



Subject: **Computer Science**

Year: **11**

	What?	Why?	National Curriculum Links
Term 1-1	2.3: Producing Robust Programs Creating usable programs that will not crash and are secure.	Topic for Paper 1. Initial exposure in lesson as pupils already have contextual knowledge at this stage. Pupils should be able to describe hackers, viruses and anti-virus software to engage.	4.1: develop their capability, creativity and knowledge in computer science, digital media and information technology 4.2: develop and apply their analytic, problem-solving, design, and computational thinking skills
	Text Adventure Game Project Consolidating experience with a larger Python project	Y9 and Y10 lays foundation, spiral structure of course covers prior concepts extended this time to use subroutines and modular programming as part of an even larger project that combines all skills.	4.2: develop and apply their analytic, problem-solving, design, and computational thinking skills
Term 1-2	2.4: Boolean Logic The function of AND, OR and NOT logic gates and how they are used in a CPU.	Builds upon Y8 topic of Computing Systems and the Binary topic in Y9. Pupils must be able to recognise the gates and use binary to state their outputs. Paper 1 Topic.	4.1: develop their capability, creativity and knowledge in computer science, digital media and information technology
	Paper 2: Exam Revision Unit Consolidating experience with a larger Python project	Independent programming with a focus on application to examination style questions and written responses. Pupils focus on the ability to design new programs, refine existing algorithms, test algorithms and independently write complete programs.	4.2: develop and apply their analytic, problem-solving, design, and computational thinking skills
Term 2-1	2.5: Translators and IDEs Processors have instruction sets and that these relate to low-level instructions carried out by a computer.	Builds upon skills from Binary and Data Representation topics. Contextual knowledge gained from multiple programming topics. Pupils learn how Python is converted to binary code. Topic for Paper 2.	4.1: develop their capability, creativity and knowledge in computer science, digital media and information technology
	Paper 2: Exam Revision Unit Consolidating experience with a larger Python project	Independent programming with a focus on application to examination style questions and written responses. Pupils focus on the ability to design new programs, refine existing algorithms, test algorithms and independently write complete programs.	4.2: develop and apply their analytic, problem-solving, design, and computational thinking skills
	Paper 1: Exam Revision Unit Consolidation of all theory skills to ensure knowledge of key terms, understanding of crucial knowledge, and application to examination questions.	All of Topic 1 is a prerequisite to this, with time to find strengths and weaknesses and pupils using Smart Revise to target recap and examination technique.	4.1: develop their capability, creativity and knowledge in computer science, digital media and information technology

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Term 2-2			<p>4.2: develop and apply their analytic, problem-solving, design, and computational thinking skills</p> <p>4.3: understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to identify and report a range of concerns.</p>
	<p>Paper 2: Exam Revision Unit Consolidating experience with a larger Python project</p>	<p>Independent programming with a focus on application to examination style questions and written responses. Pupils focus on the ability to design new programs, refine existing algorithms, test algorithms and independently write complete programs.</p>	<p>4.2: develop and apply their analytic, problem-solving, design, and computational thinking skills</p>
Term 3-1	<p>Targeted Recap and Revision</p>	<p>Consolidation of all prior learning targeted to areas needed for improvement.</p>	<p>4.1: develop their capability, creativity and knowledge in computer science, digital media and information technology</p> <p>4.2: develop and apply their analytic, problem-solving, design, and computational thinking skills</p> <p>4.3: understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to identify and report a range of concerns.</p>