St Thomas More RC College

Long-Term Plan – Year 7 – Computer Science and Media

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 7	Topics to be covered:	• **Basic Computer Skills** • **What is a Computer?** • **E-Safety**	• **Using computers safely and responsibly** • **Algorithms**	**Basic Programming Skills using code.org**	**Spreadsheets (Theme Park)**	**KODU Programming – 3D games**	**Microbits Block Programming**
	Skills to be developed:	• Logging On • How to be safe online • Safe use of Social Media • CASE STUDY – Using Snapchat safely	• Understanding how to keep data safe • Using the internet safely • Identifying fake news and websites • Understand and creating simple algorithms	• Understand and explain simple algorithms. • Demonstrate Simple programming techniques – sequencing, selection and iteration to solve different challenges	• Basic spreadsheet Concepts • Use Formulas and Functions • Be able to sort data in a table • Format a Spreadsheet for a target audience • Creating Graphs that are suitable for the dataset.	• Create different environments and manipulate different game options • Use paths to make autonomous characters • Use creatable to spawn enemies and devise new levels • Plan and create a game for a target audience	• Develop programming concepts on a real-life hardware • Problem solve and develop challenges
	Key assessments taking place:	*Poster for a target Audience*	*End of Unit Test*	*Completion of a set of puzzles*	*End of unit test*	*Final Kodu game*	*Create a simple interactive game Complete Challenges*

	Key vocabulary	Username, Password, Hardware, Software, Applications, Formatting, Social media, Digital Footprint, Cyberbullying, e-safety, Target Audience	Personal Data, Privacy Settings, Fake news, Algorithms, Sequencing	Computational Thinking, Sequence, Pattern Recognition, Iteration Conditionals – If/ Else, Code Efficiency	Table, Cell, Row, Column, Formula, Function, Graph, File type	Gaming, navigation, programming, object, landscape, character, path, behaviour, clone, creatable, sequence, selection, execute, instructions, behaviour, function	Abstraction, Algorithm, Coding, Computational Thinking, Debugging, Decomposition, Hardware, Input device, Output device, Physical device, Repetition, Sequencing, Software
	Opportunities for retrieval practice: • Completion of more advanced tasks that build on previous learning • Quizzes – Kahoot/ Quizzizz • Completion of online questions – Seneca learning • Questioning and use of key vocabulary						

Long-Term Plan – Year 8 – Computer Science and Media

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 8	**Topics to be covered:**	**Game maker** **Making a simple game using code instructions**	**PC Basics** **Hardware and Software** **Binary Arithmetic**	**PC Basics and Emerging Technologies**	**Python Programming – The Basics**	**Sound Advertising**	**Graphics** **Vector and Bitmap**
	Skills to be developed:	• Develop simple programming techniques • Create simple game using sequencing	• Looking Inside the Box • Understand that a bit is the smallest amount of memory used by a CPU and 4 bits = nibble and 8 bits = 1 byte. • Explain the different hardware needed in a computer system • Convert Binary numbers into integers • Binary Addition – Add two binary strings together	•Health and Safety – Explain how to be safe and health when using computer systems including mobile phones •Networks – understand basic network structures •Technology Timeline - Research the history of a technology and identify the key dates in its development.	• Develop Text Based Programming skills including; • Sequencing and Selection Techniques to create a Chat bot and maths quiz • Develop Turtle drawing Techniques to create shapes using loops	• Identify jobs in sound industry • Identify elements of a radio advert • Plan for a radio advert • Develop sound editing skills	• Understand the difference between different graphic types • Develop web graphics techniques
	Key assessments taking place:	*End of Unit test*		*End of Unit Test*	*Create a Maths Quiz*	*Final Sound File*	*Completed graphic*
	Key vocabulary	sprite, objects, event, actions, room, audience, gameplay	Hardware, Software, CPU, RAM, Mother Board, Hard drive Fetch, Decode, Execute, Storage, Base 2/ Base 10 number	RSI, Carpal Tunnel Syndrome, Ergonomics, LAN – Local Area Network, WAN – Wide Area	Artificial intelligence, chat bot, Command prompt, syntax, variables, assign, integer, character, string, sequencing,	amplitude, wavelength, sound wave, sampling frequency, digital, analogue, bitrate	Vector, bitmap, properties, scalable, analogous, colour schemes, pixel, bit, byte, dpi, gradient fill effects, saturation,

			systems, Integer, Memory, Bit/ Nibble, Byte, Binary, Conversion, Networking	Network, Bus Network, Star Network Technological Development	selection, comment, python, script mode, interactive mode, troubleshooting, debugging, iteration, loops, turtle	diegetic, non-diegetic sound	brightness, contrast, resolution, layer, white space
	Opportunities for retrieval practice: • Completion of more advanced tasks that build on previous learning • Quizzes – Kahoot/ Quizzizz • Completion of online questions – Seneca learning • Questioning and use of key vocabulary						

Long-Term Plan – Year 9 – Computer Science and Media

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 9	**Topics to be covered:**	**Photoshop Skills**	• **Cyber Security** • **Amazon Fulfilment Centre**	**Text Based Programming PYTHON**	**Media Topic Reviewing Magazines**	**Introduction to Databases**	• **Networks** • **Ethical/ Environmental/ Legal Issues involved with Technology**
	Skills to be developed:	• Explain how and why the media manipulates images • Understanding and explain the purpose and audience of image • Develop an understanding of image resolution and file size • Photoshop skills and manipulating images using tools	• Understand the effect of cyber attacks • Identify different social engineering techniques • Explain types of malware • Understand GDPR rules • Learn techniques to prevent cyber attacks • Understand how Amazon warehouses Work • Program efficient Amazon Warehouse Hercules Robots	• Understanding Syntax • Data Types • Using and assigning Variables • Using Sequencing • Outputting Data • Use Selection to give different outputs • Use Iteration to make code more efficient • Effectively Trouble shoot syntax and logical errors • Create and debug basic programs.	• Understand the conventions of magazines • Explain how visual codes are used to entice an audience • Explain how written codes are used to persuade audiences • Understand how different magazines appeal to different audiences	• Understand and explain the advantages of databases • Create a simple database using a Table, Fields and Records • Searching and Sorting • Understand advantages of a relational database. • Developing simple SQL searches	•Understanding hardware of the Internet •Identify software of the www •Compare advantages and disadvantages of different types of network •Understand the ethical/ legal issues associated issues involved with the future use of technology.
	Key assessments taking place:	Create a flyer for a given purpose	CP marking and Completion of programming tasks	GUI Multiple Choice Quiz programmed	Create a magazine front cover for a specific audience	End of Unit Test	Idea.org.uk – Completion of badges

	Key vocabulary	Target audience, photo enhancement, bitmap, image resolution, selection tool, magic wand tool, pixel, bit pattern, colour splash, filters, lasso tool, red eye, cropping, brushes, transparency, layers, fills and gradients, desaturation, removing images	algorithm, cloud computing, sensor, database, quality control, machine learning, software, hardware	output, syntax, variable, character, string, input, integer, float, assign, logical operators, relational operators, indentation, iteration, list, Boolean, logic error, syntax Error	Audience, house style, brand, logo, fonts, images, colour pallets, hybrid, lifestyle, niche, mainstream, genre, cover line, lead story, masthead, strapline, strip, barcode	Flat-file database, relational database, table, column, record, field, query, parameter, criterion, criteria, primary key, linked tables	Personal Area Network (PAN), Local Area Network (LAN), Wide Area Network (WAN), Topology. Bus, Star, protocols, Ethernet, Wi-Fi, bandwidth, , Domain name, packet, HTTP, HTTPS, IP address, MAC address
	Opportunities for retrieval practice: • Completion of more advanced tasks that build on previous learning • Key vocabulary - Memrise • Quizzes – Kahoot/ Quizzizz • Completion of online questions – Seneca learning • Questioning and use of key vocabulary						