

Curriculum Content Map														Subject: Computer Science										
Month			Term 1				Term 2				Term 3													
			September		October		November		December		January		February		March		April		May		June		July	
		Units of Work		7.1 Using Computers Safely and Responsibly.	7.2 Binary Basics		7.3 Kodu		7.4 Flowol		7.5 Apps 4 Good		7.6 Code Breakers											
Cultural Transmission		National Curriculum area – KS3		KS3.9 Responsible use of technology – social media	KS3.4 Binary to Denary Conversions.		KS3.3 Programming language (non-textual)		KS3.1 Computational Abstractions.		KS3.7 Creative Project		KS3.2 Algorithms											
		Substantive Knowledge	The What!	L1 - Students learn about the risks of social media. L2 - Students learn about the hardware of iPads. L3 (Unit 7.2 L1) - Values of different binary units (e.g. 1KB = 1000 Bytes).	L1 - Column values of binary. Binary to denary conversion. L2 - Column values of binary. Denary to binary conversion. L3 = Assessment		L1 - The importance of developing an environment for computer gaming. L2 - The role of navigation in computer gaming. L3 - What is meant by Artificial Intelligence. L4 - What is meant by a creatable.		L1 - The role of levels in adding interest to a game. L2 - How to test computer games. L3 - Assessment		L1 - E-Safety - Digital Footprint. L2 - The meaning of flow chart symbols. L3 - Zebra Crossing algorithms. L4 - Traffic Light algorithms.		L1 - Pelican crossing algorithms L2 - Assessment L3 (7.5 L1)		L1 Features of successful apps. L2 Team building theory L3 Identifying problems L4 Screening ideas L5 Understanding user needs		L1 UX Design L2 Click-through prototype		L2 App Planning L2 App Development L3 App Testing L4 Pitching ideas		L1 Understanding the need for encryption. L2 Understanding how to encrypt using the Caesar cipher. L3 Understanding how to decrypt using the Caesar cipher. L4 Understanding cryptanalysis and its role at Bletchley Park.		L1 Assessment L2 TBC L3 TBC	
		Disciplinary knowledge	The How!	L1 - Students learn how to change privacy settings to ensure their posts are secure. L2 - Students learn how to set up their iPads to use at the academy. L3 (7.2 L1) - How to convert between binary units.	L1 - Binary to denary conversion. L2 - Denary to Binary conversion. L3 - Assessment		L1 - How to create a landscape. L2 - How to code navigation. L3 - How to create an automated character. L4 - How to create a creatable character.		L5 - How to implement levels using pages. L6 - Test plans and testing. L7 - Assessment.		L1 - Explaining how to post positively. L2 - Creating flow charts using symbols. L3 - Designing a Zebra Crossing algorithm. L4 - Designing a traffic light algorithm.		L1 - Creating a pelican crossing algorithm. L2- Assessment L3 (7.5 L1)		L1 Testing skills. L2 Developing teams. L3 Students identify potential problems. L4 Students are able to filter potential ideas to develop. L5 Students can identify potential user needs.		L1 Students design features to enhance the user experience. L2 Students develop a click-through app prototype.		L3 Students develop designs for their app. L2 Students develop an app prototype. L3 Students test their app. L4 Students present their ideas.		L1 Students justify the need for encryption using scenarios. L2 Plaintext to caesar encryption. L3 Caesar to plaintext decryption L4 Students carry out cryptanalysis to 'hack' a code.		L1 Assessment L2 TBC L3 TBC	
		Sequencing (Flow)	Retrieval & Extension	Retrieval - Clever never goes (KS2).	Retrieval - Addition and subtraction using column method.		Retrieval - This builds on KS2.1, where students developed and debugged code using the Scratch programming environment.		Retrieval - this builds on algorithmic design, demonstrated practically in 7.3 programming.		Retrieval - students will have some base knowledge of successful apps based on personal usage.		Retrieval - students will have experience using encrypted messaging services (e.g. whatsapp) but will lack the understanding of how encryption works.											
		Summative Assessment		Students will complete an assessment checking understanding of E-Safety and binary-denary conversions.		Students complete an assessment focused on the development of a game within a given time period.		Students will complete an assessment focused on drawing and interpreting flow charts.		Summative assessment based on contribution to group project.		Summative assessment based on topics studied throughout the academic year.												
	Personal Empowerment		Virtue		Friendliness & Civility	Justice & Truthfulness		Courage		Generosity		Gratitude		Good Speech		Good Temper & Humour		Self-Mastery		Compassion		Good Sense		
		Link to Virtue	The opportunity to reflect, think deeply and critically about an issue.	Expectation setting for the year.		Students explore the truth about how computers think.		Students demonstrate courage as they problem solve by making a game.		Students demonstrate generosity as they consider user needs.		Students develop gratitude for the apps they use by understanding the design process.		Students will demonstrate good speech by being able to provide feedback to peers.		Students explore good temper as part of the team development cycle.		Students develop self-mastery by attempting to make the most effective app through the design and creation process.		Students offer compassionate feedback to each other,		Students are able to make good decisions as they seek to break the encrypted messages.		
Preparation for Work		Skill	Transferable skills	Listening		Leadership		Problem-Solving		Creativity		Staying Positive		Speaking		Staying Positive		Aiming High		Speaking		Teamwork		
		Link to Skill		Students listen to instructions of how to set up iPads.		Students develop their leadership skills by making decisions about the character set to use in different scenarios.		Students develop problem solving skills as they develop a 3D game.		Students demonstrate creativity as they develop their games.		Students will stay positive as they attempt algorithmic design for the first time.		Students will demonstrate good speech by being able to provide feedback to peers.		Students remain positive while developing their project, including remaining positive with group tasks.		Students aim to develop the best possible app by completing all planning and creation tasks.		Students pick of specific strengths and specific areas for development in their peer feedback.		Students work as part of a team to break encrypted codes.		
Preparation for Citizenship		SMSC & British Values	Developing opinions on current issues	BV - Individual Liberty		SMSC - Cultural		SMSC - Moral		BV - Individual Liberty and Democracy		BV - Mutual Respect		BV - Cultural										
		Link to SMSC & British Values		Students will explore how to communicate safely online (self-responsibility)		Developing an understanding of how computers work.		Understanding the impact video gaming can have on physical and mental health.		The topic of choices will be explored algorithmically. This links to both individual liberty and electing governments.		Students will design and develop an app with usability in mind.		Students will explore the impact of cryptography on the second world war.										