



2021-2022 Curriculum Map COMPUTER SCIENCE

Year	Enquiry question	Context	Big Ideas	Key Knowledge and Concepts	Vocabulary (See Knowledge Organiser)
7	How do my actions in the digital world affect others?	Digital citizenship (5)	Responsibility as a digital native	Learners will know: <ul style="list-style-type: none"> ✓ Logging on ✓ System structure ✓ E safety ✓ Appropriate email use 	E safety Implications Privacy Information sharing
	How has the increasing use of smart phones changed the world we live in?	My mobile phone app (7)	Technology has changed the way people think, work, live and play	Learners will know: <ul style="list-style-type: none"> ✓ Design concept – user interface, user ability, audience, consistency of looks and usage ✓ App development – Specific Software reference ✓ Block Base Coding 	Block Base Coding App Interface Software Concept
	How can I represent solutions to algorithms?	Programming simulations (5) (Flowol - lift)	There is an ever-changing digital world creating jobs that don't yet exist	Learners will know: <ul style="list-style-type: none"> ✓ Flowol is piece of software used to represent real life scenarios ✓ Flowol is used to create flow diagrams that control sensors and inputs ✓ Flow diagrams are sequences of coding blocks ✓ Decisions can be made that involve 'if...then....' Sequence (yes/no) ✓ Sequences can be iterated (looped) ✓ Inputs are used to create decision loops that can trigger an action ✓ Sensors can be used to trigger sequences 	Algorithm Representation Abstract Flow chart Sensor Trigger Iteration Decision Loop Sequence Action
	What are the key components used to design and construct a dynamic website?	Web Development (6) (HTML)	The internet brings the world together	Learners will know: <ul style="list-style-type: none"> ✓ HTML is a Text Based Programming Language ✓ HTML stands for Hyper Text Mark-up Language ✓ Behind EVERY digital medium (websites, games, apps) is code ✓ Websites are designed using HTML ✓ HTML is a markup language – specific tags are used to make webpages look a specific way ✓ Inline CSS can be applied to tags ✓ It is important to be accurate when writing code 	Tags Code Text based programming Components Dynamic



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				<ul style="list-style-type: none"> ✓ Debugging is the method of checking our code for errors ✓ Debugging is important to make sure a webpage looks the way we intend it 	
	How is abstraction and decomposition used in game design?	Programming with variables (4) (Maze game in Scratch)	Abstraction is central to effective problem solving	Learners will know: <ul style="list-style-type: none"> ✓ Variables ✓ Selection for user choice and improving player experience (If/else) 	Abstraction Decomposition Variable Selection
	How does code integrate with real world technologies?	Its only about the code (4) (Micro:Bits)	Abstraction is central to effective problem solving	Learners will know: <ul style="list-style-type: none"> ✓ Single board computers ✓ Programming with inputs and outputs ✓ Selection for independent use (If/else) and iteration (loop) 	Selection Iteration Microbits Output Input Independent Iteration loop
	What has effected the changes to technology and communication over the last century?	How computers changed the world (8) (research and movie maker)	No technology works in isolation	Learners will know: (TBC) Evolution of: <ul style="list-style-type: none"> ✓ Audience, Size, Cost, Processing capability ✓ Facebook, Twitter, TikTok, YouTube – how communication has changed over time with technology ✓ E-Sports? 	Technology Evolution Processing
8	How are movie trailers made and what affect do they have on the audience?	Cinematic sequence (4) (PowerPoint)	Technology has changed the way people think, work, live and play	Learners will know: <ul style="list-style-type: none"> ✓ Sequencing ✓ Audience ✓ Content creation – not reliance on templates ✓ Programming independence – using animation pane 	Sequence Audience Effects Motion paths Transitions



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	Why do we collect, store and use data in aspects of our everyday lives?	BMS Book (7) (Databases)	There are ethical implications of using technology	Learners will know: <ul style="list-style-type: none"> ✓ How is a database different to a spreadsheet. ✓ A database holds raw data ✓ A database contains multiple tables that can link with each other ✓ A table holds the data in distinct columns ✓ Columns are assigned a specific datatype (text, integer, float, date, etc) ✓ Columns can only hold the datatype they have been assigned ✓ Every row in a database has a unique ID ✓ Website use databases to store information about users, products, bank details, etc. 	Data Structure Data Types Relationships Keys Accessibility
	How do different image formats affect their use?	Game character design (3) (Serif Draw+)	There is an ever-changing digital world creating jobs that don't yet exist	Learners will know: <ul style="list-style-type: none"> ✓ Vector design – shapes and objects, work in proportions 	Format Vector Proportion
	What features of a computer game increase the playability?	Game Design (4) (Scratch)	Abstraction is central to effective problem solving	Learners will know: <ul style="list-style-type: none"> ✓ Importing pre-made resources from other applications ✓ New concepts to improve game playability (e.g. gravity) 	Importing Application Concept Playability
	What is the function and important of a command set in text based programming?	Python Introduction (5) (2020-2021 6 hours)	Abstraction is central to effective problem solving	Learners will know: <ul style="list-style-type: none"> ✓ Text based programming ✓ Command sets ✓ Syntax ✓ Error tracing 	Command set Idle Syntax Error trace Text based programming Abstraction
	Why is it so important to understand the binary number system?	Binary (Micro-bits) (2)	No technology works in isolation	Learners will know: <ul style="list-style-type: none"> ✓ Representing the real world in binary ✓ Binary is 0 or 1 ✓ All digital technology at its base is a 0 or 1 	Binary Machine code



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	How can we use code to create autonomy and bring a game to life?	Game programming (8) (Kodu)	There is an ever-changing digital world creating jobs that don't yet exist	Learners will know: <ul style="list-style-type: none"> ✓ 3-dimensional programming ✓ Game world design ✓ AI ✓ Object orientated programming (concepts) ✓ Autonomous 'game rules' 	3D AI Autonomous
	Fake news?	Manipulating images with a bitmap images (4) (GIMP)	There are ethical implications of using technology	Learners will know: <ul style="list-style-type: none"> ✓ Digital literacy around media ✓ Manipulation of images ✓ Superimposition ✓ Layers ✓ Filters 	Layers Filters Media Manipulation Superimposition