

Kit's Computing Challenge: Unravelling Networks

Learning objective: To explain what a computer network is, how devices connect, and the importance of sharing information securely.

Use this writing frame to create an explanatory report about computer networks. Use your own words to describe how devices communicate with each other.

A computer network is a collection of devices linked together to share resources and exchange information.

Word bank: interconnected · transmission · server · router · data packets · infrastructure · wireless · local area network (LAN) · securely · efficiently · consequently

1. The Components of a Network: Describe the role of a router and explain why it is essential for connecting multiple devices... (2 marks)

2. Wired vs. Wireless: Compare and contrast the benefits of using Ethernet cables versus Wi-Fi connections. Justify which method might be more stable in a busy school... (3 marks)

3. Data Transmission: Explain how data is broken down into smaller packets to travel across a network and what happens if a packet goes missing... (3 marks)

4. Network Security: Why is it important to have secure passwords and firewalls when devices are connected to the internet? Explain your reasoning... (2 marks)

5. Hypothetical Scenario: What might happen if a global network suddenly lost its connection to its servers? Predict the impact on daily life... (3 marks)

6. Evaluation: How does the ability to network computers influence the way we collaborate on projects today compared to the past? (2 marks)

Extension challenge: Imagine you are designing a network for a new library. Draw a diagram showing how you would connect the computers, printers, and the main server. Below your diagram, write a justification for why you chose this specific layout.