

Term	INTENT	IMPLEMENTATION	IMPACT
	<p>Substantive Knowledge</p> <p>This is the specific, factual content for the topic, which should be connected into a careful sequence of learning.</p>	<p>Disciplinary Knowledge (Skills)</p> <p>This is the action taken within a particular topic in order to gain substantive knowledge.</p>	<p>Assessment opportunities</p> <p>What assessments will be used to measure student progress? Evidence of how well students have learned the intended content.</p>
<p>Autumn Term Y11 1A</p>	<p>Intent</p> <p><u>Threats to computer systems and network 1.4</u> Why is this taught now? This fundamental topic follows from the work completed in Y7/8 on Online Safety and part of the GCSE syllabus.</p> <p><u>Identifying and preventing vulnerabilities</u> This topic follows on from the above topic of Threats to Computer/Networks</p>	<p>Students will be able to describe a range of computer system threats and protect from the following forms of attack or threats:</p> <ul style="list-style-type: none"> • malware • phishing • people as the 'weak point' in secure systems (social engineering) • brute force attacks • denial of service attacks • data interception and theft • the concept of SQL injection <p>Students will be able to describe ways of preventing vulnerabilities within networks:</p> <ul style="list-style-type: none"> • Physical security • Penetration testing • Anti-malware software • Firewalls • User access levels • Passwords • Encryption. 	<p>In class teacher assessment through Q & A Knowledge recall activities Homework activities and past paper questions Teacher assessment during lesson End of module test End of Year assessments</p>
<p>Autumn Term 1B</p>	<p>Intent</p> <p><u>Ethical, legal, cultural and environmental concerns 1.6</u> Why is this taught now?</p>	<ul style="list-style-type: none"> • The purpose of RAM, ROM and Virtual memory • Secondary storage • How data is stored – binary 	<p>In class teacher assessment through Q & A Knowledge recall activities</p>

	<p>By year 2 of the GCSE course, students have acquired knowledge of the use of Computer Technology, Networking, Transmission of Data and therefore will have a better understanding of the ethics of computer use.</p>	<ul style="list-style-type: none"> • Students will be able to describe the impacts of digital technology on wider society including: ethical issues, legal issues, cultural issues, environmental issues and privacy issues. • How key stakeholders are affected by technologies • Open source vs proprietary software <p>Legislation relevant to Computer Science including:</p> <ul style="list-style-type: none"> • The Data Protection Act 2018 • Computer Misuse Act 1990 • Copyright Designs and Patents Act 1988 • Software Licenses (ie open source and proprietary) 	<p>Homework activities and past paper questions</p> <p>Teacher assessment during lesson End of module test End of Year assessments</p>
<p>Spring Term 2A</p>	<p><u>Intent</u> <u>Re-visiting Programming Techniques</u> <u>Producing robust programs 2.3</u> <u>Designing, creating and refining algorithms</u> Why is this taught now?</p> <p>This topic follows on from Y1 ensuring students are comfortable with a range of algorithm tasks in preparation for the examinations.</p> <p><u>Translators and facilities of languages 2.5</u></p> <p>Pupils have a sound understanding of programming and the environment on which to code so this topic follows on with students having a clear grasp of key features of translators.</p>	<ul style="list-style-type: none"> • The use of the three basic programming constructs used to control the flow of a program: sequence, selection and iteration. • The use of variables, constants, operators, inputs, outputs and assignments • The use of a range of data types • Boolean logic including AND, OR, NOT gates • Be able to use sub programs (functions and procedures) to produce structured code / algorithms. • Identifying types of errors • Be able to use a range of testing strategies to test programs • Using a range of advanced GCSE questions ensuring students are best prepared for answering more complex questions. 	<p>In class teacher assessment through Q & A Knowledge recall activities Homework activities and past paper questions Teacher assessment during lesson End of module test End of Year assessments</p>
<p>Spring Term 2B</p>	<p><u>Intent</u> <u>Computational Thinking 2.1</u> Why is this taught now? A fundamental and large theoretical component of Module 1</p>	<ul style="list-style-type: none"> • Computational Thinking: abstraction, decomposition and algorithmic thinking. 	<p>In class teacher assessment through Q & A Knowledge recall activities Homework activities and past paper questions</p>

	<p><u>Designing, creating and refining algorithms</u> This topic is a continuation of what is covered during Y1 with the aim to ensure students have a solid grasp of algorithms.</p>	<ul style="list-style-type: none"> • Create, interpret, correct, complete, and refine algorithms using:: pseudocode and flow charts, Reference language/high level programming language. • Use Trace Tables to evaluate the outputs based on inputs 	<p>Teacher assessment during lesson End of module test End of Year assessments</p>
Summer Term 3A	Recapping previously taught content		
Summer Term 3B	Revision/Exam Practice		