GCSE Introduction To Computer Networks

Revision and Study Guide: New Specification

Subject content	Students should:	
5.1 Networks	5.1.1	understand why computers are connected in a network
	5.1.2	understand the different types of networks (LAN, WAN) and usage models (client-server, peer-to-peer)
	5.1.3	understand wired and wireless connectivity
	5.1.4	understand that network data speeds are measured in bits per second (Mbps, Gbps)
	5.1.5	understand the role of and need for network protocols (Ethernet, Wi-Fi, TCP/IP, HTTP. HTTPS, FTP, email (POP3, SMTP, IMAP))
	5.1.6	understand that data can be transmitted in packets using layered protocol stacks (TCP/IP)
	5.1.7	understand characteristics of network topologies (bus, ring, star, mesh)

5.2 Network security	5.2.1	understand the importance of network security and be able to use appropriate validation and authentication techniques (access control, physical security and firewalls)
	5.2.2	understand security issues associated with the 'cloud' and other contemporary storage
	5.2.3	understand different forms of cyberattack (based on technical weaknesses and behaviour) including social engineering (phishing, shoulder surfing), unpatched software, USB devices, digital devices and eavesdropping
	5.2.4	understand methods of identifying vulnerabilities including penetration testing, ethical hacking, commercial analysis tools and review of network and user policies
	5.2.5	understand how to protect software systems from cyber attacks, including considerations at the design stage, audit trails, securing operating systems, code reviews to remove code vulnerabilities in programming languages and bad programming practices, modular testing and effective network security provision
5.3 The internet and the world wide web	5.3.1	understand what is meant by the internet and how the internet is structured (IP addressing, routers)
	5.3.2	understand what is meant by the world wide web (WWW) and components of the WWW (web server URLs, ISP, HTTP, HTTPS, HTML)