Year 10 Computer Science

Subject and Year Group	Autumn Year 10	Autumn 2 Year 10	Spring 1 Year 10	Spring 2 Year 10	Summer 1 Year 10	Summer 2 Year 10
Topic/Unit to be studied	**Systems architecture, Memory and storage** **Practical:** Programming fundamentals, Inputs, Outputs, Variables, Data types, Selection, Iteration and String Manipulation.		**Computational Thinking and Algorithms, writing, searching, sorting, tracing and editing.** **Practical:** Higher level programming, random module, data structures, producing robust programs and Boolean logic.		**Theory**: Data Representation **Practical**: Producing robust programs, subroutines and start of a programming project.	
Core Knowledge and skills	• To understand the components that make up digital systems, and how they communicate with one another and with other systems. • To be able analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs • To be able to think creatively, innovatively, analytically, logically and critically.		• To be able analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs • To be able to think creatively, innovatively, analytically, logically and critically. • To be able to understand and apply the fundamental principles and concepts of Computer Science, including abstraction, decomposition, logic, algorithms		• To be able to demonstrate how all types of data convert to binary before being understood by the CPU. • To be able analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs	

Assessment (How do we know if pupils have learnt what we've taught them?[8])	**Formative:** MCQS mid term on System Architecture, memory and Storage: **Formative**: Key word terminology test **Summative**: Topic Test 1 System Architecture with extended DIRT. **Summative**: Topic test 2 Memory and Storage with extended DIRT **Formative:** Multiple Choice Questions on topics covered. **Formative**: Practical program challenges covering all skills learnt. **Summative:** Programming Test 1: Basic Programming Fundamentals	**Formative:** Key word terminology tests **Formative**: Multiple Choice Questions on topics covered **Summative**: Topic Test 1 Algorithms with extended DIRT. Summative: Topic test 2: Interleaved Questions with extended DIRT **Summative:** Programming test 2: Maths, Selection and Iteration **Summative:** : Practical program challenges	**Summative:** Topic test 1: Data representation and logic **Formative:** Multiple Choice Questions on topics covered to date, **Formative:** NEA - Students to undertake a full project where they will design, create, test and rework a complex solution. **Formative:** Programming challenges **Summative:** Programming Test: 3 constructs, trace tables, data structures