



Castercliff Primary Academy – Year 6 Computing Progression.



Yr 6		
Computing systems and networks	<p>Computing Science Learning about the history of computers and how they have evolved over time. Using past experiences to help solve new problems. Writing increasingly complex algorithms for a purpose. Debugging quickly and effectively to make a program more efficient. Remixing existing code to explore a problem. Changing a program to personalise it. Evaluating code to understand its purpose. Predicting code and adapting it to a chosen purpose.</p>	<p>Sticky Knowledge (inc. Online Safety) To understand the importance of having a secure password and what "brute force hacking" is. To know that the first computers were created at Bletchley Park to crack the Enigma code to help the war effort in World War 2. To know about some of the historical figures that contributed to technological advances in computing. To understand what techniques are required to create a presentation using appropriate software.</p>
	<p>Information Technology Using search and word processing skills to create a presentation. Understanding how search engines work.</p>	
	<p>Digital Literacy Understanding the importance of secure passwords and how to create them. Using search engines safely and effectively.</p>	
Programming	<p>Computing Science Decomposing a program into an algorithm. Writing increasingly complex algorithms for a purpose. Debugging quickly and effectively to make a program more efficient. Remixing existing code to explore a problem. Using and adapting nested loops. Programming using the language Python. Changing a program to personalise it. Evaluating code to understand its purpose.</p>	<p>Sticky Knowledge (inc. Online Safety) To know that there are text-based programming languages such as Logo and Python. To know that nested loops are loops inside of loops. To understand the use of random numbers and remix Python code.</p>
	<p>Information Technology Using logical thinking to explore software independently, iterating ideas and testing continuously</p>	



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	<p>Digital Literacy</p>	<p>Online Safety To know what steps are required to capture bullying content as evidence.</p>	
<p>Data handling 1</p>	<p>Computing Science Understanding and identifying barcodes, QR codes and RFID. Identifying devices and applications that can scan or read barcodes, QR codes and RFID.</p>		<p>Sticky Knowledge (inc. Online Safety) To know that data contained within barcodes and QR codes can be used by computers. To know that infrared waves are a way of transmitting data. To know that Radio Frequency Identification (RFID) is a more private way of transmitting data. To know that data is often encrypted so that even if it is stolen it is not useful to the thief.</p>
	<p>Information Technology Understanding how barcodes, QR codes and RFID work. Gathering and analysing data in real time. Creating formulas and sorting data within spreadsheets. Learning how 'big data' can be used to solve a problem or improve efficiency.</p>		
	<p>Digital Literacy</p>	<p>Online Safety To understand that it is important to manage personal passwords effectively.</p>	
<p>Creating media</p>	<p>Computing Science Learning about the history of computers and how they have evolved over time Using the understanding of historic computers to design a computer of the future.</p>		<p>Sticky Knowledge (inc. Online Safety) To know that radio plays are plays where the audience can only hear the action so sound effects are important. To know that sound clips can be recorded using sound recording software. To know that sound clips can be edited and trimmed</p>
	<p>Information Technology Using search and word processing skills to create a presentation. Planning, recording and editing a radio play. Creating and editing sound recordings for a specific purpose.</p>		
	<p>Digital Literacy</p>	<p>Online Safety To understand what it means to have a positive online reputation</p>	
<p>Data handling 2</p>	<p>Computing Science Understanding how corruption can happen within data during transfer (for example when downloading, installing, copying and updating files). Understanding that computer networks provide multiple services.</p>		<p>Sticky Knowledge (inc. Online Safety) To know that data can become corrupted within a network but this is less likely to happen if it is sent in 'packets'</p>
	<p>Information Technology Using search and word processing skills to create a presentation.</p>		



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	<p>Creating formulas and sorting data within spreadsheets. Learning about the Internet of Things and how it has led to 'big data' Learning how 'big data' can be used to solve a problem or improve efficiency.</p>		<p>I know that devices or that are not updated are most vulnerable to hackers. To know the difference between mobile data and WiFi.</p>
	<p>Digital Literacy</p>	<p>Online Safety To know some common online scams.</p>	
Skills showcase	<p>Computing Science Using past experiences to help solve new problems. Writing increasingly complex algorithms for a purpose. Debugging quickly and effectively to make a program more efficient. Remixing existing code to explore a problem. Changing a program to personalise it. Evaluating code to Predicting code and adapting it to a chosen purpose. understand its purpose.</p>		<p>Sticky Knowledge (inc. Online Safety) To know what designing an electronic product involves. To know which programming software/ language is best to achieve a purpose. To know the building blocks of computational thinking e.g. sequence, selection, repetition, variables and inputs and outputs</p>
	<p>Information Technology Using logical thinking to explore software independently, iterating ideas and testing continuously. Creating and editing videos, adding multiple elements: music, voiceover, sound, text and transitions. Using design software TinkerCAD to design a product. Creating a website with embedded links and multiple pages. Understanding how search engines work.</p>		
	<p>Digital Literacy To know some common online scams.</p>	<p>Online Safety Recapping on-line safety – Year 6</p>	