Year 12 Computer Science

Subject and Year Group	Autumn Year 12	Autumn 2 Year 12	Spring 1 Year 12	Spring 2 Year 12	Summer 1 Year 12	Summer 2 Year 12
Topic/Unit to be studied	**Components of a Computer and systems software** **Paper 2: programming Techniques and Data Structures**		**Web technologies, networks and Data Types and Exchanging Data** **Paper 2: Algorithms and Computational Thinking and OOP, programming paradigms**		**Software development, Legal Moral and Cultural Issues Term 1** **Practical: A level Project:**	
Core Knowledge and skills	• Processor Component and performance • Types of processor and I/O and storage devices. • Functions and types of Operating systems • The nature of applications and translators. • Programming Basis and 3 constructs • Subroutines and recursion • Use of IDE • Arrays, list, tuples,. Dictionaries, Queues and Stacks		Structure of the internet Internet communications and security threats HTML, CSS and Javascript Search engine indexing and Client server-peer to peer Primitive data types, binary and hex, ASCII and Unicode Binary arithmetic and floating point binary. Computational methods, abstraction, ahead, thinking logically. Big O notation OOP, practical and theory side, classes, encapsulation, polymorphism, methods, attributes, objects.		Systems development and Computing related legislation Ethical, moral and cultural issues Privacy and censorship A level project	

		To compare different programming paradigms and demonstrate using them. Exchanging data, SQL, transaction processing.	
Assessment for Learning	**Formative:** MCQS mid term on Components and Systems Software **Formative**: Key word terminology test **Summative**: Topic Test 1 Components and Systems Software with extended DIRT. **Summative**: Data Structures with extended DIRT **Formative**: Practical program challenges covering all skills learnt. **Summative:** Programming Test 1: Basic Programming Fundamentals	**Formative:** MCQS mid term on Web technologies AND Data Types **Formative**: Key word terminology test **Summative**: Network and Web Technologies with extended DIRT. **Summative**: Data Structures with extended DIRT **Formative**: Practical program challenges covering all skills learnt. **Summative:** Exchanging data test with extended DIRT	**Formative:** MCQS mid term on Software Development **Formative**: Key word terminology test **Summative**: Mock Exam **Formative**: Practical program challenges covering all skills learnt on OOP and Web technologies **NEA**