

Kit's Connection Challenge: Understanding Networks

Learning objective: To understand the basic principles of computer networks, how devices communicate, and the importance of shared resources.

Read each question carefully and use your knowledge of networks to provide detailed answers. Think like Kit the fox—look for the clever solution!

N/A

Word bank: network · server · router · data packet · shared · wireless · internet · connection

1. Kit wants to set up a small network in the library so that three computers can share one printer. Explain why connecting devices in a network is more efficient than having a separate printer for every single computer. (2 marks)

2. When you send a message from one computer to another on a network, the information is broken down into small pieces called 'data packets'. What might happen if these packets arrived in the wrong order or were lost during transmission? (2 marks)

3. Compare and contrast a wired network (using cables) and a wireless network. Justify your answer by explaining one advantage of each type. (3 marks)

4. A 'router' is a vital piece of equipment in a home or school network. Describe the role of a router in directing data traffic between different devices. (2 marks)

5. If the main server in a school network suddenly stops working, explain why the computers might still be able to turn on, but why they might struggle to access shared files. (2 marks)

6. Kit is designing a network for a new art studio. If the studio expands and adds 50 more computers, how might this impact the speed of the network? Explain your reasoning. (2 marks)

Draw: Draw a diagram of a simple network. Include at least three devices (like laptops or tablets), a printer, and a central router. Use arrows to show the path data takes when a document is sent to the printer.



Extension challenge: Imagine a world without any computer networks. Write a short paragraph explaining how this would change the way you complete your school projects and communicate with your friends. Could you still share information? How would you do it?