

# Kit's Network Architecture Challenge

*Learning objective: To understand how devices are connected within a network and the function of hardware such as servers, switches, and routers.*

Kit the Fox has designed a school network to help our BookFlik friends share files and messages. Use the word bank to label the components of the network diagram and explain how data travels between them. Match the correct term to each description to complete the network map.

*Word bank: Server · Switch · Router · Data Packet · Wireless Access Point · Client*

**1. 1. Identify the central device that directs data packets from the school network to the wider internet. Explain why this device is essential for external communication. (2 marks)**

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**2. 2. Compare and contrast a 'Switch' and a 'Wireless Access Point'. How does each device allow a 'Client' to connect to the network differently? (2 marks)**

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**3. 3. The 'Server' stores all of Pip's book reviews. Justify why it is more efficient to store these on a central server rather than on every individual computer. (2 marks)**

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**4. 4. What might happen if the 'Switch' in the network failed? Explain the impact this would have on the other devices. (2 marks)**

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**5. 5. Describe the journey of a 'Data Packet' when Nova sends a photo of a star constellation to Leo. Does it travel directly to him or through other hardware? (2 marks)**

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**6. 6. Design a plan for a home network. If you had £200 to spend on hardware to connect three laptops and a printer, which devices would you prioritise and why? (2 marks)**

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**Draw:** Draw a diagram showing how Nova's laptop, the school server, and a printer are connected to a central switch. Use arrows to show the direction of data flowing between them.



*Extension challenge: Research the difference between a Local Area Network (LAN) and a Wide Area Network (WAN). Write a short paragraph explaining which one our school network uses and provide evidence for your choice.*