

Kit's Clever Computing: Mapping the Network

Learning objective: To understand the basic components of a computer network and how devices connect to share information.

Kit the Fox is helping set up a new school network. Follow the instructions to draw the connections and label the parts of the network so the devices can communicate effectively.

Draw: Create a clear, top-down map of a school building. Use geometric shapes for the devices: draw the Server as a large square, the Router as a circle, and the Clients as smaller rectangles. Use solid lines for wired Ethernet connections and dashed, wavy lines for Wi-Fi signals. Ensure the style is neat and technical, like a blueprint.



Label words: Server · Router · Wireless Access Point · Client · Ethernet Cable · Wi-Fi Signal

Steps:

1. Step 1: Draw a large building in the center of your page. Place three 'Client' devices (such as a laptop, a tablet, and a desktop computer) in different rooms inside the building.
2. Step 2: Draw a central 'Router' and label it. Connect the 'Server' to the 'Router' using a straight line to represent an 'Ethernet Cable'. Why is a physical cable often more reliable than a wireless connection?
3. Step 3: Draw a 'Wireless Access Point' on the ceiling of the building. Use wavy lines to show a 'Wi-Fi Signal' reaching the tablet and the laptop.

4. Step 4: Explain why the 'Server' is a vital part of this network. What might happen if the Server was switched off?
5. Step 5: Compare and contrast the role of a Router with the role of a Wireless Access Point. How do they work together to help data travel?
6. Step 6: Justify your answer: If the school added 50 more devices to this network, would the current setup be sufficient? Explain your reasoning.