FAIRFAX
SINCERITAS LABORIS

<table>
<tr><th colspan="5">YEAR 10 CURRICULUM INFORMATION - COMPUTING</th></tr>
<tr><th></th><th colspan="2">Spring 1</th><th colspan="2">Spring 2</th></tr>
<tr><td>What will students be learning?</td><td colspan="2">Topic 1.3 Computer networks, connections and protocols
Students will learn about the following:
Networks and topologies
• Types of Network
• Factors that affect the performance of networks
• The different roles of computers in a client-server and a peer-to-peer Network
• The hardware needed to connect stand-alone computers into a Local Area Network
• The Internet as a worldwide collection of computer networks
• Star and mesh network topologies

Wired and wireless networks, protocols and layers
• Mode of connection (wired and wireless)
• Encryption
• IP addressing and MAC addressing.
• Standards
• Common Protocols
• Concept of layers</td><td colspan="2">Topic 1.4 Network Security
Students will learn about the following:
Threats to computer systems and networks
• Malware
• Social engineering, e.g. phishing, people as the ‘weak point’
• Brute-force attacks
• Denial of service attacks
• Data interception and theft
• The concept of SQL injection

Identifying and preventing vulnerabilities
• Penetration testing
• Anti-malware software
• Firewalls
• User access levels
• Passwords
• Encryption
• Physical security

Topic 1.5 Systems Software
Students will learn about the following:
• The purpose and functionality of operating systems
• The purpose and functionality of utility software
• Utility system software</td></tr>
<tr><td>How will students be assessed?</td><td colspan="4">Students will be assessed on each main topic in the specification with a written test based on exam style questions.</td></tr>
<tr><td>Literacy – What keywords will be taught?</td><td>• Topology
• Client-server
• Peer-to-peer network
• Bandwidth</td><td>• Protocol
• Hosting
• Ethernet
• Bluetooth</td><td>• Malware
• Social engineering
• Firewall
• Brute-force attack</td><td>• Denial of service attack
• Drivers
• Disk-defragmentation
• User interface</td></tr>
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What employability skills are being developed?	Logical reasoning, numeracy, information use, thinking skills, self-management, written communication.
Wider Curriculum Links?	English – written analysis, writing to advise
What useful websites are there for this topic?	GCSE Computer Science - OCR - BBC Bitesize Teach-ict.com for information, quizzes, videos, exam questions for each topic (username and password for this website is provided to students by their teacher) GCSE Computer Science 9-1 J277 OCR syllabus (teach-ict.com) Videos on each topic of the course - GCSE (J277): OCR Specification Order - YouTube
What wider reading could be done for this topic?	Course information can be found on this website GCSE - Computer Science (9-1) - J277 (from 2020) - OCR
What else can students be doing independently to develop their understanding of this topic?	Go onto Seneca Learning at complete the OCR Computer Science course. https://senecalearning.com/ Complete the revision tasks on the website eRevision