

Guided Notes for the Code.org video: Packets, Routing and Reliability **KEY**

Watch [Packets, Routing and Reliability](#). Answer the following questions as you watch the video.

1. Why can't the internet be made of many direct, dedicated connections?

It would be impossible to scale up to millions of users especially since there is no guarantee that every wire and computer is working at every moment.

2. Do packets of information travel along the same, fixed path? Explain your answer.

No. Packets take the cheapest route. Routing is dynamic.

3. Special computers on the internet, called     routers    , act like traffic managers to keep packets moving through networks smoothly.

4. What might cause a packet's route to change?

Congestion, damaged route

5. What protocol ensures that every router keeps track of multiple paths for sending packets and it chooses the cheapest available path for each piece of data based on the destination IP address for the packet?     IP (Internet Protocol)

6. What makes a network fault tolerant?

Redundancy of paths; dynamic routing

7. How does TCP ensure that you get your entire message?

Using a standard protocol, the TCP process checks to see if all messages have been received and then it will send a confirmation message. It will then reassemble them. If all packets are not received, the TCP process sends a message that the delivery failed and the sender resends the packet.

8. The more     routers     we add, the more     reliable     the internet becomes.

9. What is the internet made up of?

Hundreds of thousands of networks and billions of computers and devices connected physically.

10. Open protocols help ensure that all devices on the internet do what three things?

Communicate, collaborate, connect