 'cracking' some cryptic code using a Caesar cipher shift. They will look at how modern technology has used encryption to keep messages and chats private.

SUMMER 2 :



EVENT-DRIVEN SCRATCH

Knowledge: Students will use their knowledge from scratch and python from earlier this year and look at how event-driven programming works. They will create a magic 8-ball game that will need prompts from the user. They will also create a conversion calculator.



YEAR 9 COMPUTER SCIENCE: MY LEARNING JOURNEY

AUTUMN 1:



BINARY ADDITION

Knowledge: Students will build on their knowledge of binary and explore binary addition. Students will practice adding strings of 1s and 0's, discovering how computers handle "carrying" numbers and what happens during an overflow error

AUTUMN 2:



BOOLEAN LOGIC

Knowledge: Students will create "logic gates" such as AND, OR, and NOT. Students will learn how hardware circuits process inputs to produce specific outputs. They will also be building "Truth Tables" to map out these outcomes

SPRING 1:



NETWORKS

Knowledge: Students will investigate how protocols are used within a network and be able to identify the difference between WWW and the Internet. They will also be able to identify the physical hardware that keeps data moving.

SPRING 2:



ALGORITHMS

Knowledge: Students will master 'computational thinking' learning how to break down complex problems into a step-by-step solution. We will also create a flowchart to visually see the solution to a computing problem. We will develop this into trace tables to see how to spot errors in coding using a single line. These ideas are then put into practice using Linear Search.

SUMMER 1:



CYBER SECURITY

Knowledge: Students will explore how individuals and organisations protect themselves from digital threats. We will investigate the methods used by cyber criminals, such as social engineering, phishing, and malware, while learning about the technical defences used to stop them.

SUMMER 2:



PYTHON

Knowledge: The purpose of this unit is to develop our knowledge and understanding of python programming. We will build on key concepts such as variables, sequence, selection, and iteration.



YEAR 10 IMEDIA: MY LEARNING JOURNEY

AUTUMN 1:



SYSTEMS ARCHITECTURE:

Knowledge: Students will cover the Von Neumann Architecture and the CPU's components (like the ALU and Control Unit). We also look at the cycle the CPU (FDE) and how the performance is affected by Clock Speed, Cores, and Cache Size. Finally, the unit distinguishes between general-purpose computers and specialised Embedded Systems .

AUTUMN 2:



NETWORKS

Knowledge: Students look at different network types (LAN, WAN), topologies (star, mesh), the hardware (NIC, router, switch) that makes a network and protocols (TCP/IP, HTTP, POP) that govern data transmission. They will also compare wired and wireless connections, discussing factors like bandwidth, security, and attenuation.

SPRING 1:



NETWORK SECURITY

Knowledge: Students examine threats to computer systems (malware, phishing, brute force) and various methods to prevent and mitigate them. We also look at defensive measures like firewalls, encryption, user access levels, and anti-malware software.

SPRING 2:



DATA REPRESENTATION

Knowledge: Students will explain how computers use binary (Base-2), hexadecimal (Base-16), and Denary (Base -10). We will look at how different data types are converted using specific systems, such as ASCII or Unicode for text, pixels and metadata for images, and sampling rates for sound.

SUMMER 1:



ETHICAL, LEGAL, CULTURAL AND ENVIRONMENTAL IMPACT

Knowledge: Students will explore the ethical question of 'should we?' while looking at the positive and negative impacts this has on the environment in regards to technology in the new world. They will also look at globalisation and privacy and make links with Data Protection laws, as well as Computer Misuse Act and the Copyrights Act.

SUMMER 2:



CODING WITH PYTHON

Knowledge: Students will code in Python focusing text-based programming by mastering the core building blocks of logic. They will learn how to store data in variables, control the flow of a program using selection (if/else statements), and use iteration (for/while loops) to repeat tasks efficiently.



YEAR 11 IMEDIA: MY LEARNING JOURNEY

AUTUMN 1



R093 - THE MEDIA INDUSTRY

Knowledge: Students explore the media industry, including media sectors, job roles, and the purpose of digital media products. They learn how products are planned to meet audience needs.

AUTUMN 2:



R093 - PRE PRODUCTION DOCUMENTATION

Knowledge: Students build on their industry knowledge by focusing on pre-production documentation, production processes, and legal and ethical considerations. Learning is consolidated through exam-style questions and revision activities in preparation for the external assessment.

SPRING 1:



R094 CONTROLLED ASSESSMENT

Knowledge: Students analyse a range of existing visual identities, exploring how colour, typography, and imagery are used to communicate messages. They plan and design digital graphics in response to a client brief, considering audience, purpose, and client requirements.

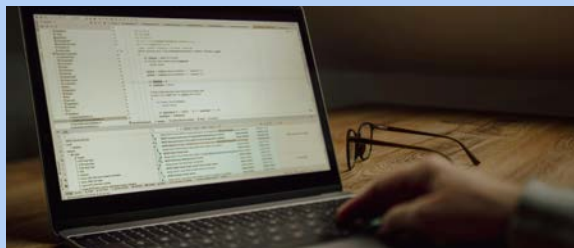
SPRING 2



R094 - CONTROLLED ASSESSMENT

Knowledge: Students create, refine, and review their final digital graphics using appropriate digital tools. They evaluate their work against the client brief and assessment criteria, making improvements based on feedback and testing.

SUMMER 1 :



R097 - CONTROLLED ASSESSMENT

Knowledge: Students plan and develop interactive digital media products, learning how to design effective layouts, navigation systems, and interactive features. A strong focus is placed on user experience, accessibility, and functionality.

SUMMER 2 :



R097 - CONTROLLED ASSESSMENT

Knowledge: Students finalise, test, and evaluate their interactive media products, ensuring they function as intended. They reflect on strengths and areas for improvement and assess how effectively the final product meets the original brief.