Topic: Unit 1.3.1 Networks and Topologies

Key vocabulary:	**Core knowledge questions**	**Powerful knowledge crucial to commit to long term memory**	**Links to previous and future topics**
Network LAN (Local Area Network) WAN (Wide Area Network) Performance Characteristics Client-Server Peer-to-Peer Hardware Stand-Alone WAP (Wireless Access Point) Router Switch NIC (Network Interface Card) Transmission Media Internet DNS (Domain Name Server) Host Cloud Web Server/Client Topology: Star; Mesh	1. Why do we need to network computers together? 2. What is meant by LAN? 3. What is meant by WAN? 4. What factors affect the performance of networks? 5. What are the different roles of computers in a Client-Server network? 6. What are the different roles of computers in a Peer-to-Peer network? 7. What hardware is needed to connect stand-alone computers into a LAN? (WAP, Routers, Switches, NIC, Transmission media) 8. What is the Internet? 9. What is a DNS? 10. What does Hosting mean? 11. What is The Cloud? 12. What are Web servers and clients? 13. What is a network Topology? 14. Describe a Star topology 15. Describe a Mesh topology	• Describe characteristics of LANs and WANs including common examples of each • Understand different factors that can affect the performance of a network (number of devices, bandwidth) • Tasks performed by each piece of hardware • The concept of the Internet as a network of computer networks • A DNS's role in the conversion of a URL to an IP address • Concept of servers providing services (Web server – web pages, File server – file storage, retrieval) • Concept of clients requesting/using services from a server • The Cloud: remote service provision (storage, software, processing) • Advantages and disadvantages of the Cloud • Advantages and disadvantages of the Star and Mesh topologies • Apply understanding of networks to a given scenario	• Networks and Topologies are covered in Y7 and Y8 • Networking is fundamental to Computer Science and will be revisited throughout the course. • The next topic is 1.3.2 Wired and wireless networks, protocols and layers, which continues the network theme

We will develop these skills:

Impressive reading	**Impressive speaking**	**Impressive writing**	**Resilience**	**Numeracy via:**	**Digital Literacy via:**	**Employability via:**
Research using the Internet to find relevant and appropriate information about LAN, WAN, P2P and Client-Server networks. Interpreting scenarios to recommend appropriate networks	Discussion of research findings. Discussion in groups of networks and network characteristics	Recording research findings appropriately. Writing key terms for WAN and LAN. Writing definitions. Answering exam questions	Developing ability to consistently amend and refine work. Listen to others' opinions	Representation of different network types, with various numbers of servers and clients	Use of the Internet Use of MS Office Suite	Teamwork – working in groups Flexibility – taking on opinions of others Problem Solving – using information to assess appropriate networks for given scenarios.

SEND

- Peer Support - Some students may be more aware of Networking – use these students as Lead Students
- Differentiated Activities and Tasks, choice of tasks for certain activities, support sheets
- Questioning
- Flipped Learning resources for students to study either prior to or after lesson
- Peer Assessment / Support on labelling tasks
- Provision of visual diagrams of the structure of each network to allow learners to visualise the structure of a network as well as reading a description
- Provision of structure/templates for creation of a leaflet