The Internet

A Reading A–Z Level X Leveled Book
Word Count: 1,404
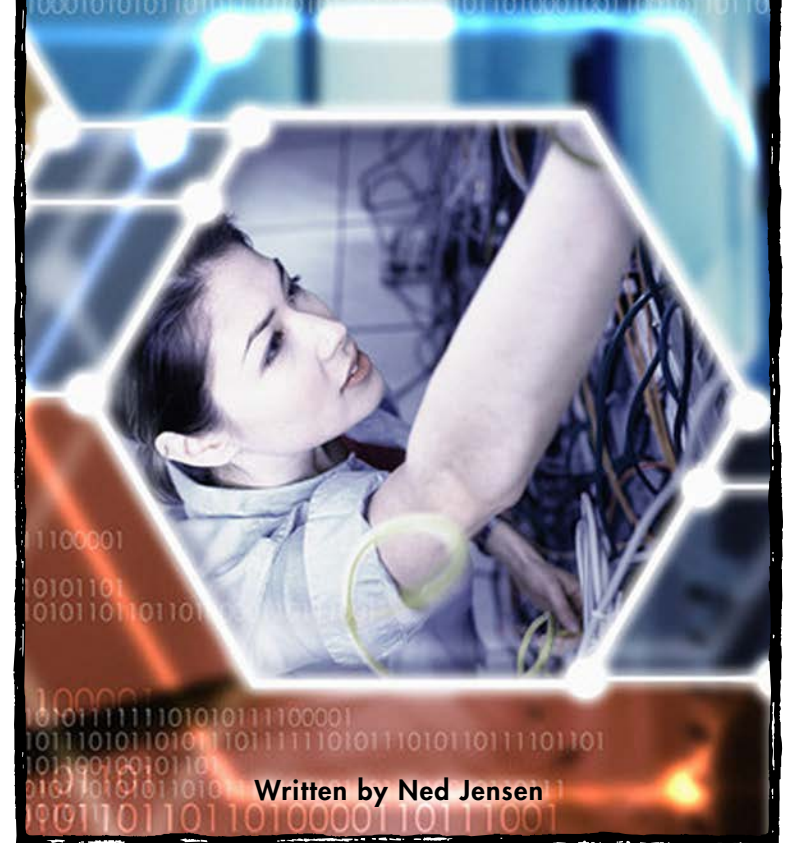
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Written by Ned Jensen

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www.readinga-z.com

Correlation

LEVEL X	
Fountas & Pinnell	S
Reading Recovery	40
DRA	40

Internet *(n.)*	a vast network of interconnected computers (p. 4)
IP address *(n.)*	the number of a server or client computer (p. 14)
ISP *(n.)*	stands for Internet Service Provider; companies that sell access to the Internet (p. 10)
modem *(n.)*	a device used to connect a computer to the Internet (p. 10)
multimedia *(adj.)*	relating to programs or files for pictures, video, and sound (p. 8)
search engine *(n.)*	a search tool used to locate information on the Internet (p. 18)
server *(n.)*	a computer that provides access to information or services on the Internet (p. 12)
URL *(n.)*	stands for Uniform Resource Locator; the entire address used to access a website on the Internet (p. 11)
WiFi *(n.)*	wireless network for sending information over the Internet (p. 6)

Glossary

bandwidth *(n.)* the maximum amount of information that can move on an Internet cable (p. 7)

bit *(n.)* the smallest amount of information that can be stored on a computer or sent over the Internet (p. 9)

broadband *(adj.)* high-speed (p. 10)

browser *(n.)* special Internet software for finding and looking at webpages (p. 11)

byte *(n.)* a unit of information that can be stored on a computer and is equal to one letter of the alphabet or one number (p. 9)

clients *(n.)* computers used by the general public to access all that the Internet provides (p. 13)

domain names *(n.)* the easily remembered identifications of websites that include extensions such as .com or .edu (p. 14)

fiber-optic *(adj.)* a type of cable made from thin strands of glass or plastic that can be used to carry signals (p. 6)

Table of Contents

Introduction

Can you imagine life without the **Internet**? Well, it might be hard to believe, but just a few decades ago, the Internet did not exist. The Internet has changed our lives and continues to change our lives, perhaps more than any other invention since the computer. The Internet has changed the way we communicate, gather information, shop, pay bills, and learn.

Explore More

On the Internet

1 In the address window of your browser, type *www.google.com.*

2 Type terms such as *Internet*, *Tim Berners-Lee*, or *ARPAnet* in the search window and click on "Google Search."

3 Read the colored links. Click on one that looks interesting. When you want to explore other links, click on the "back" button on your browser menu to return to the Google search page.

4 Try other searches, using words from something you are studying in school, words from your favorite activities, or even names of your favorite animals or book characters.

Students use websites on the Internet to practice reading and other skills.

Police officers use the Internet through computers in their cars to find out information about suspects.

Conclusion

The Internet has allowed computers all over the world to connect to one worldwide network for sharing information. It has changed the way we do business, communicate, and buy goods and services. The Internet will be even more influential as more people around the world connect to it from homes, schools, businesses, and through wireless connections. The future of the Internet is anyone's guess, but one thing is certain—how the Internet is used today will change tomorrow.

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What Is the Internet?

Simply said, the Internet is awesome. It is a system or network that connects millions of computers around the world. Any computer connected to the Internet can exchange packets of information with any other computer connected to the Internet. These connections allow information to pass from computer to computer at the speed of light. Information packets sent from one computer can reach another computer on the other side of the world in just a few seconds.

A series of ones and zeros make up the information packets computers send and receive.

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How Is Information Sent?

Information packets sent over the Internet includes words, pictures, sound, and video. All of this information flows through wire or **fiber-optic** cable. Wire cable is made from copper or other metals, while fiber-optic cable is made from bundles of very thin strands of glass or plastic. Internet information can also be sent wirelessly on radio waves. This is known as **WiFi**. A receiver within a WiFi network collects the information packets from radio waves. The receiver takes that collected information and sends it through the wire or fiber-optic cable that connects the receiver to the Internet.
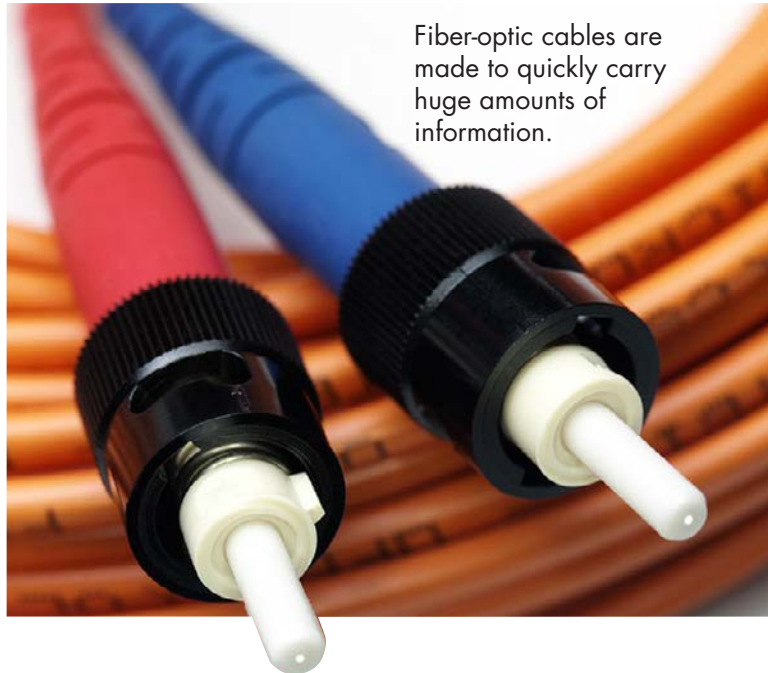
Fiber-optic cables are made to quickly carry huge amounts of information.

People also shop and pay bills on the Internet. You can view pictures of products you may want to buy. You can listen to music, purchase it, and then listen to the music on your computer. You can also purchase airline and entertainment tickets on the Internet. Some shopping websites let you bid on the products you want to purchase just as you would at an auction. Internet shopping has become so popular that in 2004, Americans spent an estimated 65 billion to 70 billion dollars through the Internet.

This girl listens through headphones to music on the Internet.

The fact that some monkeys eat fruit is information you could find on the Internet.

Answers to nearly any question can be found by searching the Internet. But with so much information available, how can you possibly find what you want?

The answer is to use a **search engine**—a tool that allows you to find the information you are looking for on the Internet. A search engine searches the contents of millions of webpages at the same time. All you have to do is go to a search engine website and type in one or more search terms, or keywords.

The amount of information moving over the Internet at any given time depends on what is called **bandwidth**. The bandwidth of a cable allows information to move like cars on a highway. The more lanes a highway has, the more cars that can travel on it. Greater bandwidth means that more information can travel through a cable. However, as with heavy traffic on a highway, when the amount of information traveling through a cable increases, the speed at which it travels decreases.

copper wire
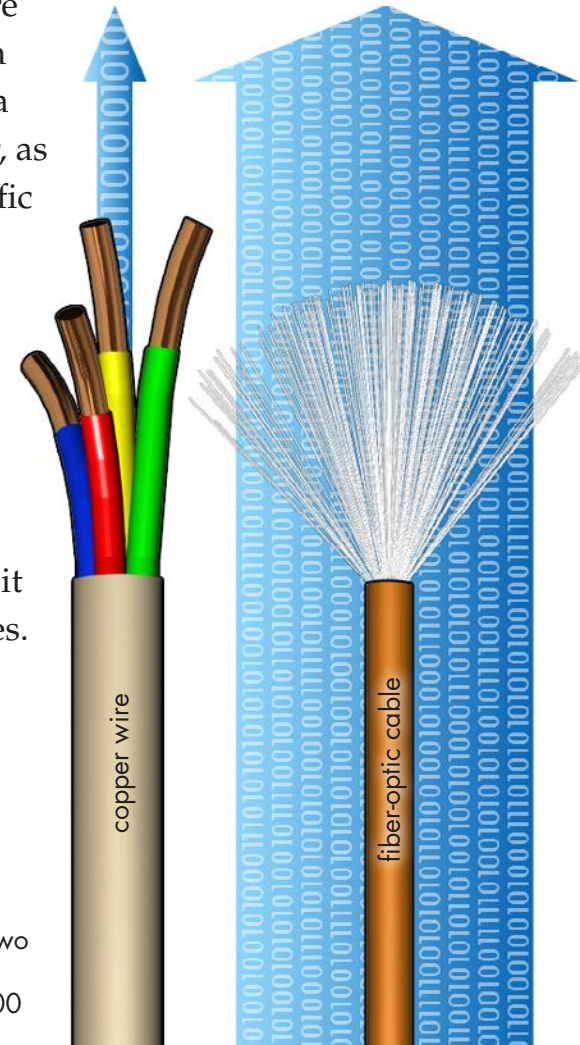
fiber-optic cable

It takes two copper wires to carry one phone call. It takes two strands of fiber-optic cable to carry 24,000 phone calls.

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Fiber-optic cable has greater bandwidth than wire cable and, therefore, can carry thousands of times more information than wire cables. As we become more dependent on the Internet for information, bandwidth becomes more important. Sound, pictures, and video all require more bandwidth than text. Therefore, information containing **multimedia** content needs greater bandwidth to flow through the Internet quickly.

How Is the Internet Used?

One of the most frequent uses of the Internet is communication. Email replaces traditional postal letters, or "snail mail," because it travels so much faster. A single message can be instantly sent to as many recipients as you want. If someone wants to respond to your email, they only have to click the reply button and then type out a message to send immediately back to you. You can also add attachments, such as photos, to your email.

Tim Berners-Lee

In the 1990s, a physicist named Tim Berners-Lee changed the Internet forever. Before Berners-Lee, a network would "talk" to its many computers, but could not share information with other networks. Each network spoke its own language and could not understand other networks, like people from different countries who spoke different languages. Berners-Lee solved this problem by writing a common language that let computers in various networks "talk" to each other.

Comparative File Sizes

Text 2k

Picture 500k

Music 2,500k

Video 8,500k

Size in kilobytes
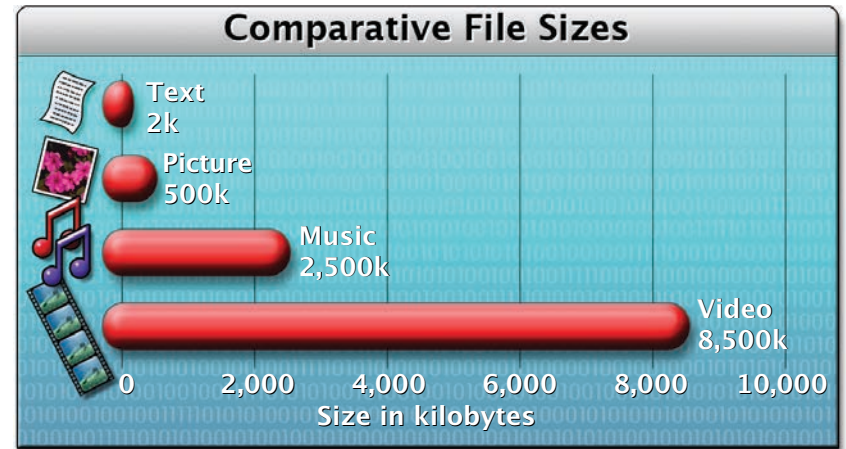
Bandwidth is a measure of the number of units of information prepared and sent by computers that can pass through the Internet per second. The smallest unit of information is called a **bit**. When eight bits are combined they become a **byte**.

A single letter of text, such as the letter *A*, is one byte. Compare a typical typed sheet of paper, which has 2,000 bytes, with a short novel, which has one million bytes! Megabytes (1,000 kilobytes) and gigabytes (1,000 megabytes) are common measurements of computer storage capacity.

Math Minute

If a kilobyte is 1,024 bytes, how many bytes are in a 1-megabyte photograph?

How Does the Internet Work?

The backbone of the Internet is a permanently connected network of powerful computers to which other computers can connect. Individual computers connect to the Internet through a device called a **modem**, which decodes and codes digital information as it passes to and from your computer. You can access the Internet by using a modem and logging in using a username and password. Internet access is usually purchased from an Internet Service Provider (**ISP**) for a monthly fee. *Broadband* users pay higher fees for high-speed Internet access using DSL or cable modems.
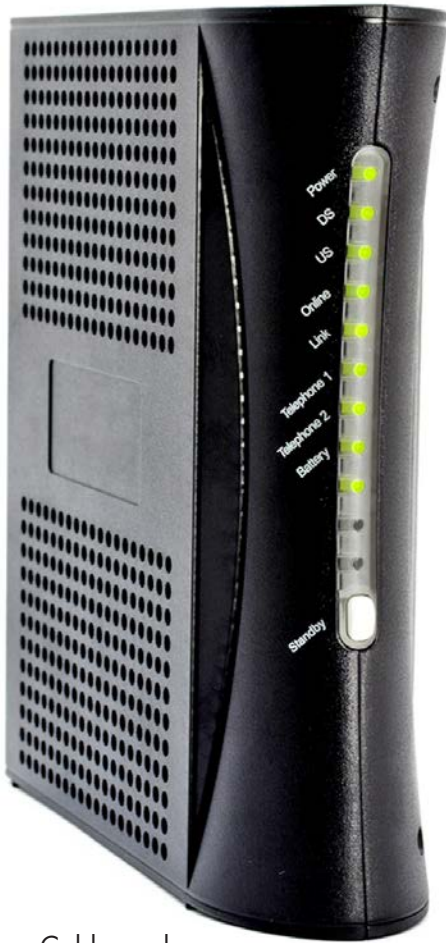

Cable modem

University students take advantage of free Internet access for communication and research.

How Did the Internet Begin?

Most people think it all began back in the 1960s. The United States Department of Defense wanted to establish a dependable network of communication in case of a disaster or war. The network that was created, called ARPAnet (Advanced Research Project Agency network), linked four computers to each other. By the 1980s, hundreds of computers were linked together. Soon, universities began building their own networks of computers so they could more easily share information. One of the largest networks for universities, called NSFnet (National Science Foundation network), came to be called the Internet.

Every computer connected to the Internet, whether a server or a client, has an **IP address** (IP stands for Internet Protocol). Each IP address is a unique series of numbers. The numbers are arranged in four sets with each set separated by a dot. For example, 209.104.1.69 is the IP address for the computer that stores information for the website known as Raz-Kids, where students can read books their teacher has assigned. But since most people have a hard time remembering a series of numbers, computers are given **domain names**. The domain name for the Raz-Kids computer is raz-kids.com.
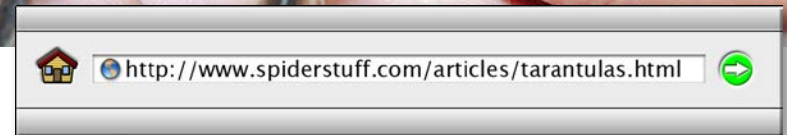
The Internet allows people to share information, including pictures.

Once you have access, you are free to surf the Internet. You can send information to, and receive information from, anyone else that is hooked up to the Internet. Let's say a friend tells you about a website where you can get information about tarantulas. You type in the website **URL** he gave you, including the file name, press "enter" (or "return") on your keyboard or click the go button of your **browser**, and within seconds an article on tarantulas appears on your screen. So, how did this happen, you might ask.

Here is a simple explanation of what happened. First, a browser, special Internet software for finding and looking at webpages, connected your computer to a **server** somewhere on the Internet. Next, the browser requested the website information. Then, the server retrieved the requested information and sent it back to your computer. Once the browser found the page you wanted, it made it possible for you to view the page on your computer.

Welcome

http://www.spiderstuff.com/articles/tarantulas.html

Featured spider of the Month: Tarantulas

1 webpage

2 video file

3 cell phone used to watch Internet video file

An information technology expert makes sure servers stay connected to the Internet.

Let's take a closer look. All the computers that make up the Internet can be put into two groups: servers and **clients**. Servers are computers that provide a service, which is to give access to information. There are different kinds of servers. For example, to send or receive email, you will connect to an email server. To request information from a website, you will connect to a website server.

The other computers on the Internet are computers like yours, called clients. Client computers don't provide a service, but they do send and receive information.