EMMANUEL COLLEGE

CORE KNOWLEDGE

What I will know and understand by the end of Year 8.

	This year in Computing we will be learning:	This links to:	Key Vocabulary:	
1	**Securing and Presenting Information** • Personal data and why it is of value to businesses and cybercriminals • Social engineering and how you can avoid being a victim of it • Several cyber threats • Several ways to reduce cyber threats • Use of a spreadsheet to: • Format data so it is easier to read • Produce a graph so that data is easier to understand • Use formula to perform simple calculations using the data on a spreadsheet • Use functions to analyse the data on the spreadsheet and identify key information .	Work on digital literacy you will have covered at primary school. This work revisits the concepts of data and information which you met in Year 7 and are fundamental in all areas of computing. It also considers different ways to present information which is a key step in most future KS3 units when creating digital artifacts. This unit also introduces software and skills that will be used in in KS4 should you chose to study Digital Information Technology.	• Malware • Firewall • Authentication • User Permissions • Function	• Select • Modify • Edit
2	**Data Storage: Numbers and Character and Vector Graphics** • The role and operation of binary • Conversion between binary and denary numbers up to the value of 255 • How characters are represented in computer systems and the role of ASCII in this • What vector graphics are • How to create and combine vector graphics to create icons, logos, and illustrations	This unit will build on any work you may have completed on binary whilst in primary school. It links to the Networks unit from Year 7 as it is binary data that is transferred within and across computer systems. This unit is extended upon in Year 9 when you will examine how images and sound are stored in binary.	• Binary • Bit • Byte • Digit	• Number system • Base • Representation • Character
3	**Programming Basics** • Basic text-based programming using Python • Output messages to the monitor • Syntax is and how to use syntax errors to help you identify errors in your code • How to receive keyboard input from a user • What a variable is and how to assign a value or an input to a variable • Different data types: string, integer and float • • Know how to convert the data type of a variable • • Complete simple and more unusual and complex calculations • • Use appropriate print messages to request and output information • • Use arrays to store multiple values • Edit and amend arrays	This unit builds on the Year 7 Algorithms unit. It will involve you employing the concepts you met there of input, output, calculation and sequence in Python programs that you will produce. It also introduces you to other programming concepts such as variables, assignment, lists and randomisations; these skills will be extended in the Year 9 programming unit.	• Input • Output • Variable • Assign	• Execute • Sequence • Concatenate

Target Grade:		AP1:		AP2:		AP3:	