Year: 10 – first cohort of J277
Subject: Computer science - Option

Summer Term		
Overarching Topic:		
What has come before and what comes later:		
	Core	Extension
The Big Questions (What questions will students be able to answer upon mastery of the topic?)	• What are the principles of computational thinking? • What is abstraction? • What is the purpose of decomposition and how can producing structure diagrams help with this process? • What do we mean by "thinking algorithmically"? • How does a linear search work? • How does a binary search work? • How does a bubble sort work? • How does a merge sort work? • How does an insertion sort work? • How can algorithms be described without ambiguity? • How do you express algorithms using the OCR reference language? • What are the different types of errors that can occur when programming? • How and why do programmers use a trace table?	• Can you find real world examples of where the searching and sorting algorithms are used? • What other searching and sorting algorithms are there? • Solve problems e.g. maths quiz using OCR reference language.
	Skill/Technique	How students will develop and demonstrate this
Key skills	Describe and explain technical terminology and techniques. Apply knowledge to exam style questions. Solve problems Identifying errors and correcting them	During assessments, classwork and homework, students will: • complete a range of activities that test the understanding and application of the topics covered.

	Refine and improve work Interpreting algorithms	• Writing pseudocode • Drawing flow diagrams