

Learning Programme

Fundamentals of computer networks – GCSE

Topic/Content	Objectives/Skills	Homework	Assessment	Stretch & Challenge (Thirst for Learning)
Computer Network	<ul style="list-style-type: none"> • Define what a computer network is. • Discuss the benefits and risks of computer networks. • Describe the main types of computer network including: <ul style="list-style-type: none"> ○ Personal Area Network (PAN) ○ Local Area Network (LAN) ○ Wide Area Network (WAN). 		Powerpoint on the different types of network topologies Research tasks Class Q and A's	Complete research into the additional topologies not covered in the specification
Wired and Wireless Networks	<ul style="list-style-type: none"> • Understand that networks can be wired or wireless. • Discuss the benefits and risks of wireless networks as opposed to wired networks. 		Worksheets End of topic test	
Network Topologies	<ul style="list-style-type: none"> • Explain the following common network topologies: <ul style="list-style-type: none"> ○ star ○ bus 			
Network Protocols	<ul style="list-style-type: none"> • Define the term 'network protocol'. • Explain the purpose and use of common network protocols including: <ul style="list-style-type: none"> ○ Ethernet ○ Wi-Fi ○ TCP (Transmission Control Protocol) ○ UDP (User Datagram Protocol) ○ IP (Internet Protocol) ○ HTTP (Hypertext Transfer Protocol) 			

	<ul style="list-style-type: none"> ○ HTTPS (Hypertext Transfer Protocol Secure) ○ FTP (File Transfer Protocol) ○ email protocols: ○ SMTP (Simple Mail Transfer Protocol) ○ IMAP (Internet Message Access Protocol). 			
Network Security	<ul style="list-style-type: none"> ● Understand the need for, and importance of, network security. ● Explain the following methods of network security: <ul style="list-style-type: none"> ○ Authentication ○ Encryption ○ Firewall ○ MAC address filtering 	Encryption worksheet		
Network Layers	<ul style="list-style-type: none"> ● Describe the 4 layer TCP/IP model <ul style="list-style-type: none"> ○ application layer ○ transport layer ○ internet layer ○ link layer. ● Understand that the HTTP, HTTPS, SMTP, IMAP and FTP protocols operate at the application layer. ● Understand that the TCP and UDP protocols operate at the transport layer. ● Understand that the IP protocol operates at the internet layer. 	Layers worksheet		