

EMMANUEL COLLEGE
THE BUSINESS AND COMPUTING DEPARTMENT
 Year 7 Computing



Year 7	Autumn, Half Term 1	Autumn, Half Term 2	Autumn, Half Term 2 and Spring Half Term 1
Unit Title	Digital Literacy	Computer Systems	Algorithm Design and Constructs
Key Question(s)?	How do we ensure the safety of our data and our physical and personal safety when using a networked computer?	What does a computer system do and what are the main components which make up a computer system?	What is an algorithm and what is the difference between it and a computer program?
Threshold Concepts	The first key element to computer safety is a secure password. The sharing of personal information online should be avoided and students must be aware of ethical considerations while online.	A computer system consists of hardware components that support the running of the computer. Computers take data in from the environment in order to process for output. A network is two or more computers or devices that are linked together. Networks can be local or wide area depending on their geographic scope.	An algorithm is a sequence of steps needed to perform a particular task. Algorithms are created by people for people. Algorithms can be given in paragraphs, bulleted lists, diagrams, flow charts, or pseudocode. Algorithms written in special languages so they can be performed by a computer are called computer programs. Both algorithms and programs employ the same constructs and concepts.
Link to Prior Learning		Students' prior use of computers is used for illustrative purpose to help them apply the terminology and information they are developing.	Students' prior use of computers is used for illustrative purpose to help them see how constructs and concepts are employed in the software they have used.
Year 7	Spring, Half Term 2	Summer Term	
Unit Title	Coding a Website with HTML	Data Everywhere: Introducing databases	
Key Question(s)?	What is HTML and how can it be used to create a webpage?	What are databases? How are databases structured? What tools do database programs offer?	
Threshold Concepts	HTML stands for Hypertext Mark-up Language which is a mark-up language used to construct webpages. HTML uses tags to create the structure of a webpage.	A database gives structure to data so that it can be processed to give us meaningful information. A database is structured in a logical and useful way. Datatypes ensure that data is valid and support the function of a database.	

	These tags tell the web browser how to display the text or graphics in the document.	
Link to Prior Learning	Students have used a number of web resources up until this point on the course, some of which can be used for illustrative purposes when introducing the various tags.	
Knowledge and Sequencing Rationale	<p>All the work students complete on computers in College, and the vast majority of their activity on computers out with College, will take place on networked computers so it is essential they can use these appropriately and safely, from the very outset of their time here at Emmanuel. In order to be an informed user of computers able to adapt them to our needs rather than adapt to their demands we need an understanding of what they are and how they operate. This unit is the first step on this journey to being an informed and enabled computer user. All computer systems are controlled by software that outlines the tasks we can complete on a computer and how this must be done. Understanding this and the concepts that underpin algorithms and programs is the first step in being able to create an algorithm and then turn it into a computer program. Writing programs is one way students can demonstrate their computer science knowledge.</p> <p>HTML shows students the need for precision when using text based language but without having to build up complex logical or computational statements as is necessary in the programming languages they will meet later in the KS3 course. It also can give instant feedback on the success of your code which is motivational in our early experiences of using languages.</p> <p>Databases are central to the operation of most organisations so an understanding of how they can help in storing, sorting and searching the vast amounts of information in circulation is important. The concepts of searching and sorting are key in computing and this unit introduces them in a concrete manner. Building searches, or filters, allows students to employ comparative and Boolean operators without having to concern themselves with as much syntax as they will when producing programs later in the KS3 course, which means they will be familiar with the operation when they do need to employ them later in the course.</p>	

