Year 10 Computer Science Curriculum Summary

Term	Unit / title	Threshold concepts / core knowledge / links to previous and future learning	Formative assessment / homework	Formal assessment
1	Component 1 System Architecture **Interleaved with** Component 2 Programming fundamentals	This term we focus on system architecture, students will learn how the CPU and computer systems as a whole are structured and how those individual components work together. By the end of this unit students will be expected to understand the following: ● The names of the CPU components and how these work together in the FDE cycle - along with performance characteristics of the CPU ● How computer memory/storage works and different attributes for each. This term we will be focusing on the fundamentals of programming. This will include theory and practical applications for the concepts of creating structured programs and creating programs with basic input/output systems. Our programming language of choice is Python.	**Homework:** Weekly Cornell Notes activities based upon the next week's learning. Do NOW: Craig & Dave Tailored revision questions	**Previous and current unit, cumulative assessment**
2	Component 1 Data Representation **Interleaved with** Component 2 Programming fundamentals	This term we focus on how data is stored in a computer system using binary. By the end of this unit students will be expected to understand the following: ● The different ways that we can represent binary numbers ● How to convert binary numbers with decimal and hexadecimal numbers ● How binary is used to represent text, audio and images in a computer system. This term we will be expanding on previous programming learning. This will include theory and practical applications for the concepts of selection and count controlled iteration.	**Homework:** Weekly Cornell Notes activities based upon the next week's learning. Do NOW: Craig & Dave Tailored revision questions	**Previous and current unit, cumulative assessment**
3	Component 1 Computer Networking **Interleaved with** Component 2 Programming fundamentals	This term we focus on how computers communicate with each other, both on a large scale such as the world wide web, and on a small scale such as a home network. By the end of this unit students will be expected to understand the following: ● The components required to create a computer network and how the performance of a network can be affected. ● The different ways that we can set up networks to improve performance, cost effectiveness and durability. ● The protocols that computers use to transfer different types of data. This term we will be expanding on previous programming learning.	**Homework:** Weekly Cornell Notes activities based upon the next week's learning. Do NOW: Craig & Dave Tailored revision questions	**Previous and current unit, cumulative assessment**

		This will include theory and practical applications for the concepts of condition controlled iteration and using data structures (Arrays).		
4	Component 1 Security and system software ***Interleaved with*** Component 2 Programming fundamentals	This term we focus on the different security concerns that can appear on computer systems, along with how to mitigate threats. We also look at system software and how to maintain a computer system. By the end of this unit students will be expected to understand the following: ● Common threats to computer systems and how to mitigate those threats. ● The role of the operating system in a computer ● The different forms of system software and how they are used to maintain a computer system. This term we will be expanding on previous programming learning. This will include theory and practical applications for the concepts of advanced file handling.	**Homework:** Weekly Cornell Notes activities based upon the next week's learning. Do NOW: Craig & Dave Tailored revision questions	**Previous and current unit, cumulative assessment**
5	Component 1 Impacts of digital technology. ***Interleaved with*** Component 2 Programming fundamentals	This term we focus on the impact that computer systems have on the wider world. This unit allows students to create structured arguments both for and against the use of computers in a given situation. By the end of this unit students will be expected to understand the following: ● The positive and negative legal impacts of computers on society, and legislation that directly impacts computer users. ● The positive and negative cultural impacts of computers worldwide. ● The positive and negative ethical impacts of computers worldwide. This term we will be expanding on previous programming learning. This will include applying all previous content, and learning how to incorporate SQL(structured query language) into programs.	**Homework:** Weekly Cornell Notes activities based upon the next week's learning. Do NOW: Craig & Dave Tailored revision questions	**Previous and current unit, cumulative assessment**
6			**Homework:** Weekly Cornell Notes activities based upon the next week's learning. Do NOW: Craig & Dave Tailored revision questions	**Formal Paper 1 MOCK assessment**