

Year: 11 - Last cohort of J276

Subject: Computer science

Spring Term		
Overarching Topic: Producing robust programs and the facilities of languages, & Logic + Data representation		
What has come before and what comes later:	The programming project is completed this term allowing for all lessons to focus on the remaining theory topics.	
	Core	Extension
The Big Questions (What questions will students be able to answer upon mastery of the topic?)	<ul style="list-style-type: none"> • What is input sanitation? • What is validation? • What is defensive design? • What are programming conventions? • What is testing and why is it important? • What are the different types of programming errors? • How do you decide on suitable test data? • What is data represented in binary form? • How is data stored in RAM, HDD & optical media • What are logic circuits • What is translation? • characteristics of high level and low level programming languages. • the differences between assemblers, compilers and interpreters. • How can mathematical operators be used? • How is data stored in computers? • What is overflow? • Why are checkdigits important? • What is compression? 	<ul style="list-style-type: none"> • If data is valid is it correct? • What is the difference between beta and final testing? • Who was Rear Admiral Grace Hopper and why is she one of the most important women in the history of computer science? • What other IDEs are there?
	Skill/Technique	How students will develop and demonstrate this
Key skills	<ul style="list-style-type: none"> • Draw logic diagrams • Complete truth tables • Convert decimal numbers to binary and vice versa 	During assessments, classwork and homework, students will:

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	<ul style="list-style-type: none">• Convert decimal numbers to hexadecimal vice versa• Add binary numbers• Perform binary shifts	<ul style="list-style-type: none">• complete a range of activities that test the understanding and application of the topics covered.
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