

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? How has the increasing use of smart phones changed the world we live in? How can I represent solutions to algorithms?	Digital citizenship (5) My mobile phone app (7) Programming simulations (5) (Flowol - lift)	Responsibility as a digital native Technology has changed the way people think, work, live and play There is an ever-changing digital world creating jobs that don't yet exist	Learners will know: ✓ Logging on ✓ System structure ✓ E safety ✓ Appropriate email use Learners will know: ✓ Design concept – user interface, user ability, audience, consistency of looks and usage ✓ App development – Specific Software reference ✓ Block Base Coding Learners will know: ✓ 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 'ifthen' Sequence (yes/no)	E safety Implications Privacy Information sharing Block Base Coding App Interface Software Concept Algorithm Representation Abstract Flow chart Sensor Trigger Iteration Decision
	What are the key components used to design and construct a dynamic website?	Web Development (6) (HTML)	The internet brings the world together	 ✓ Sequences can be iterated (looped) ✓ Inputs are used to create decision loops that can trigger an action ✓ Sensors can be used to trigger sequences Learners will know: ✓ 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 	Loop Sequence Action Tags Code Text based programming Components Dynamic





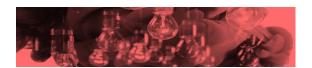
COMPUTER SCIENCE

	How is abstraction and decomposition used in game design?	Programming with variables (4) (Maze game in Scratch)	Abstraction is central to effective problem solving	 ✓ Debugging is the method of checking our code for errors ✓ Debugging is important to make sure a webpage looks the way we intend it Learners will know: ✓ 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: ✓ Single board computers ✓ Programming with inputs and outputs ✓ Selection for independent use (If/else) and iteration (loop)	Selection Iteration Microbits Output Input Independent Iteration Ioop
	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: ✓ 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: ✓ Sequencing ✓ Audience ✓ Content creation – not reliance on templates ✓ Programming independence – using animation pane	Sequence Audience Effects Motion paths Transitions





	Why do we collect,	BMS Book (7)	There are	Learners will know:	Data Structure
	store and use data	(Databases)	ethical	✓ How is a database different to a spreadsheet.	Data Types
	in aspects of our		implications of	✓ A database holds raw data	Relationships
	everyday lives?		using	✓ A database contains multiple tables that can link	Keys
			technology	with each other	Accessibility
				✓ 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.	
	How do different	Game character	There is an	Learners will know:	Format
	image formats	design (3)	ever-changing	✓ Vector design – shapes and objects, work in	Vector
	affect their use?	(Serif Draw+)	digital world	proportions	Proportion
			creating jobs		
			that don't yet		
			exist		
-	What features of a	Game Design (4)	Abstraction is	Learners will know:	Importing
	computer game	(Scratch)	central to	✓ Importing pre-made resources from other	Application
	increase the		effective	applications	Concept
	playability?		problem	✓ New concepts to improve game playability (e.g.	Playability
			solving	gravity)	
	What is the function	Python	Abstraction is	Learners will know:	Command set
	and important of a	Introduction (5)	central to	✓ Text based programming	Idle
	command set in text		effective	✓ Command sets	Syntax
	based	(2020-2021 6	problem	✓ Syntax	Error trace
	programming?	hours)	solving	✓ Error tracing	Text based programming
					Abstraction
	Why is it so	Binary (Micro-bits)	No technology	Learners will know:	Binary
	important to	(2)	works in	✓ Representing the real world in binary	Machine code
	understand the		isolation	✓ Binary is 0 or 1	
	binary number			✓ All digital technology at its base is a 0 or 1	
	system?				



2021-2022 Curriculum Map

COMPUTER SCIENCE

How can we use	Game	There is an	Learners will know:		3D
code to create	programming (8)	ever-changing	✓	3-dimensional programming	AI
autonomy and bring	(Kodu)	digital world	✓	Game world design	Autonomous
a game to life?		creating jobs	✓	Al	
		that don't yet	✓	Object orientated programming (concepts)	
		exist	✓	Autonomous 'game rules'	
Fake news?	Manipulating	There are	Learners will know:		Layers
	images with a	ethical	✓	Digital literacy around media	Filters
	bitmap images (4)	implications of	✓	Manipulation of images	Media
	(GIMP)	using	✓	Superimposition	Manipulation
		technology	✓	Layers	Superimposition
			✓	Filters	