HackerBusters

Club Advisor Background Information

For Activities and Resources Based on the Peter Packet Game

Everything you need to know in less than 300 words...
Club members will be transformed into packets, or tiny pieces of information that travel through the Internet. Packets make it possible to send e-mail, download files, and browse Websites.

Let's consider how an e-mail message and photo travel from one computer to another. First, the text and photo are broken into tiny pieces, or bytes, called packets. Each packet contains part of the data, an ID number, the address of the originating computer, the address of the destination computer, and a checksum.

The packets travel through the network to a server, which is hopefully protected from viruses by antivirus software and adds encryption shields to packets to avoid snooping hackers.

Routers on the network send the packets to the Internet, which is a huge global network of connected servers and computers. If a router assigns packets a quality-of-service (QoS) designation, they are considered priority items and move more quickly to their destination.

As the packets move along, routers help them find the best path to their destination. Packets may travel through wires or wireless paths. If they use wireless routes, they receive a security key, or a code, that allows them to move through wireless receivers. When the packets reach the end computer, they are reassembled into the e-mail and picture. The checksum information ensures that all packets are received.

This system usually works well, but sometimes e-mail cannot be sent, a Website will not load, or a download will not work. These problems may be caused by viruses; hackers; congestion on the Internet; interference from sources such as cordless telephones, microwaves, and radios between wireless points of access; faulty wires; network repairs; or routers that are not working properly.

That's about it. Networking 101.