



Defending Against Danger

Staying Safe and Secure on the Web

Summary

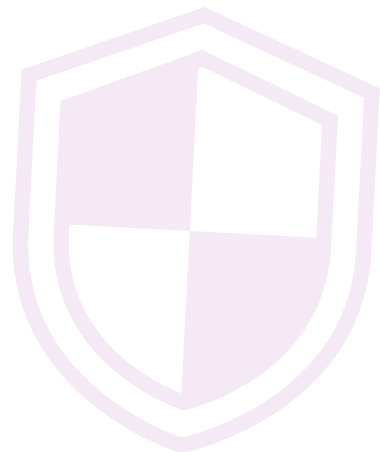
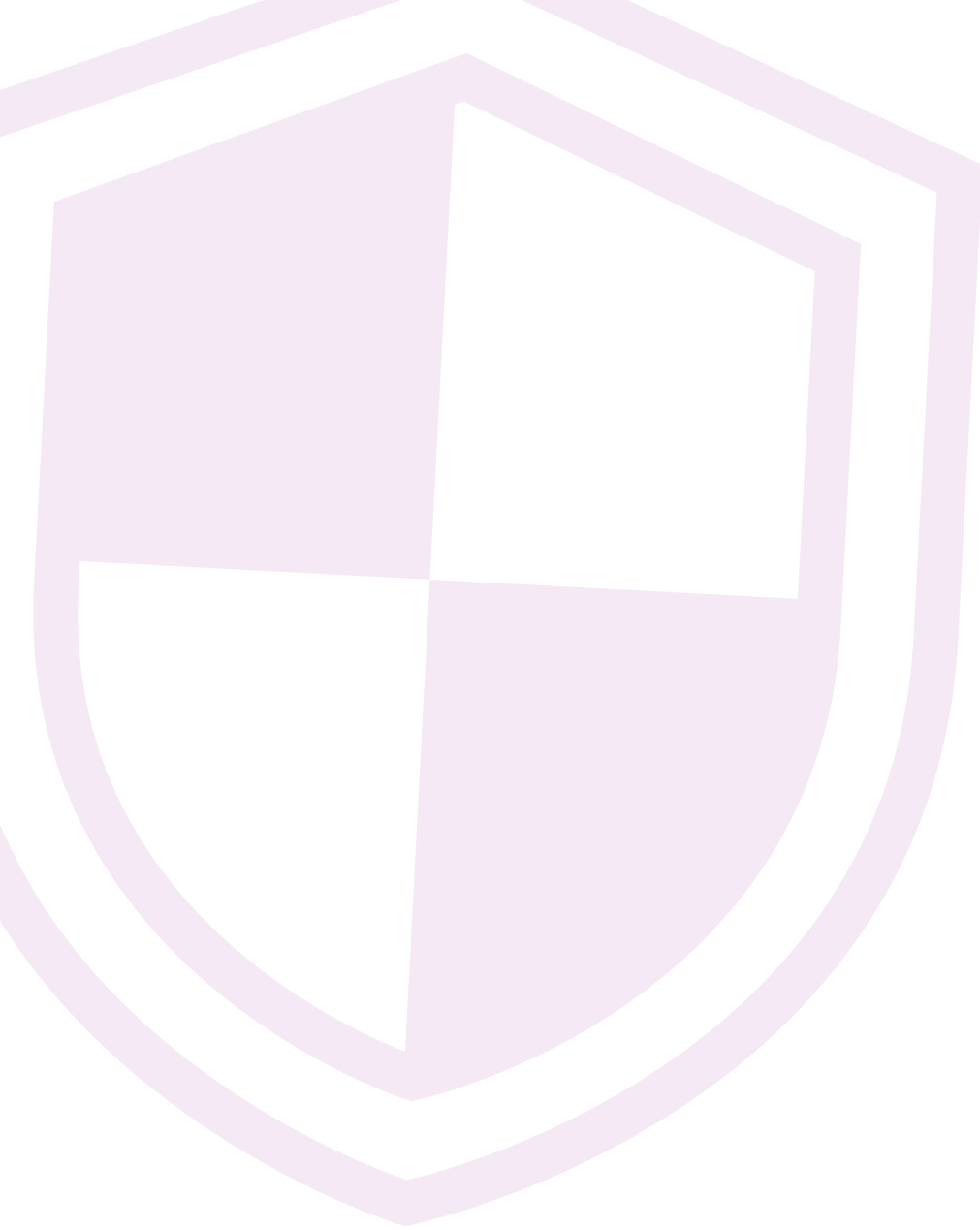
Surfing the Web can be as exciting as riding waves at the beach, but there are also some dangers for which you must watch out.

In this unit, you'll explore how to surf the Web safely, protect yourself from cyberbullying, and avoid identity theft. You'll also learn about computer hacking, viruses, and the importance of securing private data in order to avoid potentially dangerous situations.



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Chapter 2

Let's Go Surfing: Internet Safety



Overview

Welcome to cyberspace! You've come to the right place to learn the basics of the Internet and the World Wide Web. In this chapter, you will examine the two main types of websites, weigh the benefits and drawbacks of surfing the Web, and learn how to safely conduct effective searches online.



Key Terms

- Internet
- World Wide Web
- Website
- Web pages
- Online
- Informational website
- Corporate website
- Inappropriate material
- Search engine
- Keywords
- Results page
- Efficient search
- Boolean search
- Search strategies
- Research questions
- Extract
- Online rules

Fact!



Did You Know?

More than 2.7 billion people worldwide use the Internet. That's more than 40% of the world's population!

Source: ITC Telecommunication Development Bureau

Informational websites let us gather information about specific topics.



Table 2.1

Informational Websites	
Benefits	Drawbacks
<p>Resources: You can find information on just about anything by searching the Web. Nearly unlimited online resources help us learn about new concepts and explore areas that interest us.</p>	<p>Overwhelming Variety: Because there are so many informational websites, it can be overwhelming to sift through all of the data.</p>
<p>Knowledge: You can learn many new and interesting things by reading informational websites. The ease of Web surfing allows us to acquire knowledge quickly and easily.</p>	<p>Questionable Credibility: Just because information is posted on a website doesn't mean that it is true. Be sure to check the credibility of each website you visit to ensure you can trust the information.</p>

Welcome to the World Wide Web

The **Internet** is a global communication network that allows computers to exchange and share information worldwide. The **World Wide Web** is a subset of the Internet. It's a collection of pages connected by hypertext links. (Many people, however, use the terms *Internet* and *World Wide Web* interchangeably, which is acceptable usage.) A **website** is a group of **web pages** that focus on a particular subject. When you are **online**, it means that you are on the Internet and are likely visiting websites.

While traveling in the real world can cost big bucks, we can travel anywhere online for free. From learning about foreign countries to getting advice on how to master a video game, we can use the Internet to discover a vast array of information about many places, people, and things.

Types of Websites

While there are many different types of websites on the Internet, the two most common are **informational** and **corporate**, or e-commerce.

Informational

People visit an **informational website** to gather information and learn about something. One example is the website of a city, which provides information about city government, departments, public services, businesses, and events. Another example is a website devoted entirely to tree frogs, where we could learn what they eat, how they spend their time, and other interesting facts about them. Websites such as



weather.com (The Weather Channel), CNN.com, and britannica.com (Encyclopedia Britannica) are other examples. We use informational websites to explore and expand our knowledge, whether we are doing research for a school or work assignment or are simply seeking to satisfy our own thirst for learning.

Corporate and E-Commerce

A **corporate website** can be informational, but its primary purpose is to convince people to buy something, such as an idea, a product, or a subscription. For example, Procter & Gamble, maker of goods such as shampoo and pet food, has a website that describes its company and its products. On Nike’s website, you can find descriptions of its shoes and clothes, and you can buy them there as well. Online stores or auction sites such as eBay and Amazon are e-commerce websites on which you can buy and sell products. While you can buy a pair of shoes straight from Nike’s website, you can also buy Nike shoes from e-commerce stores such as Amazon. We often use corporate and e-commerce websites if we want to make a specific purchase or learn about a product. Just be careful, though. Sometimes corporate websites are sneakily disguised as informational websites!

Read **Tables 2.1** and **2.2** for more information on informational and corporate/e-commerce websites.

The primary purpose of a corporate website is to convince people to buy something.



Table 2.2

Corporate and E-Commerce Websites	
Benefits	Drawbacks
<p>Useful Information: Corporate websites can help us learn about new products or services.</p>	<p>Misleading Information: Sometimes corporate websites disguise themselves as informational websites in the hopes of convincing users that third parties (scientists, journalists, or other experts) are providing the information. They want to fool you into thinking that “experts” like their products.</p>
<p>Instant Access: We can access many different products and services through corporate and e-commerce websites. If something isn’t available in stores, we may be able to purchase it online.</p>	<p>Too-Easy Purchasing Power: E-commerce websites make it very easy to make a purchase—sometimes almost too easy! In just one click, an online purchase can be made. Be sure to read websites carefully so you don’t accidentally buy something you don’t want!</p>

Fact!



Did You Know?

One of the great things about devices such as tablets is that they weigh much less than standard textbooks. In one study, middle school students wearing backpacks that weighed more than 20% of their body weight reported back pain.

Source: WebMD

Benefits of Surfing the Web

Going online can be fun, because you can visit websites devoted to your favorite things, including books, music, and movies. Going online can also be beneficial, because on the Web you can find information that will expand your knowledge base and help you with your studies. **Three benefits of surfing the Web are described below:**

1 Easy Data Comparison

On the Web, we can research, gather, and compile a broad range of data from many different sites. Data-gathering online can be quicker and more efficient than gathering data from traditional print sources, although you must be careful to use only credible sites.

2 Convenient Media Consumption

Prior to the invention of the Web, we had to go to a movie theater or buy or rent a DVD to watch a movie. Today, we can simply “stream” movies to just about any digital device. The same goes for music and books; we used to have to go to stores and buy CDs and books, but now we can download music and novels.

3 Communication

Chatting with friends and family is easy when you use Web tools such as social networking sites and chat rooms.

Going online can be fun, because you can visit websites devoted to your favorite things.





Drawbacks of Surfing the Web

Searching the Web is fun, but it's not without its dangers. **Four drawbacks of surfing the Web are shown below:**

1 Exposure to Inappropriate Material

Sometimes, when you are surfing the Web, you are accidentally exposed to **inappropriate material**, such as violent content or websites that make you feel uncomfortable.

2 Exposure to Cyberbullying

As you will learn in Chapter 3, cyberbullying can be a real problem for teenagers. People who are cyberbullied can suffer many ill effects, such as depression, health problems, and falling grades in school.

3 Attack by Hackers or Cybercriminals

Computer hackers are people who electronically break into others' computers. Some hackers are merely out to cause mischief, not to engage in illegal activities. But some hackers attempt to steal your personal information. These hackers, especially hackers who commit financial crimes, are called cybercriminals.

4 Attack by Viruses

When you surf the Web, you may accidentally pick up computer viruses, or malicious software, that can damage your computer.

Although surfing the Web can be enjoyable, we all must be aware of its potential dangers.



Fact!



Did You Know?

Nearly 6 billion Web searches are completed every day on Google.com.

Source: Statistic Brain

The Three Key Factors of Surfing the Web

When you surf the Web, you should always keep in mind (1) *search*, (2) *strategy*, and (3) *safety*. **Smart strategies will help you conduct efficient searches, and a focus on safety will help protect you from online threats:**

1 Search

One tool we can use to find something on the Internet is called a **search engine**, a tool that helps us wade through the billions of websites to locate only those that are specific to our search. Three of the most popular search engines are Google, Yahoo!, and Bing.

We type **keywords**, which are words that are most relevant to our topic, into a search engine. The search engine gives us a **results page** that displays all of the websites it has located that are connected to our keywords.

It's important to use accurate keywords in order to create an **efficient search**, or a search that finds the most relevant and credible information specific to our subject. If we use vague or unrelated keywords, our search will take longer, and it will become more difficult to find the information we need.

Here is a results page from a Google search on the anatomy of the frog. The search engine provides the most relevant results based on the **keywords** you enter. It suggests additional keyword searches and also presents initial results for an image search. ▶

The screenshot shows a Google search for "anatomy of the frog". The search bar contains the text "anatomy of the frog" and a magnifying glass icon. Below the search bar, a dropdown menu suggests related searches: "anatomy of the frog", "anatomy of the frog heart", "anatomy of the frog pdf", and "anatomy of the frog pre lab questions". Below the search bar, it says "About 4,660,000 results (0.24 seconds)".

Underneath, there is an "Images for anatomy of the frog" section with a "Report images" link. It displays several anatomical diagrams of a frog, including external and internal views, and a dissection diagram. Below the images is a link for "More images for anatomy of the frog".

The main search results list includes:

- Frog Anatomy - The Biology Corner**
www.biologycorner.com/bio2/notes-frog.html
In the lab, you will be spending a few days, dissecting the frog. Periodically, your instructor may pause to show you illustrations, diagrams or videos of ...
Frog Dissection - External Anatomy - Frog Brain and Bones
- e-Tutor - Anatomy Of A Frog**
www.e-tutor.com/et3/lessons/view/52133/print
Frogs are amphibians, living both on land and in water. Their anatomy is very unique. Their bodies are similar to humans in that they have skin, bones, muscles , ...
- Frog Anatomy - Internal and External - Biology - About.com**
biology.about.com • ... • Online Dissections • About.com
by Regina Bailey - in 189 Google+ circles
Find information on frog dissection and internal and external frog anatomy.
- Anatomy of the Frog - LookD**
www.lookd.com/frogs/anatomy.html
The body structure, or anatomy, of the frog is very similar to the anatomy of man. Both

When looking for information on the Web, it may help to conduct a **Boolean search**, in which you use logical operators to connect keywords. The most common Boolean operators are **and**, **or**, and **not**.

And Using **and** between keywords narrows a search by asking search engines to retrieve only websites or documents that contain both of the keywords.

For example, the search **dogs and cats** will find websites that reference both dogs and cats.

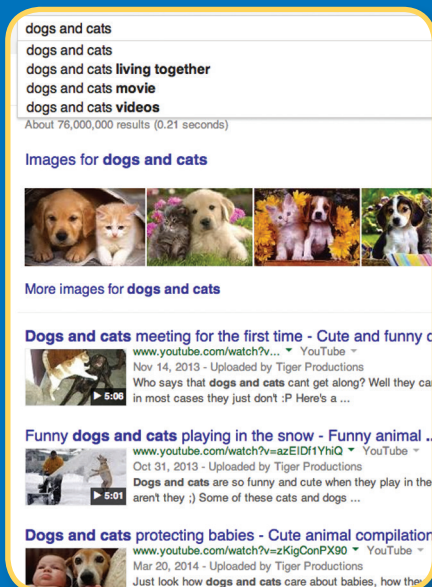
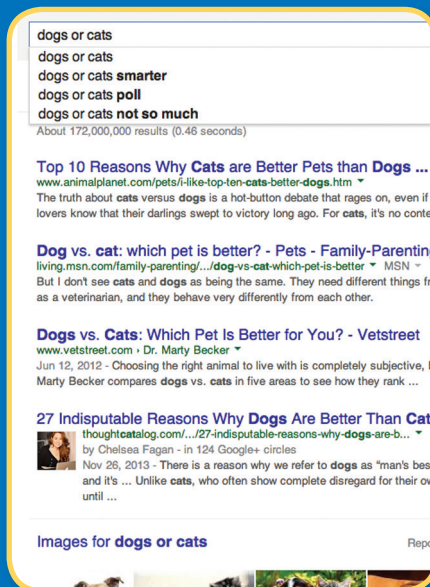
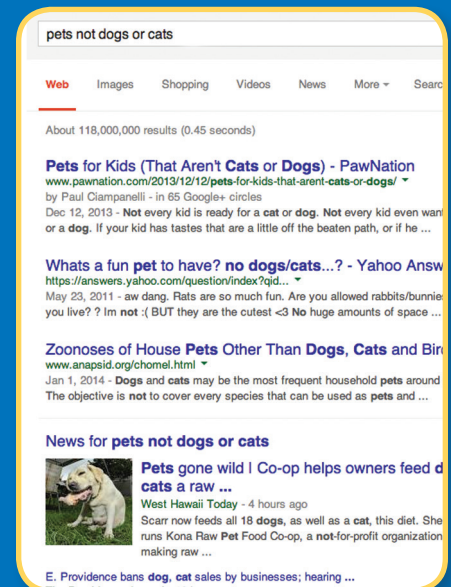
Or Using **or** between keywords broadens a search by finding information relevant to both keywords, though not necessarily in the same website or document.

For example, using the keywords **dogs or cats** will expand the search by retrieving information on both dogs and cats.

Not Using **not** narrows a search by excluding certain information.

For example, the search **pets not dogs or cats** will retrieve information about pets, while excluding topics related to dogs or cats.

Boolean searches help you find what you're looking for faster.

And**Or****Not**

▲ Compare the sample Boolean searches shown above. Note the different results that are returned for **And**, **Or**, and **Not**.



▲
When you are researching something on the Web, begin with research questions.

2 Strategy

While searching the Web is as easy as typing keywords into a search engine, there are **search strategies** we can use to ensure we get the best results.

Research Questions

When you are researching something on the Web, begin with **research questions**. These can include questions you have about a subject and what you want to learn. For example, if you are researching astronomy for a school report, you might begin with the research question “How many constellations exist?”

Extract Keywords

Extract, or take out, keywords from your research questions as a starting point for what to type into a search engine. If we use the research question “How many constellations exist?” we might extract the word *constellations* to type into a search engine.

Use Synonyms

If research question keywords do not give you the results you’re looking for, type in synonyms or other alternative word choices and search again. For example, we can search the keywords *stars* and *Big Dipper* in addition to *constellations*. We can also combine keywords for different results.

Record Results

Keep track of what keywords you use. That way, you won’t repeat the same search, and you can continue to expand search strategies and keyword choices. As you learn more about a subject, you’ll be able to add more keywords to your list to search.

KEYWORDS

Keep track of your keywords while you search.

3 Safety

With so many websites to explore, there's no doubt that surfing the Web can be a fun adventure. But just as we stay safe in the real world by following certain rules, we stay safe in the cyberworld by following certain rules and by using common sense. To stay safe while surfing, follow the Dos and Don'ts listed in **Figure 2.1**.

Figure 2.1

Safety Dos and Don'ts on the Web

Dos

- **Do** talk with a parent or guardian first about what **online rules** you will follow, such as which websites you may visit and what time limits you have for surfing the Web.
- **Do** tell a trusted adult if you stumble across any information that makes you uncomfortable.
- **Do** tell a trusted adult if you witness any instances of cyberbullying or mean behavior online. For more information on cyberbullying, read Chapter 3.
- **Do** realize that people you meet online may not be who they say they are.

Don'ts

- **Don't** give out private information such as your home address or your telephone number, even if you're giving it to someone you know.
- **Don't** share passwords with anyone, including your email provider. Account providers such as email or social networking services will never ask for your private passwords.
- **Don't** meet up with someone on- or offline without a parent's or guardian's permission. Remember that "stranger danger" applies online just as it does in real life. Never share private information about yourself with strangers, and never meet up with someone you've met only online.
- **Don't** visit risky and inappropriate websites. These may include sites that are labeled specifically for adults or that may contain information that makes you feel uncomfortable.



Safety first!

Many teens and their parents or guardians find that a good way to ensure online safety is for the teens to take a “Safe Surfing Pledge.” A sample pledge is shown in **Figure 2.2**.

Figure 2.2

Safe Surfing Pledge

- I will not share personal information.
- I will not share passwords.
- I will report inappropriate content.
- I will report instances of cyberbullying.
- I will follow the rules outlined by my parent or guardian for Internet use.
- I will not meet someone in real life whom I’ve met previously only online without my parent’s or guardian’s permission.



To be safe on the Web, take the
“Safe Surfing Pledge.”



Chapter 2 Assessment



What Do You Think?

Write a two-paragraph reflection on the most effective Web search strategies. Your paragraphs should answer the following questions:

- 1 Why is it important to develop research questions before you search the Web?
- 2 How do you use keywords to find information on the Web?
- 3 In your opinion, are Boolean searches always helpful?
- 4 What would you do if your search with the keyword *sports* turned up too many search results?
- 5 What would you do if your search with a certain keyword turned up no useful search results?

Challenge: What Would You Do?

In this chapter, you learned about how to be safe while surfing the Web. Now, apply what you have learned. Read the scenario below and write one paragraph explaining what you would do if you were faced with a similar situation.

Scenario:

Kristi and Mia are having a sleepover, and Mia thinks it would be fun to join a chat room. Kristi has talked with her parents about the online rules she will follow when she's surfing the Web at home, and one of the rules is to never enter a chat room without an adult's permission. It's late, and Mia's parents are both asleep, so they can't ask for permission. Mia says it's okay and that her parents let her chat online all the time, but Kristi is worried about breaking the rules.

What should Kristi do?



Extension Activities

Activity 1 Multiple Choice

Read the questions below. Use what you have learned in this chapter to help you choose the correct answer.

- 1 What would you do if someone asked for your password to your email account?
 - A. Ask why he or she wants your password.
 - B. Give out your password.
 - C. Refuse to share your password.
- 2 When is it okay to meet someone in person whom you've met only online?
 - A. It's safe, but only if you meet in a public place.
 - B. It's okay as long as you've known the person for at least six months.
 - C. It's never okay, unless a parent or guardian gives you permission.
- 3 What would you do if you received a hurtful message online?
 - A. Tell a parent or trusted adult.
 - B. Ignore it.
 - C. Send a rude message back.
- 4 What is the first step in a strategic Web search?
 - A. Type the first word that comes to mind.
 - B. Develop research questions.
 - C. Record results.
- 5 What are the three key factors of surfing the Web?
 - A. Safety, security, and strategy
 - B. Security, strategy, and search
 - C. Search, strategy, and safety



Activity 2 Key Terms

For each term, write a definition in your own words.

World Wide Web	Informational website	Corporate website
Keywords	Search engine	

Activity 3 Internet Safety

Read each of the situations below and determine if they are examples of using the Internet safely. Write one paragraph of three complete sentences for each situation. Use what you have learned in the chapter to justify your answers.

Situation 1

Jodi is researching insects for a school science project. During her keyword search, she discovers a website for a company that sells ant farms. She wants to learn more about how ant farms work. In order to get more information, Jodi fills out an online form. The form requires her to share her name, email address, home address, and phone number.

Is this safe Internet use? Why or why not?

Situation 2

Jacob gets a message from his email provider stating that his account isn't working properly and needs to be fixed. The message asks for his password, and Jacob provides it, because he's worried he may not be able to access his email if his account isn't fixed.

Is this safe Internet use? Why or why not?

Situation 3

Matt meets a new friend in a gaming chat room online. The friend lives in a nearby town. The friend wants to get together in person so they can exchange ideas on how to beat their favorite game, but Matt isn't sure if he should go.

Is this safe Internet use? Why or why not?



Hands-On

Research Your Favorite Animal

Surfing the Web can be fun, and it can lead you to many interesting websites. To put your research skills to the test, you'll be investigating your favorite animal by following a few simple steps.

Step 1 Select an Animal

Think about what your favorite animal is and why you like this animal. If you don't have a favorite, think about pets you or your friends may have or an animal that you are interested in learning more about. Pick one animal for the purposes of this assignment.

Step 2 Research Questions

Brainstorm a list of 5 to 10 questions you have about your animal. You'll use your questions as a starting point for searching the Web. What do you want to learn about the animal? Here are some questions to get you started:

- What kind of food does the animal eat?
- Where does the animal live?
- How does the animal spend its time?
- What does the animal look like?

Step 3 Extract Keywords

Using your research questions, extract keywords that you can type into a search engine. Write down each of the words you will use and any other words that you can think of that might help you in your search.

Step 4 Search Keywords

Visit one of the following search engines and type the keywords into the search engine one at a time. Review the results pages and click on websites that will tell you more about your animal.

- www.kidrex.org
- www.kidsclick.org



Step 5 Record Results

After you visit each website, record your results. Record everything you learn about your animal, paying close attention to information that might answer your research questions.

Step 6 Final Assessment

Assess the information you gathered. For each of your research questions, write a one-paragraph answer that includes three to five complete sentences.