St George's School
Mathematics and Computing Faculty
Year 7 Curriculum Map for COMPUTING

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
THE BIG IDEAS & KNOWLEDGE *Overview of topics or key questions*	**Computing - Getting started** Students familiarise themselves with email and google classroom. They learn inbox, file and diary management. Students explore the school's computer use policy and electronics device protocol. **Collaborating Online Respectfully** Students discuss appropriate use of the school network and online safety. They learn how to respect others, spot strangers and the effects of cyberbullying.	**Programming - Kodu** Students will be introduced to the fundamentals of computer programming and games design via Kodu, a highly intuitive graphical development environment. Students will be introduced to the idea of computer programs requiring a precise series of statements and will learn how to build a world and program characters and objects as well as enhancing their games with more advanced features.	**Media - Gaining Support for a Cause** Students will develop their understanding of information technology and digital literacy skills. They will use the skills learnt across the unit to create a blog post about a real-world cause that they would like to gain support for. Learners will develop software formatting skills and explore concerns surrounding the use of other people's work, including licensing and legal issues.	**Computational thinking - FLOWOL** Students cover the principles of producing control and monitoring solutions using a flowchart-based interface. Students start by producing systems that use simple loops and basic outputs, and then move on to look at systems that have multiple inputs and outputs. They will refine their solutions using subroutines and variables.	**Media - Vector graphics** Students learn the processes involved in creating vector graphics and use knowledge and tools to create their own. Complex designs are created using computational thinking in a multi-step process that starts with elementary shapes and involves combining them into more intricate ones using operations such as union, difference, and intersection.	**Programming -Scratch** Students use a different method of coding than the previous study of Kodu. The aim of this unit is to build learners' confidence and knowledge of the key programming constructs. It offers learners the opportunity to expand on their knowledge throughout the unit. The main programming concepts covered in this unit are IF statements, loops and variables.

SKILLS & STRATEGIES *Procedural knowledge, literacy and numeracy skills*	• Use technologies responsibly, confidently and creatively • Perform search operations and understand their limitations • Recognise ethical issues surrounding the application of information technology • Critical thinking • Self reflection	• Use logical reasoning to predict the outcome of programs • Analyse problems in computational terms, and write programs to solve these problems • Design and develop modular programs that use procedures or functions	• Use technology responsibly, confidently and creatively • Evaluate and use ICT to solve problems • Collect, analyse and evaluate data to meet the needs of a known user group • Literacy: Writing in context and with purpose for an audience, (with embedded use of technology)	• Design, use and evaluate computational abstractions that model the state and behaviour of real world problems and physical systems • Understand and use the principals and concepts of abstraction, logic and algorithms. • Understand hardware and software that make up computer systems, and how they communicate.	• Use technologies responsibly confidently and creatively • Understand and use the principals and concepts of data representation	• Use logical reasoning to predict the outcome of programs • Analyse problems in computational terms, and write programs to solve these problems • Understand simple Boolean logic (such as AND, OR and NOT), and some of its uses in circuits and programming.

	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 1**	**Summer 1**	**Summer 2**
FEEDBACK *Noteworthy tasks and assessments*	Teacher observation and feedback Report - early effort	Kodu project and end of topic assessment Yr 7 parents evening	Blog and end of topic assessment Report -progress review	Flowol end of project assessment Report -Progress review	Design project and end of topic assessment	Scratch project and end of topic assessment
BREADTH *Opportunities, trips, wider reading, cultural capital*	"Compute -it: Computing for KS3" by Mark Dorling and George Rouse. https://www.internetmatters.org/	"Kodu for Kids: The Official Guide to Creating Your Own Video Games" by James Floyd Kelly http://www.kodugamelab.com/	https://www.youngminds.org.uk/support -us/join-the-movement/become -a-youngminds-blogge			"Coding For Kids Scratch: A Step By Step Visual Guide to Create Your Own Easy and Fun Computer Games" by Tommy Wilson https://scratch.mit.edu/ https://projects.raspberrypi.org/en/codeclub/scratch-module-1
KEY VOCABULARY *Important words and phrases*	Google classroom Password Passphrase Secure Acceptable use Policy	Program Navigate Object World Pathing Clones	Software Word processor Formatting Licensing Credibility Plagiarism	Algorithm Flowchart Sequencing Variable Sensor Subroutine	Union Difference Intersection Bitmap Vector Bit	Sequence Variables Algorithm Selection Operators Logic

	Liability Cyberbullying Impersonating Internet World wide web Fake news Echo Chamber Social media	Creatables Behaviours Sequence Selection	Blog	Terminator Input/output Process Decision	Byte	Iteration Count-controlled Condition-controlled Subroutines Decomposition Loops