

SUBJECT		YEAR	TERM
A-Level Computer Science (OCR)		13	2
UNIT			
Networking			
INTENT			
PRIOR LEARNING (TOPIC) – GCSE Networking			
Computer networks are integral to modern life. This unit aims to explore how data is transferred over networks, such as The Internet. This includes understanding some of the key protocols used in the OSI model. Beyond this, pupils will also learn about some of the accompanying technology, such as learning the fundamentals of HTML, CSS and JavaScript.			<b>Specification Points:</b> This unit covers points 1.3.1, 1.3.3 and 1.3.4
FUTURE LEARNING (TOPIC): Post-18 Network Engineering Courses			
IMPLEMENTATION		IMPACT	
<b>Throughout the unit pupils will cover:</b> <ul style="list-style-type: none"><li>• Common forms of hardware used in networking.</li><li>• The structure of the Internet.</li><li>• A range of common networking protocols.</li><li>• A range of network security threats and how to mitigate these.</li><li>• The fundamentals of HTML, JavaScript and CSS.</li><li>• How webpages are indexed and ranked.</li><li>• Client-server and peer to peer networking, including the benefits of client and server-side processing.</li><li>• Forms of compression.</li><li>• Forms of encryption and hashing.</li></ul>		<b>Assessment:</b> Pupils will sit a 40 mark in-lesson assessment at the end of the unit, the score from which will be translated into an A* to E style grading.  In addition to this, pupils will complete regular exam style questions both during lesson and as part of homework tasks.	
HOW CAN PARENTS HELP AT HOME?			
All course materials are available via Firefly. In the build-up to the assessment, parents can help by supporting their child’s revision. This can include testing them using flash cards or simply getting them to explain topics to you.			
HELPFUL READING/FURTHER DISCUSSION			
<b>READING/EXTRA-LEARNING</b> There are an enormous number of online courses and tutorials to help pupils develop their computer science skills further.  Visit the Next Steps section of the Computing department’s Firefly page for more details.	<b>CAREERS</b> The skills / knowledge learnt in this unit lead perfectly into a wide array of careers including network engineering and cyber security.	<b>WIDER SKILLS</b> Digital Literacy Resilience Critical Thinking	
VOCABULARY			
Lossy, Lossless, RLE, symmetrical, asymmetrical, hashing, protocols, TCP/IP, DNS, Layering, LAN, WAN, packet switching, firewall, proxy, switch, router, NIC, IP, MAC, client, server, HTML, CSS, PageRank, web crawler.			