

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		9.1 E-Safety – Online Brands 9.2 Data Representation				9.3 Python Basics ***To be replaced with the Intermediate Python Unit in 2022-23***				9.4 Algorithms				9.5 Advanced spreadsheets				9.6 My change campaign				9.7 Computational Thinking					
National Curriculum area – KS3		KS3.9 Using technology responsibly. KS3.4, 3.6 Binary, data representation of text, sound, images.				KS3.3 Textual programming language				KS3.2 Searching and sorting algorithms, pseudocode				KS3.7 Data Analysis				KS3.7 Creative project including multiple applications and data analysis				KS3.1 Abstraction.					
Substantive Knowledge		The What!		L1 - The impact on negative posting on the Mental Health of others. L2 - Binary column values. L3 - Assessment		L1 - The role of character sets in storing text. L2 - The properties of an image and how they are stored on a computer. L3 - Assessment		L1 - The meaning of syntax errors and what causes them. The meaning of the programming construct of Sequencing. L2 - 3 - The meaning of the programming construct Selection. L4 - The meaning of the programming construct of Iteration.		L1 - The meaning of the programming construct of Iteration. L2 - Assessment		L1 - E-Safety - Students understand the potential impacts of oversharing. L2 - Students develop an understanding of how linear and binary searches work. L3 - Students develop an understanding of how the bubble sort works. L4 - Students develop an understanding of how the insertion sort works.		L1 Students gain an understanding of Flow chart symbols. L2 Assessment L3 (9.5 L1) Understand the role of different formulae (SUM, +/*)		L1 Data summary tools (Pivot Tables) L2 Data Dashboards L3 Conditional formatting L4 "What if" scenarios. L5 Assessment		L1 Climate change. L2 Powerpoint tools		L1 App Design L2 App development L3 App testing L4 Project evaluation (assessment)		L1 Decomposition L2 Abstraction L3 Algorithmic thinking L4 TBC		L1 Assessment L2 Assessment L3 TBC			
Disciplinary knowledge		The How!		L1 - Develop the skills of applying the THINK framework to post positively. L2 - Converting binary to denary. L3 - Assessment		L1 - Converting characters to ASCII numbers, and into binary. L2 - Comparing the quality and file size of images with different resolutions and colour depths. L3 - Assessment		L1 - The skill of creating print statements. L2 - The skill of implementing IF Statements. L3 - Creating a quiz programme L4 Implementing FOR Loops		L1 - Implementing WHILE loops. L2 - Assessment.		L1 - E-Safety - Students apply their understanding of oversharing to identify where oversharing has occurred. L2 - Students apply the linear and binary search algorithms. L3 - Students apply the bubble sort algorithm. L4 - Students apply the bubble sort algorithm.		L1 Students draw flow charts using the symbols. L2 Assessment L3 (9.5 L1) Create a basic spreadsheet including basic formulae.		L1 Students create pivot tables to summarise data. L2 Students create data dashboards to summarise data. L3 Students introduce conditional formatting to their spreadsheet. L4 Students use their spreadsheets to identify solutions to potential changes - e.g. more guests, reduced budget.		L1 Students use excel to calculate key figures to demonstrate the impact of climate change. L2 Students create a powerpoint to summarise their key findings regarding their climate change campaign.		L1 Students create a GUI design. L2 Students develop an app using AppShed L3 Students test their developed app. L4 Students evaluate their final created app.		L1 Students decompose problems into their sub tasks. L2 Students identify information needed and unnecessary information. L3 Students develop computational thinking skills through a series of riddles. L4 TBC		L1 Assessment L2 Assessment L3 TBC			
Sequencing (Flow)		Retrieval & Extension		Retrieval - Builds on E-Safety content from assemblies and KS2 Computing lessons.		Retrieval - use of column method and builds on prior knowledge about resolution of images.		Retrieval - builds upon skills developed in 7.3 (Kodu) and KS2 programming (Scratch)				Retrieval - builds on Python programming unit.				Retrieval - students may have experience entering data into spreadsheets.				Retrieval - this project builds together multiple skills developed across the key stage.				Retrieval - Builds on 9.3 and 9.4, which are based on algorithmic thinking.			
Summative Assessment						Students will complete a brief assessment based on tracing programming code and completing missing pieces of code.				Students will complete an assessment based around tracing and writing algorithms.				Assessment of spreadsheet.				Final project presentation assessed.				End of year assessment based on projects completed 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		<i>The opportunity to reflect, think deeply and critically about an issue.</i>		Students cover how to demonstrate friendliness and civility through posting positively.		Students focus on the truth of how computers store and understand information.		Students demonstrate courage by persevering when faced with error messages.		Students demonstrate good speech while giving effective feedback.		Students will develop a gratitude for how computer programs are designed.		Students will demonstrate good speech while providing peer feedback.		Students demonstrate good humour while developing hypothetical life scenarios.		Students demonstrate self-mastery by managing a project independently.				Students demonstrate compassion by ensuring computer systems contain no unnecessary information, so are user-friendly.		Students make good decisions about information that is useful to the computer system.			
Preparation for Work		Skill		Listening		Leadership		Problem-Solving		Creativity		Staying Positive		Speaking		Staying Positive		Aiming High				Speaking		Teamwork			
Link to Skill		<i>Transferable skills</i>		Students learn binary as a method of listening to computers.		Students demonstrate leadership while working in groups to convert an sound clip into binary.		Students problem solve by creating solutions to computational problems.		Students demonstrate good speech while giving effective feedback.		Students will stay positive as they develop algorithms.		Students will provide meaningful feedback, including sharing potential improvement thoughtfully.		Students stay positive while writing and testing Excel formulae.		Students aim high by completing an independent project to the best of their ability.				Students are able to articulate the decisions made while developing logic gates.		Students develop logic circuits as part of teams.			
Preparation for Citizenship		SMSC & British Values		SMSC - Cultural		SMSC - Social		BV - Individual Liberty				SMSC - Social		SMSC - Cultural		SMSC - Mutual Respect		SMSC - Cultural				SMSC - Cultural					
Link to SMSC & British Values		<i>Developing opinions on current issues</i>		Students will explore how to keep their accounts secure.		Students will explore how computers store a range of languages using UNICODE.		Students will develop programming skills, which will provide a wider range of employability options.				Students will explore how oversharing puts their safety at risk.		Students will explore the design skills needed to have an impact on society through developing new technology.		Students will demonstrate an understanding of how to make user friendly systems.		Students will use a range of technologies to make a campaign.				Students will explore how to solve problems.					