Home-School Learning Collaboration – Computing

Topics in this cycle: Computer Networks	**Taught:** Summer 2	**Year Group: 9**

Key knowledge/concepts to be learnt ('Tell me about….')	**Websites/blogs/YouTube links and further reading to deepen and consolidate learning**
• **What is a Computer Network?** Identify the different devices used in a network Explain what a computer network is. Identify problems that can arise in a network. Describe the benefit of a computer network. • **What are the different types of networks?** Identify the different types of networks. Explain how the different types of networks work. Describe the benefit of each type of network. • **What are network topologies?** Identify different network topologies. Explain the benefits and drawbacks of the different network topologies. Create different network topologies using different devices. • **What is a wireless network?** Explain how a wireless network works. Describe the advantages and disadvantages of wireless networks Explain how the creation of wireless networks have changed how we access technology. • **Why is encryption used in a network?** Explain what encryption is and how it works. Explain why encryption is used in networks. Create your own way of encrypting a message. • **What is packet switching?** Identify the devices used in packet switching. Explain how packet switching works. Describe the benefits of packet switching.	**Notes/Information** Star Networks https://www.bbc.co.uk/bitesize/guides/zr3yb82/revision/1 Mesh Networks https://www.bbc.co.uk/bitesize/guides/zr3yb82/revision/2 Wireless Networks https://www.bbc.co.uk/bitesize/guides/zr3yb82/revision/3 Encryption https://www.bbc.co.uk/bitesize/guides/zr3yb82/revision/4 Packet Switching https://www.bbc.co.uk/bitesize/guides/zr3yb82/revision/7 **Videos** Computer Networks: Crash Course Computer Science #28 https://www.youtube.com/watch?v=3QhU9jd03a0

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Key Vocabulary and Definitions To Be Learn	
Network	A group of interconnected computers/devices.
Node	Any device connected to a network.
Data	Units of information. In computing there can be different data types, including integers, characters, and Boolean. Data is often acted on by instructions.
Packet switching	A method of communication across a network where a message is broken down into small pieces which are sent separately.
Switch	A device for connecting computers and other network capable devices together to form a network.
Encryption	Files that are encrypted have been altered using a secret code and are unreadable to unauthorised parties.
Encrypt	Files that are encrypted have been altered using a secret code and are unreadable to unauthorised parties.
Topology	The structure, or arrangement, of a network.
Mesh topology	A network where each node is directly connected to all other nodes.
Star topology	A network where each node is connected to a central switch.
Transmissions	The sending of data from point A to point B.
Wi-Fi	A method of connecting to the internet wirelessly using radio waves.
Wireless Access Point (WAP)	A device that connects computers to a network using Wi-Fi.

What Will The Assessment Look Like?

Extended writing – The benefits of wireless networks and an explanation of how packet switching works.

End of Unit test: 35 minutes/25 marks

- Short answer questions
- Extended writing
- 3 marks for SPAG

Family Learning Opportunities

With your family watch the 101 Computing video which will inform you of the different components needed to set up a network. You will then try to create a specific network design based on 3 different customer requirements.

Use the online network design tool to create these designs using the relevant hardware and cables.
https://www.101computing.net/network-design-tasks/

Devise a quiz on the different elements of a network and test your family.