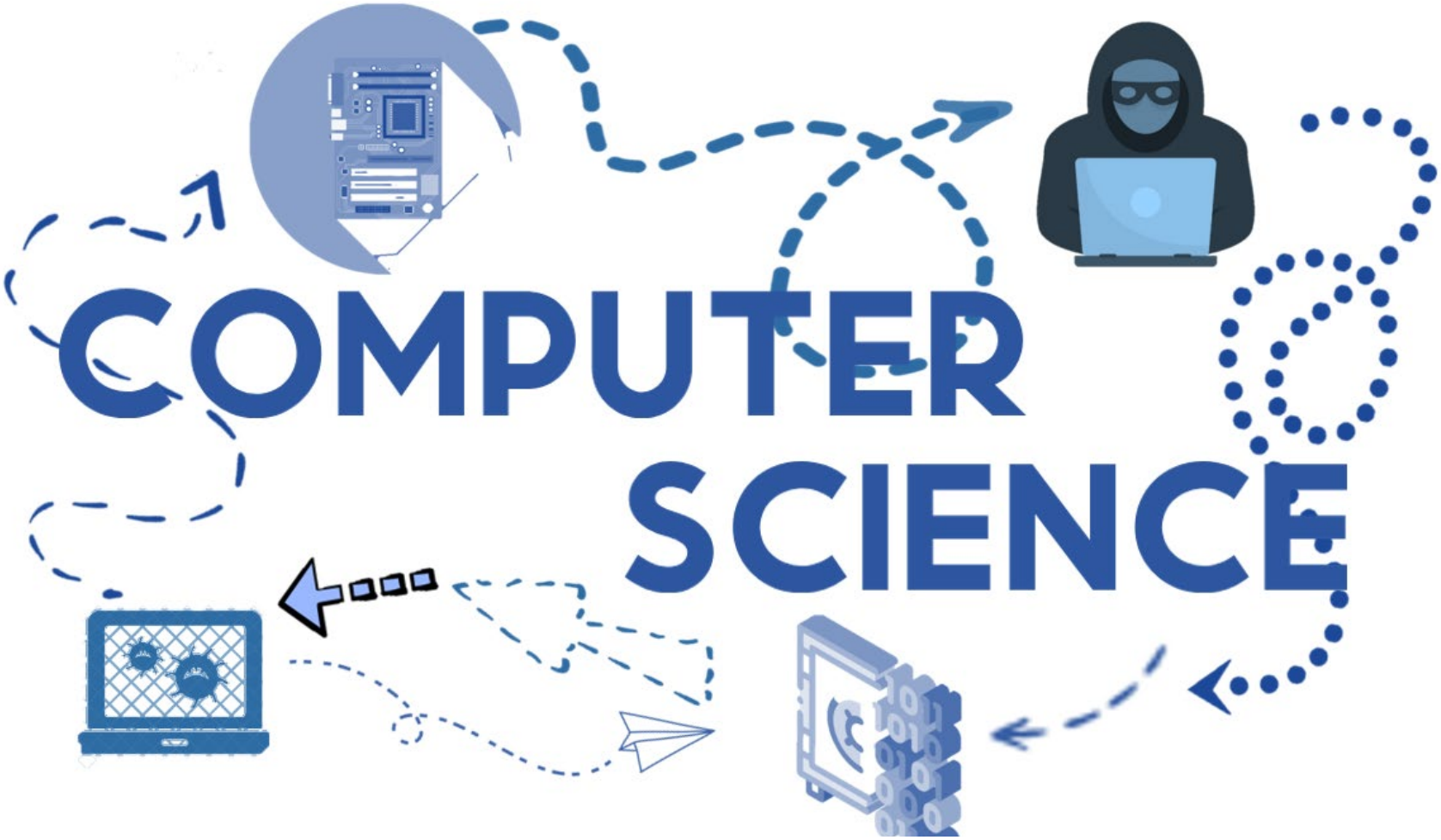

5-Year Curriculum Plan

Curriculum at a Glance

Year 7	Year 8	Year 9	Year 10	Year 11
E-Safety	Spreadsheet Modelling	Computer Science Basics	1.1 Systems Architecture	2.1 Algorithm/2.2 Programming
Scratch	Spreadsheet Modelling	Introduction into Python	1.2 Memory & Storage	2.3 Programs/ 2.4 Boolean Logic
Scratch	Advanced Scratch	Business Basics	1.3 Networks & Protocols	2.5 Programming languages
Kodu	Advanced Scratch	Business Basics	1.4 Network Security	Consolidation
Kodu	Creating a video	iMedia Basics	1.5 Systems Software	Consolidation
Animation	AI & Machine Making	iMedia Basics	1.6 Digital Technology	Exams

Computing 5YR Curriculum Plan (Current Yr7-11)

Focus / Term	Half Term One	Half Term Two	Half Term Three	Half Term Four	Half Term Five	Half Term Six
Year 7 Topic Covered and End Points	**E-Safety** End Point • To know the dangers of using the internet • To know ways to deal with cyberbullying • To know the positives and dangers of social media	**Basic games programming in Scratch** End Point • To know how to use algorithms to create a basic game • To know how to use movement in game making • To know how to use variables	**Basic games programming in Scratch** End Point • To know how to use algorithms to create a basic game • To know how to use movement in game making • To know how to use variables	**Coding in Kodu** End Point • To know how to code algorithms • To know how to use movement and score making • To know how to use variables	**Coding in Kodu** End Point • To know how to code algorithms • To know how to use movement and score making • To know how to use variables	**Animation** End Point • To know the different types of animation • To record a stop frame animation scene • To use Monkey Jam software to create a video
NC	Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct, and know how to report concerns	Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems, use 2 or more programming languages. understand simple Boolean logic [for example, AND, OR and NOT]	Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems, use 2 or more programming languages. understand simple Boolean logic [for example, AND, OR and NOT]	Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems, use 2 or more programming languages.	Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems, use 2 or more programming languages.	Understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally

Powerful Knowledge and Careers	Everything you need to know about staying safe on the internet	A day in the life of a Game's Designer	Why are flow charts used for programming? Games coder	What is an algorithm? Software developer	What is a variable? Programmer	A day in the life of a CGI animator
Tier 3 Words	E-Safety, Internet, Social Media, Cyberbullying, Bystander, Upstander Relationships, Network, Viruses, Phishing, Copyright, Data Protection,	Flow chart, Instruction, Algorithm, Movement, Variable, Decision	Flow chart, Instruction, Algorithm, Movement, Variable, Decision, Boolean	Flow chart, Instruction, Algorithm, Movement, Variable, Decision	Flow chart, Instruction, Algorithm, Movement, Variable, Decision	Animation, stop frame, 2D, Flick Book, Hand drawn, CGI
Long Term Retrieval	KS2 E-Safety, staying safe online, dangers of the internet	Dangers of game playing online and using the internet	Key terms linked to Scratch and game making	How to draw a flow chart to follow instructions	Key terms linked to Kodu and game making	Types of animation, how animation is used
Assessment Details	**E-Safety Assessment**	**Scratch Theory Assessment**	**Scratch Game Making**	**Kodu Mid Unit Assessment**	**Kodu Practical Unit**	**Animation Assessment**
Misconceptions	Differences between bystander and upstander	Control and Event blocks in Scratch have different jobs	Control and Event blocks in Scratch have different jobs	Kodu has to complete a when task before completing a do task	Kodu has to complete a when task before completing a do task	That all animation is made using CGI
Homework	Study pack	Study pack	Study pack	Study pack	Study pack	Study pack
Year 8 Topic Covered and End Points	**Spreadsheet Modelling** <u>End Point</u> • To know the key features of a spreadsheet • To know how to create formulas in spreadsheets • To know how to format a spreadsheet	**Spreadsheet Modelling** <u>End Point</u> • To know how to create functions • To know the range of graphs and create • To know how to create a spreadsheet model	**Advanced game making in Scratch** <u>End Point</u> • To know how to create a detailed flow chart • To know the difference between selection and abstraction	**Advanced game making in Scratch** <u>End Point</u> • To know how to create a detailed flow chart • To know the difference between selection and abstraction	**Creating a video** <u>End Point</u> • To know the uses of a storyboard • To know how to create a storyboard • To know how to create a basic video for storytelling	**AI & Machine Making** <u>End Point</u> • To know what AI is and how it can be used • To know the morals and ethics around AI • To know how AI can be dangerous
NC	Design, use and evaluate computational	Design, use and evaluate computational	Design, use and evaluate computational	Design, use and evaluate computational	Undertake creative projects that involve selecting, using, and	Design, use and evaluate computational

	abstractions that model the state and behaviour of real-world problems and physical systems	abstractions that model the state and behaviour of real-world problems and physical systems	abstractions that model the state and behaviour of real-world problems and physical systems, use 2 or more programming languages. understand simple Boolean logic [for example, AND, OR and NOT]	abstractions that model the state and behaviour of real-world problems and physical systems, use 2 or more programming languages. understand simple Boolean logic [for example, AND, OR and NOT]	combining multiple applications	abstractions that model the state and behaviour of real-world problems and physical systems, understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy
Powerful Knowledge and Careers	How real life can be modelled Weather reporter	How modelling can be used as a calculator Mathematician	A day in the life of a Game's Designer	What is a variable? Programmer	A day in the life of a CGI animator	Can robots take over from humans? Robot developer
Tier 3 Vocab	Cell, Column, Row, Formula, Auto Sum, Border, Functions, Ave, Max, Min, Graph, Formatting	Cell, Column, Row, Formula, Auto Sum, Border, Functions, Ave, Max, Min, Graph, Formatting	Flow chart, Instruction, Algorithm, Movement, Variable, Decision	Flow chart, Instruction, Algorithm, Movement, Variable, Decision	Video, Camera angle, frames, long shot, close up, mid shot, aerial, over the shoulder, tracking	AI, Machines, Robots, Ethics, Self-Driving cars, Turing Effect, Moral Machine
Long Term Retrieval	Development of key terms	How spreadsheets model real world situations	Development of key terms from year 7	How variables can be added to game play	Types of camera angles and movement	Ways AI can be used to improve human lives
Assessment details	**Spreadsheet theory assessment**	**Spreadsheet practical assessment**	**Scratch Theory Assessment**	**Scratch Game Making**	**Project based assessment**	**AI theory assessment**
Misconceptions	Column is letters and goes up/down, a row is numbers and goes across	All formulas must have an equal sign at the start	Control and Event blocks in Scratch have different jobs	Control and Event blocks in Scratch have different jobs	Differences between camera angles and camera shots	Ethics and morals of AI can be positive and negative
Homework	Study pack	Study pack	Study pack	Study pack	Study pack	Study pack
Year 9 Topic Covered and End Points	**Computer Science Basics** <u>End Point</u> • To know the differences	**Introduction in Python** <u>End Point</u> • To know how to write basic	**Business Basics Unit** <u>End Point</u> • To know the importance of	**Business Basics Unit** <u>End Point</u> • To know how a business uses the marketing mix	**iMedia Basics Unit** <u>End Point</u> • To know the pre-production	**iMedia Basics Unit** <u>End Point</u> • To know the pre-production

	between hardware and software • To be able to calculate binary • To be able to know threats to a network	programming language • To be able to correct syntax and logical errors	meeting customer needs • To know how market research can be used • To know how a business can be successful in a competitive environment	• To know the importance of having a high-quality product • To know how a franchise works	documents and the features • To know how to design and create the pre-production documents	documents and the features • To know how to design and create the pre-production documents
NC	Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal], understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems, understand how instructions are stored and executed within a computer system;	Understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem, use 2 or more programming languages, at least one of which is textual	The competitive environment and the impact of risk and reward on business activity, Marketing - The purpose of marketing, its role within business and how it influences business activity	Marketing-the marketing mix and the importance of each of the four elements – price, product, promotion and place – and how they work together	Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems, understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and	Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems, understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging

	understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits				meeting the needs of known users, create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability	goals, including collecting and analysing data and meeting the needs of known users, create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability
Powerful Knowledge and Careers	How a computer is put together Software engineer	Coding in another programming language Software developer	The focus of meeting customer needs Entrepreneur	A day in the life of a business owner Franchise owner	How a storyboard is made and presented Film Maker	The importance of camera angles and lighting Cameraman
Tier 3 Vocab	Hardware, software, CPU, RAM, ROM, Virus, Phishing, Malware, Binary, Logic Gate, Boolean	Python, Variable, Syntax Error, Logic Error,	Customer, Market Research, Competitors, Environment, Primary, Secondary, Qualitative, Quantitative	Marketing Mix, 4 Ps, Product, Price, Place, Promotion, USP, Franchise, Franchisor, Franchisee	Pre-Production Documents, Mood Board, Script, Mind Map, Storyboard, Visualisation diagram, Camera Angles	Pre-Production Documents, Mood Board, Script, Mind Map, Storyboard, Visualisation diagram, Camera Angles
Long Term Retrieval	Development of key terms	How to write python coding	How businesses use market research	Development of key terms from HT3	How companies use pre-production documents	Development of key terms from HT5
Assessment Details	**Computer Science theory assessment**	**Python practical assessment**	**Customer needs and market research assessment**	**Marketing Mix assessment**	**Pre-Production assessment**	**Pre-production assessment**
Misconceptions	Binary is base 2 and denary is base 10	The difference between a syntax error and a logical error	Primary research has never been collected before, secondary research has	Franchisor owns the business and franchisee buys into the business	Differences between camera angles and camera shots	How to draw a storyboard with the correct annotations
Homework	Study pack	Study pack	Study pack	Study pack	Study pack	Study pack
Year 10 GCSE Computer Science	**1.1 Systems Architecture**	**1.2 Memory and Storage**	**1.3 Networks and Protocols**	**1.4 Network Security** End Point	**1.5 Systems Software** End Point	**1.6 Digital Technology**

Topic Covered and End Points	<u>End Point</u> • To know the parts of a computer • To know the registers of the FE cycle • To know what an embedded system is	<u>End Point</u> • To know difference between RAM & Secondary storage • To know how Cache memory works • To know how compression is used on files	<u>End Point</u> • To know the difference between client and p2p server • To know the layers and protocols used by computers • To know the differences between LAN and WAN	• To know the range of threats to a computer system • To be able to identify and prevent vulnerabilities • To be able to explain how SQL injection is used	• To know the different operating systems that can be used • To be able to explain the range of utility software • To know how encryption is used	<u>End Point</u> • To know the ethical and legal issues of technology • To know the environmental effects of disposing PC's • To know the laws and legislations
NC	Develop their capability, creativity and knowledge in computer science, digital media and information technology, develop and apply their analytic, problem-solving, design, and computational thinking skills, understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns	Develop their capability, creativity and knowledge in computer science, digital media and information technology, develop and apply their analytic, problem-solving, design, and computational thinking skills, understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns	Develop their capability, creativity and knowledge in computer science, digital media and information technology, develop and apply their analytic, problem-solving, design, and computational thinking skills, understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns	Develop their capability, creativity and knowledge in computer science, digital media and information technology, develop and apply their analytic, problem-solving, design, and computational thinking skills, understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns	Develop their capability, creativity and knowledge in computer science, digital media and information technology, develop and apply their analytic, problem-solving, design, and computational thinking skills, understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns	Develop their capability, creativity and knowledge in computer science, digital media and information technology, develop and apply their analytic, problem-solving, design, and computational thinking skills, understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns
Powerful Knowledge and Careers	How a computer is put together	How does cache memory work	What are the protocols for a computer	What are the threats to a network	How does encryption work	To know how robots can take over from humans
Tier 3 Vocab	Hardware, Input, Output, FE cycle, Registers, RAM, ROM,	Primary, RAM, Secondary, Magnetic, Optical,	Client server, P2P server, Wired, Wireless, Layers,	Virus, Anti-virus, Phishing, Social Engineering, Brute	Operating System, Defragmentation, Utility software, User	Digital device, Ethics, Morals. Remote working,

	Cache memory, Embedded system	SSD, Cache, Compression	Protocols, LAN, WAN, DNS, HTTP	force, Denial of service attacks, SQL Injection,	Interface, Multitasking, Encryption	Environment, Data protection, Cookies, Computer Misuse Act, Copyright
Long Term Retrieval	Inputs and outputs, Hardware and Software	Computer registers, RAM, ROM, CPU in the FE cycle	Differences between primary and secondary storage	Protocols and layers of a computer	Types of viruses and threats to a network and computer	Recap of all comp 1 terminology
Assessment Details	**1.1 End of Unit assessment**	**1.2 End of Unit assessment**	**1.3 End of Unit assessment**	**1.4 End of Unit assessment**	**1.5 End of Unit assessment**	**1.6 End of Unit assessment**
Misconceptions	Hardware is physical and can be touched, software is inside a computer	ROM stores data even when the computer is turned off, RAM only keeps data while the computer is on	LAN is based on a small geographical area, WAN is a large geographical area the internet	POP deletes the message on the server, IMAP saves the message on the server	Defragmentation rearranges data for better storage and access	Ethics and morals of AI can be positive and negative
Homework	Study pack	Study pack	Study pack	Study pack	Study pack	Study pack
Year 11 GCSE Computer Science Topic Covered and End Points	**2.1 Algorithms/2.2 Programming Fundamentals** <u>End Point</u> • To know how to calculate a range of searching algorithms • To know how to calculate a range of sorting algorithms • To know how to write code using pseudocode	**2.3 Producing robust programs / 2.4 Boolean Logic** <u>End Point</u> • To know the parts of a computer	**2.5 Programming languages** <u>End Point</u> • To know how to correct syntax and logical errors • To know how to write logic diagrams and truth tables • To know how to test code to check for errors	**Consolidation**	**Consolidation**	**Exams**
NC	Develop their capability, creativity and knowledge in computer science, digital media and information	Develop their capability, creativity and knowledge in computer science, digital media and information	Develop their capability, creativity and knowledge in computer science, digital media and information			

	technology, develop and apply their analytic, problem-solving, design, and computational thinking skills, understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns	technology, develop and apply their analytic, problem-solving, design, and computational thinking skills, understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns	technology, develop and apply their analytic, problem-solving, design, and computational thinking skills, understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns			
Powerful Knowledge and Careers	How to draw a flow chart	How a computer uses selection for instructions	How to draw a logic diagram			
Tier 3 Vocab	Searching algorithm, Linear, Binary, Sorting algorithm, Bubble sort, Insertion sort, Merge, Flowchart, Pseudocode	Sequence, Selection, Array, Iteration, Procedures, Functions, Records, Files	Logic diagram, Truth table, Defensive, Testing, Syntax Error, Logical Error, Translator	All Comp 1 and Comp 2 terminology	All Comp 1 and Comp 2 terminology	
Long Term Retrieval	Comp 1 terminology	How to work out a bubble, insertion and merge sort	How to calculate truth tables from using logic gates			
Assessment Details	**2.1/2.2 End of Unit assessment**	**2.3/2.4 End of Unit assessment**	**2.5 End of Unit assessment**	**Whole Comp 1 & 2 Assessment**	**Whole Comp 1 & 2 Assessment**	
Misconceptions	Difference in how to work out a linear algorithm and a binary algorithm	How sequence and selection are used to carry out instructions	How a syntax error is different to a logical error			
Homework	Study pack	Study pack	Study pack	Study pack	Study pack	Study pack