Mapping the Digital Web: Network Design

Learning objective: I can identify and explain the function of hardware components within a computer network.

About 15 minutes. Grown-up tip: Encourage your child to think of the switch like a post office that sorts mail to the right house.

Kit the fox is helping the local library set up a new network. A network connects devices so they can share data. To create a network, you need a central 'Switch' or 'Router' to manage the traffic. Lines represent cables or wireless signals. Example: Draw a box labelled 'Server' and connect it to a 'Switch' with a straight line to show a data path.

Draw: Draw a floor plan of a room. Include 4 desks for 'Workstations', one desk for a 'Server', and a central 'Switch' on a wall. Use symbols (like circles for computers and squares for hardware) and draw thin lines representing the cables connecting them to the switch.

Label words: Server · Switch · Router · Workstation · Wireless Access Point · Client · Data Cable

Steps:

1. Draw a diagram in the box below showing three workstations connected to a central switch. Use straight lines to represent ethernet cables.
2. Label your diagram to show which component connects the network to the internet.

3. Explain why a 'Switch' is necessary in a network rather than just connecting all computers to each other directly.

4. If the 'Server' stops working, what happens to the files that the workstations need to access?

5. What is the difference between a wired connection and a wireless access point in terms of how a device connects to the switch?



I did it! Name: _____ Date: _____

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