

# Home-School Learning Collaboration – Computing



<b>Topics in this cycle:</b> Computer Networks	<b>Taught:</b> Summer 1	<b>Year Group: 9</b>
<b>Key knowledge/concepts to be learnt ('Tell me about....')</b>		<b>Websites/blogs/YouTube links and further reading to deepen and consolidate learning</b>
<ul style="list-style-type: none"> <li>• <b>What is a Computer Network?</b>            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.</li>   <li>• <b>What are the different types of networks?</b>            Identify the different types of networks.            Explain how the different types of networks work.            Describe the benefit of each type of network.</li>   <li>• <b>What are network topologies?</b>            Identify different network topologies.            Explain the benefits and drawbacks of the different network topologies.            Create different network topologies using different devices.</li>   <li>• <b>What is a wireless network?</b>            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.</li>   <li>• <b>Why is encryption used in a network?</b>            Explain what encryption is and how it works.            Explain why encryption is used in networks.            Create your own way of encrypting a message.</li>   <li>• <b>What is packet switching?</b>            Identify the devices used in packet switching.            Explain how packet switching works.            Describe the benefits of packet switching.</li> </ul>		<b>Notes/Information</b>  Star Networks <a href="https://www.bbc.co.uk/bitesize/guides/zr3yb82/revision/1">https://www.bbc.co.uk/bitesize/guides/zr3yb82/revision/1</a>  Mesh Networks <a href="https://www.bbc.co.uk/bitesize/guides/zr3yb82/revision/2">https://www.bbc.co.uk/bitesize/guides/zr3yb82/revision/2</a>  Wireless Networks <a href="https://www.bbc.co.uk/bitesize/guides/zr3yb82/revision/3">https://www.bbc.co.uk/bitesize/guides/zr3yb82/revision/3</a>  Encryption <a href="https://www.bbc.co.uk/bitesize/guides/zr3yb82/revision/4">https://www.bbc.co.uk/bitesize/guides/zr3yb82/revision/4</a>  Packet Switching <a href="https://www.bbc.co.uk/bitesize/guides/zr3yb82/revision/7">https://www.bbc.co.uk/bitesize/guides/zr3yb82/revision/7</a>  <b>Videos</b> Computer Networks: Crash Course Computer Science #28 <a href="https://www.youtube.com/watch?v=3QhU9jd03a0">https://www.youtube.com/watch?v=3QhU9jd03a0</a>

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Key Vocabulary and Definitions To Be Learn		What Will The Assessment Look Like?
<b>Network</b>	A group of interconnected computers/devices.	<p><b>Extended writing</b> – The benefits of wireless networks and an explanation of how packet switching works.</p> <p><b>End of Unit test:</b> 35 minutes/25 marks</p> <ul style="list-style-type: none"> <li>• Short answer questions</li> <li>• Extended writing</li> <li>• 3 marks for SPAG</li> </ul>
<b>Node</b>	Any device connected to a network.	
<b>Data</b>	Units of information. In computing there can be different data types, including integers, characters, and Boolean. Data is often acted on by instructions.	
<b>Packet switching</b>	A method of communication across a network where a message is broken down into small pieces which are sent separately.	
<b>Switch</b>	A device for connecting computers and other network capable devices together to form a network.	
<b>Encryption</b>	Files that are encrypted have been altered using a secret code and are unreadable to unauthorised parties.	
<b>Encrypt</b>	Files that are encrypted have been altered using a secret code and are unreadable to unauthorised parties.	<p><b>Family Learning Opportunities</b></p> <p>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.</p> <p>Use the online network design tool to create these designs using the relevant hardware and cables.  <a href="https://www.101computing.net/network-design-tasks/">https://www.101computing.net/network-design-tasks/</a></p> <p>Devise a quiz on the different elements of a network and test your family.</p>
<b>Topology</b>	The structure, or arrangement, of a network.	
<b>Mesh topology</b>	A network where each node is directly connected to all other nodes.	
<b>Star topology</b>	A network where each node is connected to a central switch.	
<b>Transmissions</b>	The sending of data from point A to point B.	
<b>Wi-Fi</b>	A method of connecting to the internet wirelessly using radio waves.	
<b>Wireless Access Point (WAP)</b>	A device that connects computers to a network using Wi-Fi.	