

## Thinking Critically

### CHAPTER LEARNING OUTCOMES

*In this chapter, you will learn the answers to these questions:*

- What is critical thinking?
- How can I distinguish between facts and opinions?
- How can I make inferences and draw logical conclusions?
- What is the difference between deductive and inductive reasoning?
- How can I evaluate an author's argument?
- What are propaganda devices?

#### ✓ Timely Words

"A conclusion is the place where you got tired of thinking." (Attributed to Arthur McBride Bloch)

"It is better to debate a question without settling it than to settle a question without debating it." (Joseph Joubert)

"Use soft words and hard arguments." (English proverb)

"I think, therefore I am." (René Descartes)

"Many people would sooner die than think. In fact, they do." (Bertrand Russell)

"What we think, we become." (Buddha)

"Be sure you go to the author to get at his meaning, not to find yours." (John Ruskin)

**SKILLS****What Is Critical Thinking, and Why Is It Important?****Critical Thinking Skills**

- Why Readers Fail to Think Critically
- Distinguishing Facts from Opinions and Determining Whether Opinions Are Well-Supported
- Making Inferences and Drawing Logical Conclusions
- Distinguishing between Deductive and Inductive Reasoning
- Evaluating an Author’s Argument
- Identifying Propaganda Devices

**A Word about Standardized Reading Tests: Critical Thinking****CHECKPOINT: THINKING CRITICALLY****CREATING YOUR SUMMARY****Developing Chapter Review Cards****TEST YOUR UNDERSTANDING: THINKING CRITICALLY, PART 1****TEST YOUR UNDERSTANDING: THINKING CRITICALLY, PART 2****READINGS****Selection 9.1 “Poverty in America and Improving Social Welfare through Public Education”**

from *The American Democracy*  
by Thomas E. Patterson (Government)

**Selection 9.2 “Your Financial Wellness”**

from *Connect Core Concepts in Health*  
by Paul Insel and Walton Roth (Health)

**Selection 9.3 “Our Ecological Footprint: Do We Consume Too Much?”**

from *Environmental Science: A Study of Interrelationships*  
by Eldon Enger and Bradley Smith (Environmental Science)

## SKILLS

*People see only what they are prepared to see.*

Ralph Waldo Emerson

*It is not enough to have a good mind.*

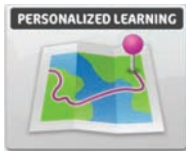
*The main thing is to use it well.*

René Descartes

*There is one thing about which I am certain, and that is that there is very little about which one can be certain.*

M. Somerset Maugham

### WHAT IS CRITICAL THINKING, AND WHY IS IT IMPORTANT?



**Critical thinking** means thinking in an organized way about material that you have read in order to evaluate it accurately. Before you can think critically about the material, though, you must understand the main idea, supporting details, and pattern of organization. Only after you understand this basic information are you ready to think critically about it.

You may be wondering why it is necessary to think critically rather than just accept the author's information and leave it at that. After all, thinking critically about what you have read can, quite frankly, be hard work. However, the consequences of *not* thinking critically and of *not* evaluating ideas for yourself can be costly. Failing to think critically can result, for example, in your choosing a college major that does not really suit you, accepting a job that you are ill-suited for, signing a contract or credit agreement you do not fully understand, making the wrong decision as a member of a jury, being misled or defrauded by an individual or organization, supporting a cause that later turns out to be an embarrassment, and even marrying the wrong person! Most professors would agree that learning to think critically, along with learning how to learn, is one of the most important skills a college student can acquire.

Not only will thinking critically help you when you read, it will also help you when you write. This is because reading and writing are both forms of the thinking process. To improve the quality of your reading and writing, you must improve the quality of your *thinking*. Although thinking critically may seem difficult at times, it simply means applying certain thinking skills in a systematic way. Thinking critically when you read means consistently asking certain additional questions and applying logic when you read.

#### critical thinking

Thinking in an organized way about material you have read in order to evaluate it accurately.

Critical thinking is also referred to as *critical reasoning* or *critical analysis*.

### CRITICAL THINKING SKILLS

In order to think critically when you read, you must apply these three skills in a systematic, careful manner:

- Distinguishing facts from opinions, and determining how well supported the opinions are
- Making inferences and drawing logical conclusions
- Evaluating an author's argument accurately

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Thinking critically involves thinking in an organized way about material you have read in order to evaluate it accurately.



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In this chapter, each of these important skills will be explained and demonstrated. They can also be applied to things you hear, but our focus in this chapter is on applying them to material that you read.

### Why Readers Fail to Think Critically

If critical thinking simply means applying thinking skills in a systematic, careful manner, why do people not do it more often when they read? Actually, besides mental laziness, there are at least five reasons:

- 1. We let “experts” and “authorities” do our thinking for us.** Rather than think through a complex issue, we accept the information or judgment of someone or something we perceive as an authority. This might be a parent or other relative; a college advisor; a doctor or therapist; or a minister, priest, or rabbi. We may accept the beliefs or positions of a political entity (such as a political party or the government itself) or the beliefs and rules of a religious or social institution without thinking critically about them. (This is not to say that all experts and authorities are wrong, only that you should think through what they have written or said, rather than accept their words without question.) For example, you might be tempted to accept the advice of a favorite uncle who is a highly successful real estate agent that you should also become a real estate agent—even though you may prefer to work by yourself at a computer rather than sell to the public.
- 2. We want things to be different from the way they are.** In other words, we deny reality and refuse to see what is really there. Denial is based on emotion, not reason. Perhaps a person you have just begun dating is attractive, yet has a serious drinking problem. But because you like dating someone who is so attractive, you ignore obvious facts and deny to yourself that the person is alcoholic. Or, for example, you are not making any systematic effort to save money each month, yet you are hoping that you will somehow have enough money by the time you graduate to pay for a new car and a trip to Europe.

3. **We mentally put things into one of two mutually exclusive categories.** This means that we mistakenly view things as “either-or.” Another way of putting this is “seeing everything as either black or white.” Needless to say, very few things in life are simple enough to fall into one of only two categories. Thinking of everything in terms of good or bad, beautiful or ugly, fair or unfair, generous or selfish, conservative or liberal, immature or mature, and so forth, prevents us from thinking critically about issues.
4. **We view things too much in light of our culture and our experience.** We are all ethnocentric, which can cause us to accept that whatever our own cultural group believes or does is the proper way. Whether it is encouraging large or small families, eating with a fork or chopsticks or one’s fingers, or celebrating events and holidays in certain ways, we consider anything different from what we do to be odd or even wrong. Viewing things only in light of our culture and past experience prevents us from looking at new ideas and considering them objectively. With regard to personal experience, for example, someone who had a happy experience being a stepchild would have a very different view of stepparents from someone who had an unhappy experience as a stepchild.
5. **We stereotype and label.** The world can be overwhelming and confusing. One way we try to make sense of it is to put things and people into categories. While this is helpful, it also has some negative effects. It prevents us from seeing situations and individuals as unique because we assume things about them that may not be true. For example, on the first day of the semester, suppose you notice a classmate who is very physically fit and is wearing a baseball cap. You might be inclined to make an automatic judgment (stereotype) about him and what he is like as a person: that he is a “jock” (or even a “dumb jock”). Consequently, you decide he is not worth taking the time to get to know. Perhaps he is a straight-A student who has a full academic scholarship and whose goal is to become a dentist. You will never know unless you think critically enough to question your assumptions and the stereotypes you hold.

Which of these reasons prevent you from thinking critically when you read? (Think critically about this! You may find it helpful to mark the items in the preceding list that pertain to you.) Becoming aware of these tendencies in yourself is essential in order for you to think critically. Let’s look now at three critical thinking skills.

### Distinguishing Facts from Opinions and Determining Whether Opinions Are Well-Supported

Many students mistakenly believe that anything that appears in print, especially in textbooks, must be a fact. Although most college textbooks do consist primarily of facts, textbooks typically include many useful and valuable opinions as well.

What is the difference between a fact and an opinion? A **fact** is something that can be proved to exist or to have happened. An example would be: *In 1620 the Pilgrims landed in what is now Plymouth, Massachusetts.* In addition, a fact can be something that is generally assumed to exist or to have happened. An example would be: *Thousands of years ago, early people migrated from Asia to the North American continent*

#### fact

Something that can be proved to exist or to have happened.

by walking from Siberia to Alaska across the frozen Bering Strait. The process of proving that something is a fact (that it is true) is called *verification*. Verification requires experimentation and research or direct experience and observation.

### opinion

Something that cannot be proved or disproved; a judgment or a belief.

### ✓ Teaching Tip

Point out that viewing everything as either fact or opinion is the type of failure to think critically that is described in no. 3 in the preceding section (putting things into one of two mutually exclusive categories).

An **opinion**, on the other hand, is a judgment or belief that cannot be proved or disproved. When information in a statement cannot be proved to be either factual or false, it represents an opinion. It is important to realize, however, that not all opinions are equally valuable. Although opinions cannot be proved, they are valuable when they are supported by valid reasons and plausible evidence. Therefore, well-supported opinions are useful because they are based on facts or on the ideas of knowledgeable people. Opinions in textbooks typically represent this type of valuable opinion: They are the well-reasoned beliefs of the author or other experts. Scientific theories are also examples of expert opinions. (If a theory could be proved, then it would no longer be a theory, of course. It would become a fact.) Needless to say, poorly supported or unsupported opinions are not useful.

Students sometimes mistake incorrect information for an opinion because they assume if something is not a fact, it must automatically be an opinion. However, information can be one of three things: It can be a fact (it is correct information); it can be an opinion (it represents someone's belief); or it can be a *false statement* (it is simply incorrect information). *January follows February* and *Water freezes at 212°F* are examples of false statements. Since they can be *proved incorrect*, they are not opinions.

How can you tell when you are reading an opinion? Because opinions represent judgments, beliefs, or interpretations, authors often use certain words or phrases to indicate that they are presenting an opinion. These words and phrases signal an opinion:

perhaps	a possible explanation is
apparently	one theory is that
presumably	it seems likely
one possibility is	this suggests
one interpretation is	in our view
in our opinion	in the opinion of

In addition, words that indicate value judgments can signal opinions. They include descriptive words such as:

better	interesting
more	outdated
less	beautiful
safer	wealthy
most	incompetent
greatest	successful
worst	irresponsible
best	dangerous
excellent	fascinating
harmful	effective



These words signal opinions because people often disagree about what is “successful,” “fascinating,” and so on. For example, in the sentence *Adults must have a college degree in order to be successful*, the word *successful* could mean successful financially, personally, socially, or in all these ways. Because there are different interpretations of what *successful* means, it would be impossible to prove a statement like this (although it could be supported with certain facts about college graduates). Consequently, the statement expresses an opinion. (Even though it may be a widely held opinion, it is still an opinion.) As you read, then, watch for value judgments that can be interpreted in different ways by different people.

**Comprehension-Monitoring Question for Thinking Critically to Evaluate Whether Statements Are Facts or Opinions**

Can the information the author presents be proved, or does it represent a judgment?

Critical readers ask themselves, “Can the information the author presents be proved, or does it represent a judgment?” When an author includes opinions, it is important for you to evaluate them, because not all opinions are valid or useful. An opinion is of little value if it is poorly supported (the author does not give good reasons for it). A well-supported opinion, on the other hand, can be as important and as useful as a fact. To repeat: Even though opinions cannot be proved, they are valuable when supported by facts and other well-reasoned opinions; poorly supported opinions are of little value, even if the author writes persuasively. For example, consider the following two sets of support for the statement *Anna Garcia has excellent qualifications for serving as governor*. (This statement is an opinion, of course, because of the use of the word *excellent*.) Note how both facts and opinions are used to support the statement. Also, note the important difference between the quality of the two sets of facts and opinions given as support for the statement.

*Opinion:* Anna Garcia has excellent qualifications for serving as governor.

**Well-reasoned support:**

She has a law degree from Harvard. (*fact*)

She was chief legal counsel of a *Fortune* 500 company for six years. (*fact*)

She served 12 years as a state senator. (*fact*)

She is extremely ethical. (*opinion*)

She is strongly committed to family values. (*opinion*)

She is an effective problem-solver. (*opinion*)

**Poor support:**

Her father served as an ambassador. (*fact*)

Her brother is a millionaire. (*fact*)

She has been married to the same man for 20 years. (*fact*)

She has smart, beautiful children. (*opinion*)

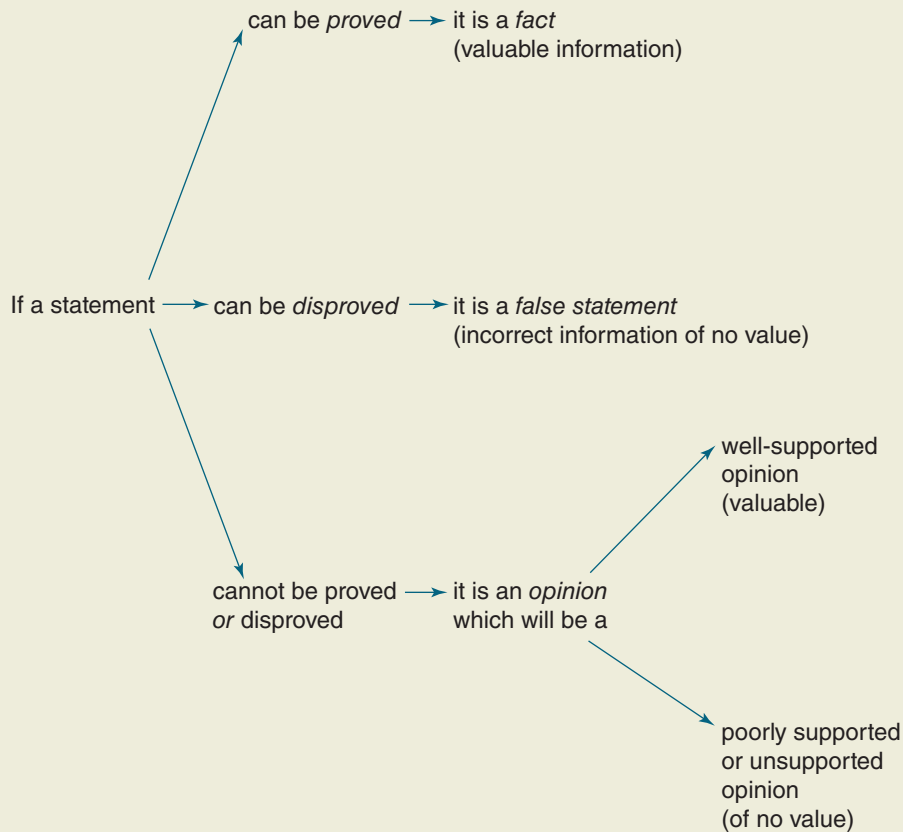
She is attractive. (*opinion*)

She comes across well on TV. (*opinion*)

A critical reader would be much more likely to accept the opinion that “Anna Garcia has excellent qualifications for serving as governor” if it were supported with good reasons (the first set of support) rather than with poor reasons (the second set). Support is convincing when it consists of relevant facts and well-reasoned opinions. Don’t discount a statement simply because it is an opinion or is supported with other opinions. They may all be valuable, pertinent opinions.

The flowchart below summarizes the process for determining whether statements are facts, false statements, or opinions (which will be well-supported and valuable or unsupported or poorly supported, and of no value).

### DETERMINING WHETHER A STATEMENT REPRESENTS A FACT, A FALSE STATEMENT, OR AN OPINION



To distinguish between facts and opinions, ask yourself these questions in this order:

1. *Can the information in the statement be proved?*  
If so, it is a fact (correct information).
2. *Can the information in the statement be disproved?*  
If so, it is a false statement (incorrect information).
3. *Is the information in the statement something that cannot be proved or disproved?*  
If so, it is an opinion.

When the statement is an opinion, ask yourself these additional questions:

- *Is the opinion well-supported?* (That is, is it based on valid reasons and plausible evidence?)  
If so, it is a valuable opinion.
- *Is the opinion poorly supported or unsupported?*  
If so, it is of little or no value.



Following are two excerpts from *The Autobiography of Malcolm X* (Selection 1.3, “Saved”). The first contains *facts* that can be verified about the prison in which Malcolm X served time.



### Stop and Annotate

Go back to the excerpt above. In the space provided, list on separate lines the facts contained in the excerpt.

The Norfolk Prison Colony’s library was in the school building. A variety of classes was taught there by instructors who came from such places as Harvard and Boston universities. The weekly debates between inmate teams were also held in the school building.

#### List the facts in this excerpt.

- Norfolk Prison’s library was in the school building.
- Instructors came from Harvard and Boston universities.
- Weekly debates were held in the school building.

Source: From Malcolm X and Alex Haley, *The Autobiography of Malcolm X*, p. 173. Copyright © 1964 by Alex Haley and Malcolm X. Copyright © 1965 by Alex Haley and Betty Shabazz. Used by permission of Random House, Inc.

Notice that the information in this passage can be verified by objective proof: the location of the prison library, some of the universities the instructors came from, and that weekly debates were held in the school building.

In the next passage, Malcolm X states his *opinions* about the new vistas that reading opened to him:



### Stop and Annotate

Go back to the excerpt above. In the space provided, list on separate lines the opinions contained in the excerpt.

Reading had changed forever the course of my life. The ability to read awoke inside me some long dormant craving to be mentally alive.

#### List the opinions in this excerpt.

- Reading changed the course of his life forever.
- Reading awoke in him a craving to be mentally alive.

Source: From Malcolm X and Alex Haley, *The Autobiography of Malcolm X*, p. 179. Copyright © 1964 by Alex Haley and Malcolm X. Copyright © 1965 by Alex Haley and Betty Shabazz. Used by permission of Random House, Inc.

Malcolm X’s opinions are that reading changed the course of his life forever and that it awoke in him a craving to be mentally alive. These statements reflect Malcolm X’s judgment about reading; they cannot be proved or disproved.

The next excerpt, from an American government textbook, discusses how historians and political scientists rank the first 39 presidents of the United States. It includes four lists that summarize the results of several surveys. As this passage shows, experts often agree in their opinions. When such agreement exists, the opinions are especially valuable.

### Scholars Rank the Presidents

Several surveys have asked American historians and political scientists to rank the presidents from best to worst. Although some presidential reputations rise or fall with the passage of time, there has been remarkable consistency in whom the scholars rank as the best and worst presidents. The consistency of these results suggests that scholars use some unspoken criteria when assessing the presidents. At least four criteria stand out: the effectiveness of presidential policy, the president's vision of the office, the president's handling of crises, and the president's personality.

In three surveys conducted in the 1980s, scholars were asked to rank the presidents. The results below show only those presidents who clearly and consistently ranked near the top or bottom. The surveys included all presidents except Reagan (who was still in office and thus could not be assessed dispassionately), George H. W. Bush, Bill Clinton, George W. Bush, and Barack Obama (who had not yet served at the time these surveys were conducted); and William Harrison and James Garfield (whose terms were too short to be realistically assessed).

#### Greatest presidents

(in top five on all three surveys)

- Abraham Lincoln
- George Washington
- Franklin Delano Roosevelt
- Thomas Jefferson
- Theodore Roosevelt

**What is the opinion of these historians and political scientists as to which presidents have been the greatest?**

*The greatest presidents were:*

- Abraham Lincoln
- George Washington
- Franklin Delano Roosevelt
- Thomas Jefferson
- Theodore Roosevelt

**✓ Teaching Tip**

See if students recognize this ranking as a sequence from best to worst.

**Stop and Annotate**

Go back to the preceding excerpt. In the space provided, list the presidents who have been the greatest, in the opinion of the scholars surveyed.

**Near-greats**

(in top ten on all three surveys)

- Woodrow Wilson
- Andrew Jackson
- Harry S. Truman

**Near-failures**

(in bottom ten on all three surveys)

- Calvin Coolidge
- Millard Fillmore
- Andrew Johnson
- John Tyler
- Franklin Pierce

**Failures**

(in bottom five in all three surveys)

- James Buchanan
- U.S. Grant
- Warren G. Harding
- Richard M. Nixon

*Source:* John J. Harrigan, *Politics and the American Future*, 3e, New York: McGraw-Hill, pp. 282–83. Copyright © 1992 by John J. Harrigan. Reprinted by permission of the author. Data in table from: 1982 poll of forty-nine scholars in *Chicago Tribune Magazine*, January 10, 1982, pp. 8–13, 15, 18; poll of forty-one scholars by David L. Porter in 1981, reprinted in Robert K. Murray and Tim H. Blessing, “The Presidential Performance Study: A Progress Report,” *Journal of American History* 70, No. 3 (December 1983: 535–55).

As you can see from the information in the selection, five presidents have been judged, in the opinion of all the scholars surveyed, to be the greatest: Abraham Lincoln, George Washington, Franklin Delano Roosevelt, Thomas Jefferson, and Theodore Roosevelt.

Here are two additional points to remember about facts and opinions: First, although some paragraphs contain only facts or only opinions, a paragraph may contain *both* facts and opinions (it may even present both facts and opinions in the same sentence). Second, it may seem difficult at times to distinguish opinions from facts because authors sometimes present opinions in ways that make them seem like facts. For example, a writer might introduce an opinion by stating, “The fact is . . .” (For example, “The fact is, Hawaii’s weather makes it the perfect place for your winter vacation.” This statement is really an opinion about winter vacations and Hawaii’s weather.) Stating that something is a fact, however, does not make it a fact. (Hawaii certainly isn’t the perfect place for your winter vacation if you want to go snow skiing.)

Ideally, of course, an author would always express an opinion in a way that makes it clear that it *is* an opinion. (“In this writer’s opinion, Hawaii’s weather makes it the perfect place for your winter vacation.”) But authors do not always do this, so it is your job to *think critically* as you read, being alert for opinions. When you identify an opinion, continue reading to determine whether the opinion is well-supported. Although you should not accept an opinion unless it is well-supported, you should be open to accepting opinions that *are* well-supported.

## EXERCISE 1

This paragraph comes from a business textbook:

### So You Want to Be a Manager

What kind of manager do you want to be? Experts suggest that the need for managers will increase by millions of jobs by 2016. But the requirements for these management jobs will become more demanding with every passing year. However, if you like a challenge and you have the right kind of personality, management remains an exciting and viable field. In fact, the Bureau of Labor Statistics predicts that management positions in public relations, marketing and advertising will rise 12% overall between 2006 and 2016. Salaries for managerial positions remain strong overall. Pay can vary significantly depending on your level of experience, the firm where you work, and the region of the country where you live. Nationwide average income for chief executives is \$151,370; for human resource managers, \$99,810; for administrative managers, \$76,370. In short, if you want to be a manager, there will be a wealth of opportunities in almost every field.

Source: Adapted from O. C. Ferrell, Geoffrey A. Hirt, and Linda Ferrell, *Business in a Changing World*, p. 201. Copyright © 2011 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.

Identify each of these statements from the excerpt as either a *fact* or an *opinion*. Write your answer in the space provided.

- The requirements for these management jobs will become more demanding with every passing year. opinion (future event; judgment words—more demanding)
- If you like a challenge and you have the right kind of personality, management remains an exciting and viable field. opinion (judgment words—exciting, viable)
- The Bureau of Labor Statistics predicts that management positions in public relations, marketing and advertising will rise 12% overall between 2006 and 2016. fact (Research could confirm that the Bureau of Labor Statistics made this prediction.)
- Salaries for managerial positions remain strong overall. opinion (judgment word—strong)
- Pay can vary significantly depending on your level of experience, the firm where you work, and the region of the country where you live. fact (can be confirmed by research)
- Nationwide average income for chief executives is \$151,370; for human resource managers, \$99,810; for administrative managers, \$76,370. fact (can be confirmed by research)
- If you want to be a manager, there will be a wealth of opportunities in almost every field. opinion (future event; judgment words—wealth of opportunities)

8. Experts suggest that the need for managers will increase by millions of jobs by 2016. fact (can be confirmed that experts have suggested this)

## Making Inferences and Drawing Logical Conclusions

Thinking critically as you read entails understanding not only what the author states directly but also what the author *suggests*. In other words, it is your responsibility as a critical reader to make inferences and draw conclusions about what you have read. An **inference** is a logical conclusion based on what an author has stated. A **conclusion** is a decision that is reached after thoughtful consideration of information the author presents. The information that is given will lead you to the conclusion that should be drawn. Needless to say, any inferences or conclusions you draw will be affected by your experience, your prior knowledge (or lack of it), and your own biases.

### inference

A logical conclusion based on what an author has stated.

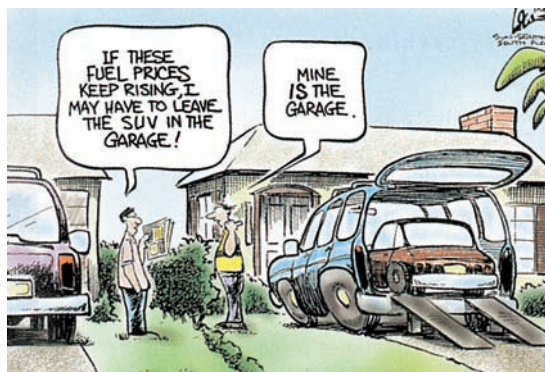
### conclusion

A decision that is reached after thoughtful consideration of information the author presents.

Making inferences is not new to you; you make inferences continually in your daily life. You draw conclusions based on descriptions, facts, opinions, experiences, and observations. Assume, for example, that a classmate arrives late. She seems frustrated and upset, and her hands are covered with grease and grime. It would be logical to infer that she has had a flat tire or some other car trouble and she had to fix the problem herself. Your inference would be based on your observations. Similarly, you make inferences every day about things you read. For instance, suppose that your roommate leaves you a note saying, “Hope you didn’t need your iPod this afternoon. I wanted to listen to music while I worked out.” You would infer that your roommate has borrowed—and is using—your iPod. This is your roommate’s *intended meaning* (“I borrowed your iPod, and I’m using it”), even though this information does not appear in the message. Making logical inferences helps you understand an author’s intended meaning, just as the author’s tone can (Chapter 8).

In fact, jokes and cartoons (including editorial and political cartoons) are funny only if the listener or reader makes the correct inference. (Interpreting political

Source: Chan Lowe.  
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cartoons is presented in Chapter 10.) Take, for example, the editorial cartoon on page 603. It comes from *BusinessWeek* magazine. What inferences does the cartoonist expect readers to make about the fuel efficiency and size of the SUV (sport utility vehicle)? What inference could be made about the cartoonist's (and the publication's) position regarding SUVs?

You have already had countless opportunities to make inferences earlier in this book. The skill in Chapter 5, "Formulating Implied Main Ideas," involves making inferences. You learned that when authors *suggest* a main idea but do not state it directly, they are *implying* it. When readers comprehend an implied main idea, they are *inferring* it (making an inference about it). The writer implies the main idea; the reader infers it. Some of the critical reading skills in Chapter 8 involve making inferences. You learned, for example, that an author's tone helps you infer his or her intended meaning. You learned that after determining the author's purpose, you can conclude who the intended audience is.

Critical thinking routinely involves making inferences and drawing logical conclusions, although there are times when an author simply states his or her conclusion. When the author does state the conclusion, it typically appears at the end of the passage, and it is often the main idea of a paragraph or the overall main idea of the selection. Authors use phrases such as these to announce a conclusion: *in conclusion*, *consequently*, *thus*, and *therefore*. Stated conclusions are important, so pay careful attention to them.

When the author states the conclusion, you do not need to infer it: The author has done the work for you. However, when there is a conclusion to be drawn—that is, when the author does not state it—it is up to you to infer it.

An inference goes beyond what the author states but must always be *based on* what is stated in the passage. Remember that you cannot use as an inference anything already *stated* in the paragraph. For example, if the author says, "The *Titanic* sank because it hit an iceberg," you cannot give as an inference "The *Titanic* sank because it hit an iceberg": This has been directly stated. This is logical: If the author has already stated it, there is no reason for you to infer it. Nor are you making an inference if you merely paraphrase (restate) information that is presented in the paragraph. For example, you cannot give as an inference "An iceberg caused the *Titanic* to sink," because it is merely a paraphrase of information given by the author. You could, however, make this inference: "The water in which the *Titanic* sank was extremely cold." This is a logical inference since the author states that there were icebergs in the water, which suggests that the water was extremely cold.

When you read, you should ask yourself, "What logical inference (conclusion) can I make, based on what the author has stated?" To draw a conclusion, you must deduce (reason out) the author's meaning. That is, you must use the "evidence" and facts the author presents to arrive at the conclusion or inference the author wants you to make. You must make a connection between what an author says and what the author wants you to conclude. For example, a writer might describe the benefits of regular exercise but not state directly that you should exercise. By presenting certain facts, the writer expects you to make the inference (draw the conclusion) that you should exercise regularly.

You can understand more about how to make logical inferences by studying examples of correct inferences. An excerpt from a business communications textbook

**Comprehension-  
Monitoring  
Question for Making  
Inferences**

What logical inference (conclusion) can I make, based on what the author has stated?



Down at the factory in Waterbury, Vermont, they were known as “the boys.” They are Ben Cohen and Jerry Greenfield, arguably America’s most famous purveyors of ice cream and certainly two of America’s most colorful entrepreneurs. They’ve been friends since seventh grade and business partners since 1978 when they opened their first scoop shop, using techniques gleaned from a \$5 correspondence course on how to make ice cream. In 2000, they sold their firm, Ben & Jerry’s Homemade, to Unilever, which aspires to carry on certain values. It has become a billion-dollar enterprise and a leading retailer of super-premium ice cream.

Ben and Jerry have strong personalities and strong opinions. They believed that work should be fun, or else it wasn’t worth doing. They also believed in helping the unfortunate, protecting the environment, and treating people fairly. They wanted their company to be a happy, humanitarian place where everybody felt good about coming to work and producing a top-notch product.

Actions also telegraphed Ben & Jerry’s commitment to an egalitarian work environment: the open office arrangement, the bright colors, the pictures of cows and fields hanging on warehouse walls, the employee committees, the casual clothes, the first-name relationships, the compressed pay scale that kept executive salaries in balance with lower-level compensation, the free health club memberships for everyone, the on-site day-care facility. And the free ice cream. Three pints a day per person. Now that’s communication at its best!

**What logical conclusions can you make about the employees at Ben & Jerry’s Homemade?**

- Employees were happy to work there.
- They appreciated the company’s philosophy.
- They did not feel a high level of stress.
- They were likely to remain employees of Ben & Jerry’s.

*Source:* Adapted from Courtland Bovée and John Thill, “Communication Close-Up at Ben & Jerry’s Homemade,” *Business Communication Today*, 4e. Upper Saddle River, NJ: Prentice-Hall, 1995, pp. 26–28. Reprinted with permission of Prentice-Hall.

about the early days of a well-known ice cream company, Ben & Jerry's Homemade, appears on page 605. After reading the excerpt, you can draw logical inferences about how employees felt about working at Ben & Jerry's. Read it now.

Because the owners of Ben & Jerry's Homemade provided their employees with a fair, supportive, informal, and comfortable work environment, it is logical to conclude that:

- Employees were happy to work there.
- They appreciated the company's philosophy.
- They did not feel a high level of stress.
- They were likely to remain employees of Ben & Jerry's.

The following details from the passage are the ones on which these inferences are based:

- Employees called Ben and Jerry "the boys."
- Ben and Jerry believed that work should be fun.
- Ben and Jerry were interested in protecting the environment.
- They believed in treating people fairly.
- They wanted their company to be a happy, humanitarian place.
- They had an open office arrangement.
- They used bright colors.
- There were pictures on warehouse walls.
- Employees wore casual clothes.
- First names were used.
- There was a compressed pay scale.
- There was a free health club.
- There was an on-site day-care facility.
- Employees received free ice cream daily.



### Stop and Annotate

Go back to the preceding excerpt. In the space provided, write the logical conclusions that can be made about the employees at Ben & Jerry's Homemade.

You could draw other logical conclusions from these details as well. For example, you could conclude that companies can be humane and humanitarian yet still be extremely profitable, that the public appreciates a high-quality product and is willing to pay for it, or even that you would like to work at Ben & Jerry's.

Here is another textbook excerpt in which conclusions must be inferred by reading and thinking critically. The passage is from a health textbook, and its topic is *passive smoking*.

### Passive Smoking

Reports from the U.S. surgeon general's office suggest that tobacco smoke in enclosed indoor areas is an important air pollution problem. This

has led to the controversy about **passive smoking**—the breathing in of air polluted by the secondhand tobacco smoke of others. Carbon monoxide levels of sidestream smoke (smoke from the burning end of a cigarette) reach a dangerously high level. True, the smoke can be greatly diluted in freely circulating air, but the 1 to 5 percent carbon monoxide levels attained in smoke-filled rooms can be sufficient to harm the health of people with chronic bronchitis, other lung disease, or cardiovascular disease.

**What logical conclusions can you make about nonsmokers and smokers?**

- Nonsmokers, especially those with certain health conditions, should avoid enclosed indoor areas in which there is cigarette smoke.
- Smokers should refrain from smoking around others in an enclosed area.

*Source:* Marvin R. Levy, Mark Dignan, and Janet H. Shirreffs, *Targeting Wellness: The Core*, pp. 262–63. Copyright © 1992 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.



### Stop and Annotate

Go back to the excerpt above. In the space provided, write the logical conclusions that can be made about both nonsmokers and smokers.

The authors want the reader to conclude that nonsmokers, especially those with certain health conditions, should avoid enclosed indoor areas in which there is cigarette smoke. Smokers should also conclude that they ought to refrain from smoking around others in an enclosed area. These are conclusions the authors want the reader to infer, even though they do not state them. These inferences are based on the statements that “carbon monoxide levels of sidestream smoke reach dangerously high levels” and that these levels “can be sufficient to harm the health of people with chronic bronchitis, other lung disease, or cardiovascular disease.”

When you read, remember to ask yourself, “What logical conclusion can I draw, based on what the author has stated?”

The chart on page 608 illustrates the application of critical thinking skills to a review of an imaginary movie. (This is the same movie review that appeared in Chapter 8, “Reading Critically.”) It is designed to show that critical thinking skills are related and that they are applicable to reading tasks that you encounter daily.

## EXERCISE 2

This paragraph comes from a geography textbook:

### International English

Worldwide, English has no rivals. Along with French, it is one of the two working languages of the United Nations. Two-thirds of all scientific papers are published in it, making it the first language of scientific discourse. In addition to being the accepted language of international air traffic control, English is the sole or joint language of more

(Continued on next page)

nations and territories than any other tongue. “English as a second language” is indicated with near-universal or mandatory English instruction in public schools. In Continental Europe, more than 80% of secondary school students study it as a second language and more than one-third of European Union residents can easily converse in it.

Source: Adapted from Arthur Getis, Judith Getis, and Fellmann, *Introduction to Geography*, 10e, p. 241. Copyright © 2006 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.

Based on the information in this passage, write a *logical conclusion* that could be made about *learning English if it is not a person’s first language*:

*If English is not a person’s first language, it would be extremely useful to learn it as a second language.*

## Distinguishing between Deductive and Inductive Reasoning

### deductive reasoning

A process of reasoning in which a general principle is applied to a specific situation.

No discussion of critical thinking would be complete without explaining the difference between deductive reasoning and inductive reasoning. **Deductive reasoning** refers to reasoning that involves taking a generalization and seeing how it applies to a specific situation. It is often called “reasoning from the general to the specific.” This is the type of reasoning that is used when a judge applies a general law to a specific legal case. It is the kind of reasoning you use when you apply a general value, such as honesty, to a particular situation (“I need to find the owner of this billfold and return it”).

## EXAMPLE OF CRITICAL THINKING APPLIED TO MOVIE CRITIC’S REVIEW

Here is a critic’s imaginary review of *Cyberpunk*, a new science fiction movie:

Another movie from Extreme Studios has just been released: *Cyberpunk*. Is it worth seeing? That depends: Do you enjoy violence? Do you like vulgar language? Do you appreciate painfully loud sound effects? What about watching unknown actors embarrass themselves? Or sitting for three hours and ten minutes without a break? If so, and you’ve got \$8.50 to burn, then *Cyberpunk* is a movie you must see!

### Critical Reading Questions

### Answers

What is the author’s purpose?	To persuade readers to skip this movie
Who is the author’s intended audience?	The moviegoing public
What is the author’s point of view?	<i>Cyberpunk</i> is a terrible movie.*
What is the author’s tone?	Sarcastic
What is the author’s intended meaning?	Don’t waste your money or your time on this movie.
Does the author include facts, opinions, or both?	Both
What logical inference (conclusion) does the author expect you to make?	This movie isn’t worth seeing.

\*Notice that this is also the author’s main idea or argument.

**inductive reasoning**

A process of reasoning in which a general principle is developed from a set of specific instances.

The opposite of deductive reasoning is **inductive reasoning**, drawing a general conclusion that is based on specific details or facts. It is also called “reasoning from the specific to the general.” You use inductive reasoning when you read a paragraph that consists only of details and you reason out the general point the author is making (the implied main idea).

Students sometimes get deductive and inductive reasoning mixed up. Here is a memory peg that may help you avoid this problem:

- With *deductive* reasoning, you are going *down* or *away* from something larger and more general to smaller, more specific things (deduct = take away).
- With *inductive* reasoning, the smaller parts or specific details lead *in* to the larger generalization (induct = lead into).

## Evaluating an Author’s Argument

You now know that critical thinking includes the skills of distinguishing between facts and opinions and making logical inferences. Now you will learn how to use these two skills (along with the critical reading skills you learned in Chapter 8) to *evaluate* material you read. The steps below describe the process for evaluating an author’s argument.

### Step 1: Identify the Issue

The first step, of course, is to identify the issue. An *issue* is simply a controversial topic. In other words, an issue is a topic that people have differing opinions about. To identify the issue, ask yourself, “What controversial topic is this passage about?” Examples of issues are *whether there should be regulation of pornographic websites*, *whether government-subsidized health care should be provided for all Americans*, and *whether U.S. corporations should outsource jobs to workers in foreign countries*.

### Step 2: Determine the Author’s Argument

The second step is to determine the author’s argument. An **author’s argument** is the author’s position on an issue. That is, an author’s argument is his or her opinion on an issue. (An author’s argument is simply an overall main idea that is an opinion.) The author’s argument is what the author believes and wants to persuade the reader to believe or do. You may also hear an author’s argument referred to as his or her *point of view*.

An author’s argument is not the same as an argument that is verbal disagreement or dispute. The author’s purpose in a written argument is to persuade the reader to believe or do something by “arguing” (presenting) a case for it. An author “argues” for it in the same way an attorney “argues” his or her client’s side of a case during a trial. For example, an author might argue that *All college students should be required to take at least one computer science course*. To persuade the reader to accept (believe) his or her argument, the author typically presents support or evidence that backs it up. An author does this in the same way that an attorney

#### Critical Thinking Question for Identifying the Issue

What controversial topic is this passage about?

**author’s argument**

The author’s position on an issue.

The author’s argument is also known as the author’s *point of view*.

#### Critical Thinking Question for Determining the Author’s Argument

What is the author’s position on the issue?

presents evidence to support his or her case. To determine the author's argument, ask yourself, "What is the author's position on this issue?"

### author's bias

The side of an issue an author favors; an author's preference for one side of the issue over the other.

Part of understanding an author's argument is recognizing the **author's bias** in favor of one side of an issue. For example, if the author's argument is *All college students should be required to take at least one computer science course*, then the author's bias is that he or she *favors* computer literacy for college students. If an author's argument is *Our government should not impose any restrictions on gun ownership*, then the author's bias is that he or she *opposes* gun control.

Authors who have a bias in favor of one side of a controversial issue support that side: They are *for* it. For example, the term *pro-environmental* would describe an author who favors legislation to protect the environment. Authors who have an opposing bias take the opposite position: They are *against* it. For example, the term *anti-environmental* would describe an author who opposes efforts or legislation to protect the environment. As you can see, the prefixes *pro-* and *anti-* can be helpful in describing an author's bias on an issue.

How can you tell whether an author has a bias when the author does not directly state his or her position? The best way is to examine the support the author gives. Ask yourself, "Does the author present support and information about both sides of the issue?" If not, ask yourself, "Which side of the issue does the author present support for?" This will reveal the author's bias.

By the way, part of thinking critically involves asking yourself whether *you* have a bias about an issue. If you do, make an extra effort to be open-minded and objective when you evaluate an author's argument. Otherwise, you may reject the author's argument without seriously considering it or without considering it objectively.

Of course, there will be times when an author chooses not to take a position on an issue. That is, the author remains *neutral* on an issue. The author does not take a position because his or her purpose is to present *both* sides of the issue objectively. The author presents relevant support for both sides of an issue so that readers can make their own informed decision about the matter. Most of the time, however, authors *do* have a point of view.

### Step 3: Identify the Assumptions on Which the Author Bases His or Her Argument

When authors present an argument, they typically base it on certain assumptions. An **author's assumption** is something that he or she takes for granted, or assumes to be true. The author does not state directly but accepts as true, without offering any proof. To identify an author's assumptions, ask yourself, "What does the author take for granted?" To illustrate, suppose an author's argument is *Society must do more to protect children from abuse*. To make this argument, the author would have to have made these assumptions:

- Children are worth protecting.
- Children are not being protected adequately at present.
- Children are not able to protect themselves.
- There are things society can and should do to protect children.

### Critical Thinking Question for Determining the Author's Bias

Which side of the issue does the author support?

### author's assumption

Something the author takes for granted without proof.

### Critical Thinking Question for Identifying the Author's Assumptions

What does the author take for granted?



These are all valid assumptions because they are reasonable and logical. Sometimes, though, an author bases an argument on illogical, unreasonable, or even incorrect assumptions. Incorrect assumptions weaken an argument. For example, an author's argument might be *The minimum age for obtaining a driver's license should be 20*. In this case, the author's assumptions might be:

- Teenagers are irresponsible.
- If people are older when they begin driving, they will be better drivers.

It is incorrect to assume that all teenagers are irresponsible, or that if people are older when they begin driving, they will automatically be better drivers.

When you read an author's argument, think critically about assumptions the author makes to be sure they are not incorrect, so that you are not manipulated by the author. Let's say that an author's argument is *We should hire Margaret Jones as our city manager because only a woman cares enough about the city's historic district to preserve it*. Two of the assumptions this argument is based on are:

- A man would not care about the city's historic district.
- A man is not capable of saving the city's historic district.

The author also assumes that saving the city's historic district is the sole or most important issue upon which the selection of the city manager should be based. These are illogical and incorrect assumptions, of course. Readers who do not question the author's assumptions might be manipulated into believing the author's faulty argument.

### **Critical Thinking Question for Identifying Support**

What types of support does the author present?

### **Step 4: Identify the Types of Support the Author Presents**

Examine the supporting details to see if the author gives facts, examples, case studies, research results, or expert opinions. Is the author himself or herself an expert? Does he or she cite personal experience or observations, make comparisons, or give reasons or evidence? Ask yourself, "What types of support does the author present?"

### **Step 5: Decide Whether the Support Is Relevant**

Support is *relevant* when it pertains directly to the argument. In other words, the support is meaningful and appropriate. Ask yourself, "Does the support pertain directly to the argument?" For example, the author might argue that *All states should lower the blood alcohol level used to determine if drivers are legally drunk*. Statistics that show a decrease in traffic accidents and deaths in the states that have a lower blood alcohol level would be relevant support. Sometimes, however, an author will try to persuade readers by using irrelevant support. If the author mentions that many drivers damage their own vehicles after drinking a large amount of alcohol, it would not be relevant support.

### **Critical Thinking Question for Deciding Whether an Author's Support Is Relevant**

Does the support pertain directly to the argument?

### **Step 6: Determine Whether the Author's Argument Is Objective and Complete**

The term *objective* means that an argument is based on facts and evidence instead of on the author's feelings or unsupported opinions. Suppose the author who

**Critical Thinking  
Questions for  
Evaluating Whether  
an Author’s Argument  
Is Objective and  
Complete**

Is the argument based on facts and other appropriate evidence?

Did the author leave out information that might weaken or disprove the argument?

is arguing that *All states should lower the blood alcohol level used to determine if drivers are legally drunk* knows someone who was injured by a drunk driver and is angry because the driver was not penalized. As support for his argument, the author talks about how angry drunk drivers make him. This would not be objective support; it would be *subjective* support (personal or emotional). Ask yourself, “Is the author’s argument based on facts and other appropriate evidence?” An author’s support should be objective, not merely personal or emotional.

The term *complete* means that an author has not left out information simply because it might weaken or even disprove his or her argument. Suppose an author’s argument is *Our city would benefit from a new sports arena*. The author mentions that a new arena would boost the city’s image and increase civic pride, but does not mention that a special bond would have to be passed by voters in order to pay for the arena, or that the new arena would cause major traffic congestion whenever sports events were held. Particularly when an author has a bias, he or she may deliberately leave out important information that would weaken the argument. When evaluating the completeness of an author’s argument, ask yourself, “Did the author leave out information that might weaken or disprove the argument?” To be fully convincing, an author should *present and overcome* opposing points.

**Step 7: Evaluate the Overall Validity and Credibility of the Author’s Argument**

The term *valid* means that an argument is correctly reasoned and its conclusions follow logically from the information, evidence, or reasons that are presented. You must evaluate the author’s logic, the quality of his or her thinking. To evaluate the validity of an author’s argument, ask yourself, “Is the author’s argument logical?” You should not accept an author’s argument if it is not valid. Before you can determine whether an argument is valid, you must consider your answers to the questions mentioned in the previous steps:

- “What does the author take for granted?”
- “What type of support does the author present?”
- “Does the support pertain directly to the argument?”
- “Is the argument objective and complete?”

Finally, you must evaluate the credibility of the author’s argument. The term *credibility* refers to how believable an author’s argument is. To be believable, the argument must be based on logic or relevant evidence. You must once again consider the author’s assumptions, the types and relevance of the support, objectivity, completeness, and validity to determine the believability of the argument. To evaluate the credibility of an author’s argument, ask yourself, “Is the argument believable?” An argument that has credibility is a convincing one. Just as you should reject any argument that lacks validity and credibility, you should be open to accepting one that is valid and credible.

Let’s look at an example of how an author’s argument could be evaluated critically. Consider the argument *All college students should be required to take at least*

**Critical Thinking  
Question for  
Evaluating Whether  
an Author’s Argument  
Is Valid and Credible**

Is the author’s argument logical and believable?

✓ **Teaching Tip**

When discussing the concept of credibility, point out that the Latin root *cred* means believe/belief. It also appears in words such as *credit*, *creed*, *credo*, *incredible*, and *credible*.

*one computer science course.* To evaluate its credibility, you would first examine the assumptions the author has made. For example, he or she obviously assumes that it is valuable to know about computers, that computers will continue to be important in people's personal and professional lives, and so on. The types of support the author gives might include facts and research findings about the growing use of computers, several examples of ways college students could benefit from computer skills, and his or her personal experience with computers. As a reader, you would then have to decide whether the support is relevant (directly supports the argument), whether it is complete (whether information that might support the other side of the issue was omitted), whether it is objective (based on facts and other appropriate evidence), and whether it is valid (logical). Consideration of these elements enables you to evaluate whether or not the author's argument has validity and credibility.

Now look at two short selections that both address the issue of legalizing drugs that are currently illegal. As you read, think about which side presents the better argument. (Before you begin reading, think about whether *you* already have a bias on this issue.)

### Pro-legalization: Weighing the Costs of Drug Use

For over 100 years this society has made the use of certain drugs illegal and has penalized illegal drug use. But during that time the use of marijuana, heroin and other opiates, and cocaine has become an epidemic. Most recently, Americans have spent billions of dollars on arresting and imprisoning sellers and importers of crack cocaine, with almost no effect on the supply or street price of the drug.

The societal costs of illegal drugs are immense. They include the costs of law enforcement, criminal proceedings against those arrested, and jails and prisons. They also include the spread of deadly diseases such as AIDS and hepatitis through the use of shared needles; the cost to society of raising "crack babies," children poisoned by drugs even before birth; and the cost of raising a generation of young people who see illegal drug

#### Evaluating an Author's Argument

Issue: "What controversial topic is this passage about?"

legalizing certain illegal drugs

Authors' argument: "What is the authors' position on the issue?"

Certain drugs that are now illegal should be legalized.

Authors' assumptions: "What do the authors take for granted?"

- It is not possible to stop illegal drug usage with legislation.
- Illegal drugs will always be a part of society.

selling and violence as their only escape from poverty and desperation. Finally, the societal costs include the emotional cost of the violence that no one can now escape.

Legalizing drug use in this country would eliminate many of these costs. Billions of dollars would be saved. This money could be spent on treatment of addicts, job training, and education programs to help many disadvantaged young people assume valuable roles in society. The government could make drug use legal for adults but impose severe penalties on anyone who sells drugs to young people. Drug sales could be heavily taxed, thus deterring drug purchases and giving society the benefit of tax revenues that could be used for drug treatment and education.

Type of support: “*What type of support do the authors present?*”

- the “costs” of trying unsuccessfully to regulate illegal drug use with laws
- advantages of legalizing drugs that are now illegal

Relevance of support: “*Does the support pertain directly to the argument?*”

Yes; it pertains directly to the argument.

Objectivity and completeness: “*Is the argument based on facts and other appropriate evidence?*” and “*Did the authors leave out information that might weaken or disprove the argument?*”

- seems objective; evidence is appropriate, but would have been stronger if research or case studies were cited
- not complete; presents only positive aspects of legalizing drugs

Validity and credibility: “*Is the argument logical and believable?*”

- The argument is valid; the benefits of legalizing illegal drugs are tied directly to “costs” of illegal drugs.
- The argument is credible, but it would have been stronger if research, case studies, and expert opinions were included.

Source: From Richard Schlaad and Peter Shannon, “Legalizing Drugs,” in Marvin R. Levy, Mark Dignan, and Janet H. Shirreffs, *Targeting Wellness: The Core*, p. 235. Copyright © 1992 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.

**Anti-legalization: Providing a Positive Role Model**

Certain drugs are illegal because they are dangerous and deadly and provide no societal value. To make their possession or use legal would send a message to young people that using drugs is acceptable and that drugs are not treacherous or life-destroying.

Making drugs illegal has not increased the number of drug users or sellers, just as making alcohol legal after Prohibition did not reduce the number of people who drank. Recent law enforcement efforts have indeed made a difference. Over the past few years, as law enforcement efforts have sent more and more people to jail, the number of young people who use illegal drugs has steadily declined. Furthermore, education about the ill effects of drug use has begun to deter people from buying and using illegal drugs.

Recently, the incidence of drug-related deaths and violence has begun to level off even in the areas of the most hard-core drug use. This is proof that strict law enforcement is working. This country has begun to turn the corner on this drug epidemic.

**Evaluating an Author's Argument**

Issue: *“What controversial topic is this passage about?”*

*legalizing certain illegal drugs*

---



---

Authors' argument: *“What is the authors' position on the issue?”*

*Certain illegal drugs should not be legalized.*

---

Authors' assumptions: *“What do the authors take for granted?”*

*It is possible to stop drug usage with legislation.*

---



---

Type of support: *“What type of support do the authors present?”*

- *analogy to Prohibition*
  - *information about the steady decline of drug use*
- 

Relevance of support: *“Does the support pertain directly to the argument?”*

*Yes; it pertains directly to the argument.*

---



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Objectivity and completeness: *“Is the argument based on facts and other appropriate evidence?”* and *“Did the authors leave out*

### ✓ Teaching Tip

Have students select and analyze an editorial from a newspaper (including your college's newspaper) or a news magazine.

*information that might weaken or disprove the argument?"*

- seems objective; support is reasonable, but would have been stronger if research, experts, or case studies were cited

- not complete; presents only one side

Validity and credibility: *"Is the argument logical and believable?"*

- The argument is valid; certain drugs are illegal because they are dangerous and deadly.

- The argument does not have strong credibility; the decline in drug use that is mentioned may be attributable to the way the statistics are reported, and the last statement in the argument is a sweeping generalization.

Source: Richard Schlaad and Peter Shannon, "Legalizing Drugs," in Marvin R. Levy, Mark Dignan, and Janet H. Shirreffs, *Targeting Wellness: The Core*, p. 235. Copyright © 1992 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.



### Stop and Annotate

Go back to the two preceding selections. In the spaces provided, answer the two sets of critical thinking questions for evaluating an author's argument.

Of the two selections, the pro-legalization argument (the first argument) is stronger. The authors give five distinct "costs" of illegal drugs and then explain how legalizing drugs (and the revenue from taxing them) could be directed at treating the problem. Further, the authors make it clear that there could still be strong penalties for any adults who sell drugs to young people. The anti-legalization argument is very general and is less convincing. Of course, the issue of drug legalization is a complex one, and this is not to say that these two short passages address all the issues. Still, of the two selections, the stronger argument was made in the pro-legalization selection.



**propaganda devices**

Techniques authors use in order to unfairly influence the reader to accept their point of view.

**Comprehension-Monitoring Question for Thinking Critically to Identify Propaganda Devices**

Has the author tried to unfairly influence me to accept his or her point of view?

## Identifying Propaganda Devices

To persuade a reader to believe their arguments, authors sometimes resort to **propaganda devices**, techniques designed to unfairly influence the reader to accept their point of view. They try to manipulate the reader by presenting “support” that is inadequate, misleading, or flawed. You are more likely to encounter propaganda in editorials, political pieces, advertisements, and certain other types of writing than in textbooks, of course. Still, you must think critically to detect whether authors are using propaganda devices. If you are not alert to these devices, you can be taken in by them.

Although speakers often use these same techniques, our focus is on authors’ use of them. In either case, and as the explanations show, each propaganda device is based on either emotion or flawed reasoning. To think critically and detect propaganda devices, ask yourself, “Has the author tried to unfairly influence me to accept his or her point of view?”

Here are brief descriptions and examples of several common propaganda devices. After each group of three, try the short application exercise.

- 1. Appeal to emotion.** Rather than provide support based on reason, the author appeals to readers’ emotions, such as appeals to fear, sympathy, vanity, guilt, and hatred.

### *Examples*

“If you don’t know how to use a computer, you might as well give up any hope of having a good career.” (*appeal to fear: author tries to frighten readers into accepting his or her point of view*)

“Adopt a pet today. There’s nothing more heartbreaking than a sad, lonely kitten or puppy in need of a loving home.” (*appeal to sympathy: author tries to make readers feel sorry for someone or something*)

“Discriminating buyers insist on a Lexus.” (*appeal to vanity: author appeals to readers’ vanity*)

- 2. Appeal to tradition.** The author tells readers they should do or believe something because it has always been done or believed in the past, or that by doing as the author says, they can create a new tradition.

### *Example*

“In this state, we’ve always voted for conservative candidates.”

- 3. Bandwagon.** The author says readers should believe something because “everyone else” believes it, or in other words, readers should “get on the bandwagon.” This strategy appeals to people’s desire to be part of the crowd and not feel different or left out.

### *Example*

“We all want to be in great shape nowadays, so join the millions of Americans who have bought the home Exer-Gym. Everyone agrees that it’s the only piece of exercise equipment you’ll ever need, that it’s the world’s best, and that it’s the most enjoyable way to get in shape. Join the Exer-Gym crowd now!”

**Exercise:** Label each statement a, b, or c according to the propaganda device it exemplifies.

- a. appeal to emotion
- b. appeal to tradition
- c. bandwagon

c

b

a

- Don't be left out of the fun! Book a SeaView cruise today!
- Dixie-Belle Lemonade: A Proud Southern Tradition
- Voting is your civic duty, a right, a privilege. If you don't vote, shame on you! (guilt)

- 4. Appeal to authority.** The author tries to influence readers to accept his or her argument or point of view by citing some authority who believes it.

*Example*

"Professor Dorf believes there was once life on Mars. If he believes it, it must be right. He is well-educated and has written a book about extraterrestrial life."

- 5. Testimonial.** This is similar to the appeal to authority. In this case, the author presents a famous person's endorsement of an idea or product to influence readers to believe it. Often, the person endorsing the product has no special knowledge about it or experience with it, so the testimonial is not worth much. Testimonial is also called *endorsement*.

*Example*

"Brad Pitt knows that Nike athletic products are the best money can buy!"

- 6. Straw man.** The author misrepresents what an opponent believes, and then attacks that misrepresented belief rather than the opponent's actual belief.

*Example*

"Our college cafeteria has awful food. Obviously, the cafeteria's manager doesn't care at all about students' preferences or their health. The college administration needs to replace the current manager with someone who actually cares about cafeteria customers." (Issue has been changed from the food to caring about students' preferences and health.)

**Exercise:** Label each statement a, b, or c according to the propaganda device it exemplifies.

- a. appeal to authority
- b. testimonial
- c. straw man

b

c

a

- "Got Milk?" (American Dairy Association's ad campaign featuring photos of celebrities holding a glass of milk and wearing a milk "moustache")
- The governor says he won't sign the proposed anti-gang legislation. Why would he want to leave citizens at the mercy of criminals?
- Three out of four dentists who recommend mouthwash recommend Rinse-O-Dent to their patients. (Point out the statement refers only to dentists who recommend mouthwash in the first place, and not dentists in general).

- 7. Either-or.** The author puts everything into one of two mutually exclusive categories and acts as if there are no other possibilities besides those two categories.

*Example*

“Either install a Blammo Home Security System or pay the consequences.”

- 8. False analogy.** The author makes a comparison that is either inaccurate or inappropriate.

*Example*

“Taking a shower with Spring Burst soap is like a refreshing romp in the surf.”

- 9. Circular reasoning.** The author merely restates the argument or conclusion rather than providing any real support. This is also called *begging the question*.

*Example*

“Vote for Bob Griggs for senator. He’s the best person for the job because there is no one else who’s better!”

**Exercise:** Label each statement a, b, or c according to the propaganda device it exemplifies.

- a. either-or
- b. false analogy
- c. circular reasoning

c

- These transactions must be ethical because if they weren’t, there would be a law against them.

b

- It’s clear that many professional athletes are just overgrown, spoiled children.

a

- Cultured people appreciate opera; uncultured people don’t.

- 10. Transfer.** The author transfers the good or bad qualities of one person or thing to another in order to influence readers’ perception of it.

*Example*

“Mother Teresa would have supported the legislation we are proposing to help the country’s homeless.”

- 11. Sweeping generalization.** The author presents a broad, general statement that goes far beyond the evidence. (*Stereotyping* is one form of sweeping generalization.)

*Example*

“All women are bad drivers.”

- 12. Hasty generalization.** The author jumps to a conclusion that is based on insufficient proof or evidence.

*Example*

“Sudzo made my clothes spotless and bright again. It’ll work on all of your laundry, too!”

**Exercise:** Label each statement a, b, or c according to the propaganda device it exemplifies.

- a. transfer
- b. sweeping generalization
- c. hasty generalization

    a    

- If General Robert E. Lee were alive today, he would have made the same decision that General Jones made last week.

    b    

- The homeless are lazy, unmotivated people who would rather ask for a hand-out than work for a living.

    c    

- My brother was a Boy Scout, and he loved it. Any boy would find that becoming a Boy Scout is one of the best decisions he could ever make!

- 13. Plain folks.** The author presents himself or herself as someone who is just like the readers, someone they can relate to.

*Example*

“For the rich, there’s therapy. For the rest of us, there’s bass. The Cariolus reel is built with care and precision by people who, just like you, would go crazy if they couldn’t fish.” (Shimano fishing reels advertisement)

- 14. Ad hominem.** The author attacks the person rather than the views or ideas the person presents.

*Example*

“My opponent once lied about serving in the military when he was a young man. Why should you believe him now when he says he will reduce taxes if you elect him? He’s a liar, and every campaign promise he makes is just another lie.”

- 15. Red herring.** The author presents an irrelevant issue to draw readers’ attention away from the real issue. The name comes from a trick used to throw hunting dogs off the scent of the track: a person trying to escape would drag a red herring (a strong-smelling fish) across his tracks.

*Example*

“This issue isn’t about bailing out companies whose management made irresponsible decisions; it’s about saving people’s jobs.”

**Exercise:** Label each statement a, b, or c according to the propaganda device it exemplifies.

- a. plain folks
- b. ad hominem
- c. red herring

    b    

- Professor Linden says cheating is wrong, but his opinion doesn’t count because he’s just parroting the administration’s point of view.

    a    

- Why should we hardworking, middle-class folks have to carry the tax burden in this country?

c

- The proposed Community Center is popular with citizens, but two older buildings would have to be bulldozed to create the space for it. We can't go around razing buildings willy-nilly all over the city.

**16. Post hoc.** The author implies that because one event happened before another, it caused the second event.

*Example* (There may have been other reasons for the job offer.)

"I read *The Keys to Success*, and a week later I was offered a job!"

**17. Hypostatization.** The author treats an abstract concept as if it were a concrete reality.

*Example* ("Technology")

"Technology is stripping us of our privacy and controlling our lives.

**18. Non sequitur.** The author links two ideas or events that are not related; one does not logically follow from the other.

*Example*

"Kiki's favorite color is orange. She plans to become a flight attendant."

**Exercise:** Label each statement a, b, or c according to the propaganda device it exemplifies.

- post hoc
- hypostatization
- non sequitur

     b

     a

     c

- Although it may not seem like it, the universe is always watching out for us.
- The picture on my TV got fuzzy, so I went over and smacked it. It fixed the problem: the picture cleared up.
- Marie lives uptown. She must be wealthy.

 **Teaching Tip**

The following exercise on propaganda techniques makes a good collaborative activity.

### PROPAGANDA TECHNIQUES EXERCISE

*Directions:* Here is a list of the propaganda devices that have been presented. Decide which one is used in each statement below. Appeal to emotion is used three times in the exercise, but the other propaganda devices are used only once. An example has been worked for you.

ad hominem	either-or	post hoc
appeal to authority	false analogy	red herring
appeal to emotion	hasty generalization	straw man
appeal to tradition	hypostatization	sweeping generalization
bandwagon	non sequitur	testimonial
circular reasoning	plain folks	transfer

*Example*

Insist on Best Brand Turkeys—because you don't want to be embarrassed on Thanksgiving Day.

appeal to emotion (fear)

---

1. Christmas just wouldn't be Christmas without Creamy Smooth Eggnog! It's been America's number one choice for more than 50 years.
2. Each year more than one million Americans trust Nationwide Realty to sell their homes. Shouldn't you?
3. Parents are justified in doing whatever it takes to keep themselves informed about their child if they think their child is doing something wrong. Dr. Laura says it's OK for parents to search their teenagers' rooms, read their diaries, and even make them take drug tests.
4. I've been a radio talk show host for 15 years now, and I've never found an arthritis pain reliever more effective than Salvo.
5. If Congress had passed that bill, we'd all be better off today.
6. The victims of the devastating tornado need more than your pity. They need you to roll up your sleeve and donate blood.
7. The governor opposes legislation that mandates safety locks on guns. Obviously, he has no problem with innocent children being killed by playing with guns.
8. You can either buy a Health Trip exercise bicycle or continue to be overweight and out of shape.
9. Having a career in real estate is like being able to print money!

appeal to tradition

---

bandwagon

---

appeal to authority

---

testimonial

---

post hoc

---

appeal to emotion (sympathy; guilt)

---

straw man

---

either-or

---

false analogy

---



- |   |                                   |
|---|-----------------------------------|
| 10. Install a Gold Star Home Alarm today! After all, no one wants to become a crime statistic.  | <u>appeal to emotion (fear)</u>   |
| 11. America will have better-educated citizens when fewer students drop out of school.  | <u>circular reasoning</u>         |
| 12. Princess Diana would have donated her time and energy to this worthy cause.   | <u>transfer</u>                   |
| 13. The plan for the new freeway may not be perfect, but keep in mind the City Council disagreed even more about the new library.   | <u>red herring</u>                |
| 14. Today's youth are self-centered and irresponsible.  | <u>sweeping generalization</u>    |
| 15. Government needs to be corralled and restrained.  | <u>hypostatization</u>            |
| 16. Blue Label Beer—the workingman's brew!  | <u>plain folks</u>                |
| 17. Senator Bledsoe is opposed to campaign funding reform. He's just the type of person who would solicit illegal contributions! I'll bet that during the last decade he's taken in hundreds of thousands of dollars illegally. | <u>ad hominem</u>                 |
| 18. If you like being near the beach, you'll love living in Hawaii.   | <u>hasty generalization</u>       |
| 19. Why shouldn't you have the best? Pamper yourself with a getaway weekend at Windcliff Resort and Spa.  | <u>appeal to emotion (vanity)</u> |
| 20. Mattie is vegetarian. She works at the bank.  | <u>non sequitur</u>               |

### A WORD ABOUT STANDARDIZED READING TESTS: CRITICAL THINKING

Many college students are required to take standardized reading tests as part of an overall assessment program, in a reading course, or as part of a state-mandated basic skills test. A standardized reading test typically consists of a series of passages followed by multiple-choice reading skill application questions, to be completed within a specified time limit.

#### Here are some examples of typical wording of questions about critical thinking:

- Questions about *fact and opinion* may be worded:
  - Which of the following statements expresses an opinion rather than a fact?
  - Which of the following sentences from the passage represents a fact?
  - Which of the following sentences from the passage represents an opinion?

*(Continued on next page)*

(Continued from previous page)

In dealing with questions about fact and opinion, watch for words (such as *perhaps*, *apparently*, *it seems*, or *this suggests*) that signal opinions. Watch also for judgmental words (such as *best*, *worst*, or *beautiful*), which also indicate opinions. In dealing with questions about inferences and logical conclusions, remember that an inference must be logical and must be based on information in the passage.

- **Questions about *inferences and logical conclusions* may be worded:**

Which of the following conclusions could be made about . . . ?

On the basis of information in this passage, the reader could conclude . . .

It can be inferred from the passage that . . .

The passage implies that . . .

- **Questions about the *author's argument* may be worded:**

In this selection, the author argues that . . .

The author's position on this issue is . . .

The author's point of view is . . .

The passage suggests that the author believes . . .

- **Questions about the *author's credibility* may be worded:**

The author has credibility because . . .

The author establishes his credibility by . . . (by presenting data, giving examples, etc.)

The author's argument is believable because . . .

The author is believable because . . .

- **Questions about the *author's assumptions* may be worded:**

The author bases his (or her) argument on which of the following assumptions?

Which of the following assumptions underlies the author's argument?

The author's argument is based on which of the following assumptions?

- **Questions about *types of support* the author presents may be worded:**

The author presents which of the following types of support?

The author includes all of the following types of support except . . .

- **Questions about *author's bias* may be worded:**

In this passage, the author shows bias against . . .

Which of the following statements most likely contains a biased attitude expressed in this passage?

**CHECKPOINT**  
Thinking Critically

*Directions:* Think critically as you read these paragraphs and then answer the questions that follow them. Write your answers in the spaces provided.

1. This paragraph comes from a business textbook:

Since you've signed up for this business course, we're guessing you already know the value of a college education. But just to give you some numerical backup, you should know that the gap between the earnings of high school graduates and college graduates, which is growing every year, now ranges from 60 to 70 percent. Holders of bachelor's degrees will make an average of \$51,000 per year as opposed to just \$31,500 for high school graduates. Thus, what you invest in a college education is likely to pay you back many times. A college degree can make a huge salary difference by the end of a 30-year career: more than half a million dollars. That doesn't mean that there aren't good careers available to non-college graduates. It just means that those with a college education are more likely to have higher earnings over their lifetime.

*Source:* Adapted from William G. Nickels, James M. McHugh, and Susan M. McHugh, *Understanding Business*, 7e, p. 3. Copyright © 2005 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.

d

Which of the following statements from the paragraph represents a fact rather than an opinion?

- Holders of bachelor's degrees will make an average of \$51,000 per year.
- High school graduates will make an average of \$31,500 per year.
- What you invest in a college education is likely to pay you back many times.
- The gap between the earnings of high school graduates and college graduates is growing every year. (*can be verified by research*)

2. This paragraph comes from a U.S. government textbook:

One area in which African Americans have made substantial progress since the 1960s is elective office. Although the percentage of black elected officials is still far below the proportion of African Americans in the population, it has risen sharply over recent decades. There are now roughly 500 black mayors and more than 40 black members of Congress. The most stunning advance, of course, is the election of Barack Obama in 2008 as the first African-American president.

*Source:* Adapted from Thomas E. Patterson, *The American Democracy*, Alternate Edition, 10e, pp. 137–39. Copyright © 2011 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.

b

Which of the following statements is a logical conclusion that can be inferred from the information in the paragraph?

- a. The percentage of black elected officials is still far below the proportion of African Americans in the population.
- b. It is likely that the percentage of African Americans elected to public office will increase.
- c. There are now many black mayors and black members of Congress.
- d. Full equality has been achieved in America.

3. This paragraph comes from a biology textbook:

### What Is Cancer?

**Cancer** is a growth disorder of cells. It starts when an apparently normal cell begins to grow in an uncontrolled way, spreading out to other parts of the body. The result is a cluster of cells, called a *tumor*; that constantly expands in size. Benign tumors are completely enclosed by normal tissue and are said to be encapsulated. These tumors do not spread to other parts of the body and are therefore noninvasive. Malignant tumors are invasive and not encapsulated. Because they are not enclosed by normal tissue, cells are able to break away from the tumor and spread to other areas of the body. Cells that leave the tumor and spread throughout the body, forming new tumors at distant sites, are called *metastases*. Cancer is perhaps the most devastating and deadly disease. Of the children born in 1985, one-third will contract cancer at some time during their lives; one-fourth of the male children and one-third of the female children will someday die of cancer. Most of us have had family or friends affected by the disease.

*Source:* Adapted from George B. Johnson, *The Living World: Basic Concepts*, 4e, p. 150. Copyright © 2006 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.

     d

Which of the following statements from the paragraph represents an opinion rather than a fact?

- a. Benign tumors are completely enclosed by normal tissue and are said to be encapsulated.
- b. Cancer cells that leave the tumor and spread throughout the body, forming new tumors at distant sites, are called metastases.
- c. Malignant tumors are invasive and not encapsulated.
- d. Cancer is perhaps the most devastating and deadly disease.

## 4. This paragraph comes from a health textbook:

Are people the way they are as a result of their genetic endowment or because of experiences they have had? The answer isn't black and white. Who we are as individuals is the result of a complex, ongoing interaction among our genetic inheritance, our lifestyle choices, and environmental factors of many kinds. Environmental factors include everything from our prenatal environment, to our family and community, to our ethnic or cultural group, to our society and the world at large. What we can say definitively about genetic inheritance is that it plays a key role in establishing some of the outside parameters of what you can be and do in your life. You can think of genetic inheritance as your blueprint, or starting point. The blueprint is filled in and actualized over the course of your entire life.

*Source:* Adapted from Michael L. Teague, Sara L. C. Mackenzie, and David M. Rosenthal, *Your Health Today*, p. 20. Copyright © 2011 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.

c

Which of the following statements is a logical conclusion that can be inferred from the information in the paragraph?

- a. Your genetic inheritance is your blueprint for what you can be and do in your life.
- b. You are the way you are as a result of your genetic endowment.
- c. You have control over some factors that shape you, but you do not have control over all of them.
- d. Your blueprint is filled in over the course of your entire life.

## 5. This paragraph comes from a U.S. history textbook:

### The Founding of Jamestown

Only a few months after receiving its charter from King James I, the London Company launched a colonizing expedition headed for Virginia—a party of 144 men aboard three ships. Only 104 men survived the journey from England. They reached the American coast in the spring of 1607, sailed into the Chesapeake Bay and up a river they named James, and established their colony on a peninsula extending from the river's northern bank. They called it Jamestown. The colonists had chosen their site poorly. In an effort to avoid the mistakes of Roanoke (whose residents were assumed to have been killed by Indians), they selected what they thought to be an easily defended location—an inland setting that they believed would offer them security. The site was low and swampy, and hot and humid in the summer. In addition, the site was subject to outbreaks of malaria. It was surrounded by thick woods, which were difficult to clear for cultivation. And it lay within the territories of powerful local Indians, a confederation led by the imperial chief Powhatan. The result could hardly have been more disastrous.

*Source:* Adapted from Alan Brinkley, *American History: Connecting with the Past*, 14e, p. 37. Copyright © 2012 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.

---

*c*

Which of the following statements from the paragraph represents an opinion rather than a fact?

- a.* They reached the American coast in the spring of 1607, sailed into the Chesapeake Bay and up a river they named James, and established their colony on a peninsula extending from the river's northern bank.
- b.* The site was low and swampy, and hot and humid in the summer.
- c.* The result could hardly have been more disastrous.
- d.* Only 104 men survived the journey from England.

DEVELOPING CHAPTER REVIEW CARDS

✓ **Teaching Tip**

Remind students that the student OLC contains a 10-item **Chapter Review Quiz** for this chapter. After completing the Chapter Review Cards below, students should complete the Chapter Review Quiz on the OLC.

Complete the eight review cards for Chapter 9 by answering the questions or following the directions on each card. When you have completed them, you will have summarized (1) what critical thinking is, (2) distinguishing facts from opinions, (3) making logical inferences and drawing logical conclusions, (4) deductive and inductive reasoning, (5) the steps in evaluating an author’s argument, (6) the definition of author’s argument, author’s bias, and author’s assumptions, (7) critical thinking questions to ask yourself, and (8) propaganda devices. Print or write legibly.

<b>Critical Thinking</b>	
	Define <i>critical thinking</i> . (See page 593.)
	Thinking about something in an organized way in order to evaluate it accurately
	List the skills of critical thinking. (See page 593.)
1.	Distinguishing facts from opinions, and determining how well supported the opinions are
2.	Making inferences and drawing logical conclusions
3.	Evaluating an author’s argument accurately
<b>Card 1</b>	Chapter 9: Thinking Critically



### Distinguishing Facts and Opinions

What is a *fact*? (See page 595.)

Something that can be proved to exist or to have happened

What is an *opinion*? (See page 596.)

Something that cannot be proved or disproved; a judgment or a belief

List several clue words and phrases that typically signal an opinion. (See page 596.)

perhaps                      in our opinion                      better                      apparently

it seems likely                      safer                      presumably                      in our view

greatest                      one possibility is                      in the opinion of                      excellent

To distinguish facts from opinions, what question should you ask yourself? (See page 597.)

Can the information the author presents be proved, or does it represent a judgment?

What makes an opinion valuable? (See page 597.)

The opinion is well-supported; that is, it is based on valid reasons and plausible evidence.

**Card 2** Chapter 9: Thinking Critically

### Making Inferences and Drawing Logical Conclusions

What is an *inference*? (See page 603.)

A logical conclusion based on what an author has stated

What is a *conclusion*? (See page 603.)

A decision that is reached after thoughtful consideration of information the author presents

When reading, what question should you ask yourself about making an inference? (See page 604.)

What logical inference (conclusion) can I make, based on what is stated in the paragraph?

**Card 3** Chapter 9: Thinking Critically

### Deductive and Inductive Reasoning

Define *deductive reasoning*. (See page 608.)

A process of reasoning in which a general principle is applied to a specific situation

Define *inductive reasoning*. (See page 609.)

A process of reasoning in which a general principle is developed from a set of specific instances

**Card 4** Chapter 9: Thinking Critically

### Steps in Evaluating an Author's Argument

List the seven steps you must take to evaluate an author's argument. (See pages 609–12.)

1. Identify the issue.
2. Determine the author's argument.
3. Identify the assumptions on which the author bases his or her argument.
4. Identify the types of support the author presents.
5. Decide whether the support is relevant.
6. Determine whether the author's argument is objective and complete.
7. Evaluate the overall validity and credibility of the author's argument.

**Card 5** Chapter 9: Thinking Critically

**Author's Argument, Bias, and Assumptions**

Define *author's argument*. (See page 609.)

The author's position on an issue

Define *author's bias*. (See page 610.)

The side of an issue an author favors; an author's preference for one side of an issue over the other.

Define *author's assumption*. (See page 610.)

Something the author takes for granted without proof

**Card 6** Chapter 9: Thinking Critically

**Critical Thinking Questions for Evaluating an Author's Argument**

What questions should you ask yourself in order to complete the seven steps for evaluating an author's argument? (See pages 609–12.)

1. *Issue: What controversial topic is this passage about?*
2. *Author's argument: What is the author's position on this issue?*
3. *Author's assumptions: What does the author take for granted?*
4. *Type of support: What types of support does the author present?*
5. *Relevance of support: Does the support pertain directly to the argument?*
6. *Objectivity and completeness: Is the argument based on facts and other appropriate evidence? Did the author leave out information that might weaken or disprove the argument?*
7. *Validity and credibility: Is the argument logical and believable?*

**Card 7** Chapter 9: Thinking Critically

### Identifying Propaganda Devices

What are propaganda devices? (See page 617.)

Techniques authors use in order to unfairly influence the reader to accept their point of view

List 18 types of propaganda devices. (See pages 617–21.)

appeal to authority

circular reasoning (begging the question)

appeal to emotion

transfer

appeal to tradition

sweeping generalization

bandwagon

hasty generalization

hypostatization

plain folks

testimonial

ad hominem

straw man

non sequitur

either-or

post hoc

false analogy

red herring

**Card 8** Chapter 9: Thinking Critically



TEST YOUR UNDERSTANDING  
Thinking Critically, Part 1

*Directions:* Read these paragraphs carefully and answer the questions that follow them. Write your answers in the spaces provided.

This paragraph comes from an economics textbook:

Paying for energy in its various forms, from electricity to heat to gasoline, plays a larger part in the budget of poor families than well-to-do families. This is because energy is largely used for essentials. For families in the lowest ten percent of households, energy costs account for a full third of household expenditures. For households in the top ten percent, it absorbs only five percent of household expenses. Indeed, paying for energy presents a significant challenge for poor families.

*Source:* Adapted from Robert Heilbroner and Lester Thurow, *Five Economic Challenges*, Englewood Cliffs, NJ: Prentice-Hall, 1981, p. 171. Reprinted with permission of Prentice-Hall.

c

1. What logical conclusion can be drawn about the cost of energy?
  - a. Energy costs play a large part in family budgets.
  - b. Energy costs are increasing steadily.
  - c. A rise in gasoline prices affects rich families less than it affects poor families.
  - d. We must develop alternate sources of energy.

d

2. Which of the following statements expresses an opinion rather than a fact?
  - a. For families in the lowest ten percent of households, energy costs account for a full third of household expenditures.
  - b. For households in the top ten percent, energy absorbs only five percent of household expenses.
  - c. Paying for energy in its various forms, from electricity to heat to gasoline, plays a larger part in the budget of poor families than well-to-do families.
  - d. Indeed, paying for energy presents a significant challenge for poor families.

This paragraph comes from a music appreciation textbook:

During the 1980s and 1990s, women performers had a powerful impact on rock music. “Many new women rockers do a lot more than sing,” observed one critic. “They play their own instruments, write their own songs, and they control their own careers.” Their range of musical styles extended from pop and soul to funk, new wave, country rock, and heavy metal. Leading performers included Pat Benatar, Tina Turner, Madonna, Alanis Morissette, Sheryl Crow, Queen Latifah, Shania Twain, and Ani DiFranco.

*Source:* Roger Kamien, *Music: An Appreciation*, 10e, p. 517. Copyright © 2011 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.

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d

3. Which of the following statements expresses an opinion rather than a fact?
- Women rockers play their own instruments and write their own songs.
  - The range of musical styles of female rockers extended from pop and soul to funk, new wave, country rock, and heavy metal.
  - Female rock performers included Pat Benatar, Tina Turner, Madonna, Alanis Morissette, Sheryl Crow, Queen Latifah, Shania Twain, and Ani DiFranco.
  - During the 1980s and 1990s, women performers had a powerful impact on rock music.

This excerpt is from an environmental science textbook:

On August 29, 2005, Hurricane Katrina came ashore on the U.S. Gulf Coast between Mobile, Alabama, and New Orleans, Louisiana. It was an enormous and frightening hurricane that ultimately caused tremendous property damage as well as the loss of many human lives. Hurricane Katrina was just one of the 26 named storms that hit the Americas in the worst Atlantic hurricane season in history. A few hours after the hurricane made landfall, the combination of the storm surge and the torrential rain falling inland overwhelmed levees that were supposed to protect New Orleans. Up to 80 percent of the city flooded. Close to 1,000 people died in Louisiana alone, with most of those deaths occurring in New Orleans. Mandatory evacuation orders were issued for New Orleans' 500,000 residents in the days that followed the storm.

The devastation caused by Hurricane Katrina starkly illustrated the way in which environmental destruction can cause hardships for people. Twenty-eight percent of New Orleans residents lived below the poverty line. Information about the hurricane and about evacuation options was harder for the city's poorer residents to access. Compounding the problem, a large number of these poorer households did not own cars. Without a car, a driver's license, or a credit card, even a timely evacuation order can be extremely hard to obey. As Hurricane Katrina battered the city, many residents were essentially left behind, forced to flee to crowded and unsanitary temporary shelters like the New Orleans Superdome.

*Source:* Adapted from Eldon D. Enger and Bradley F. Smith, *Environmental Science: A Study of Interrelationships*, 12e, p. 24. Copyright © 2010 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.

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c

4. Which of the following statements expresses an opinion rather than a fact?
- On August 29, 2005, Hurricane Katrina came ashore on the U.S. Gulf Coast between Mobile, Alabama, and New Orleans, Louisiana.
  - Mandatory evacuation orders were issued for New Orleans' 500,000 residents in the days that followed the storm.
  - It was an enormous and frightening hurricane that ultimately caused tremendous property damage as well as the loss of many human lives.
  - Twenty-eight percent of New Orleans residents lived below the poverty line.



d

5. Which of the following statements is a fact?
- The devastation caused by Hurricane Katrina was shocking, and starkly illustrated the way in which environmental destruction can cause hardships for people.
  - It was an enormous and frightening hurricane that ultimately caused tremendous property damage as well as the loss of many human lives.
  - Without a car, a driver's license, or a credit card, even a timely evacuation order can be extremely hard to obey.
  - Mandatory evacuation orders were issued for New Orleans' 500,000 residents in the days that followed the storm.

c

6. Based on the information in the passage, which of the following is an inference that can be made about residents of New Orleans?
- In the days following the storm, residents were issued mandatory evacuation orders.
  - Twenty-eight percent of New Orleans residents lived below the poverty line.
  - Many poorer residents were unable to obey the evacuation order.
  - Many residents throughout the city elected to remain in their homes and hoped that the levees would protect the city from flooding.

b

7. Which of the following is a logical conclusion that can be drawn about Hurricane Katrina?
- Hurricane Katrina was not predicted.
  - Hurricane Katrina was particularly hard on poorer citizens.
  - Mandatory evacuation orders should have been issued after Hurricane Katrina hit.
  - Hurricane Katrina was the largest and most destructive tropical storm in recorded history.

This excerpt is from a government textbook:

One of the most sensitive and controversial issues regarding gay and lesbian rights has been the legalization of same-sex marriages. The issue gained heightened attention in 1993 when the Supreme Court of Hawaii ruled that denying marriage licenses to gay couples might violate the equal protection clause of their state constitution. Other states then began to worry that under the "full faith and credit clause" of the United States Constitution, they might be forced to accept the legality of same-sex marriages performed in Hawaii—or any other state that chose to legalize same-sex marriage. Opponents advocated state laws banning same-sex marriages, and a number of states enacted such laws. In 1996, Congress passed the Defense of Marriage Act, which prohibits federal recognition of gay and lesbian couples and allows state governments to ignore same-sex marriages performed in other states.

The issue ignited again in 1999 when the Supreme Court of Vermont ruled that gay couples are entitled to the same benefits of marriage as heterosexual couples. The next year, the Vermont legislature passed a statute permitting homosexual



## TEST YOUR UNDERSTANDING

### Thinking Critically, Part 2

*Directions:* Read these paragraphs carefully and answer the questions that follow them. Write your answers in the spaces provided.

This paragraph comes from a music appreciation textbook:

During the last two centuries, more music has been written for the piano than for any other solo instrument. The piano is exceptionally versatile. A pianist can play many notes at once, including both a melody and its accompaniment. The piano commands a wide range of pitches. Its eighty-eight keys span more than seven octaves. The dynamic range is broad, from a faint whisper to a powerful fortissimo. The piano has exceptional and dynamic flexibility. The Italians named it *pianoforte* (meaning *soft-loud*).

*Source:* Adapted from Roger Kamien, *Music: An Appreciation*, 10e, p. 25. Copyright © 2011 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.

1. Locate two sentences in the paragraph that represent facts and write them here:

- During the last two centuries, more music has been written for the piano than for any other solo instrument.
- Its eighty-eight keys span more than seven octaves.

2. Locate two sentences in the paragraph that represent opinions and write them here:

- The piano is exceptionally versatile. (judgment words—exceptionally versatile)
- The piano has exceptional and dynamic flexibility. (judgment words—exceptional and dynamic)

This paragraph comes from an information technology textbook:

**Webmasters** develop and maintain Web sites and resources. The job may include backup of the company Web site, updating resources, or development of new resources. Webmasters are often involved in the design and development of the Web site. Some Webmasters monitor traffic on the site and take steps to encourage users to visit the site. Webmasters also may work with marketing personnel to increase site traffic and may be involved in development of Web promotions. Employers look for candidates with a bachelor's degree in computer science or information systems and knowledge of common programming languages and Web development software. Knowledge of HTML is considered essential. Those with experience using Web authoring software and programs like Adobe Illustrator and Adobe Flash are often preferred. Good communication

and organizational skills are vital to this position. Webmasters can expect to earn an annual salary of \$49,500 to \$82,500. This position is relatively new in many corporations and tends to have fluid responsibilities. With technological advances and increasing corporate emphasis on Web presence, experience in this field could lead to managerial opportunities.

*Source:* Adapted from Timothy J. O’Leary and Linda I. O’Leary, *Computing Essentials 2012: Making IT Work for You*, p. 53. Copyright © 2012 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.

3. Two college graduates are candidates for the same webmaster position. Their credentials are the same, but only one has experience using Web authoring software. Based on information in the passage, write a logical inference that can be made about *which candidate is more likely to get the job*.

*The candidate with experience using Web authoring software is more likely to get the job. (based on the information that “those with experience using Web authoring software are often preferred”)*

4. Based on information in the passage, what can logically be concluded about *the preparation needed to become a successful webmaster?*

*To become a webmaster requires the development of many skills and qualities. OR It takes several years to develop the skills needed in order to be a successful webmaster. OR The best preparation for someone who wants a career as a webmaster is to obtain a college degree in a relevant field to gain experience with programming languages and Web authoring software, and to work to develop strong communication and organizational skills.*

This paragraph comes from a U.S. history textbook:

### Postwar Computer Technology

The first significant computer of the 1950s was the Universal Automatic Computer, or UNIVAC. It was developed initially for the U.S. Bureau of Census by the Remington Rand Company. The UNIVAC was the first computer to be able to handle both alphabetical and numerical information. It used tape storage and could perform calculations and other functions much faster than its predecessor, the ENIAC, developed in 1946 by the same researchers at the University of Pennsylvania who were responsible for the UNIVAC. Searching for a larger market than the U.S. Bureau of the Census for their very expensive new device, Remington Rand arranged to use a UNIVAC to predict the results of the 1952 election for CBS television news. It would, the developers at Remington Rand believed, produce valuable publicity for the

machine. Analyzing early voting results, the UNIVAC accurately predicted an enormous landslide victory for Eisenhower over Stevenson. Most Americans had never heard of a computer before that night, and the UNIVAC's television debut increased public awareness of computer technology.

Source: Adapted from Alan Brinkley, *American History: Connecting with the Past*, 14e, p. 784. Copyright © 2012 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.

5. Locate two sentences in the paragraph that represent facts and write them here:

- *It was developed initially for the U.S. Bureau of the Census by the Remington Rand Company.*
- *The UNIVAC was the first computer to be able to handle both alphabetical and numerical information.*

6. Locate two sentences in the paragraph that represent opinions and write them here:

- *The first significant computer of the 1950s was the Universal Automatic computer, or UNIVAC. (judgment word—significant)*
- *It would, the developers at Remington Rand believed, produce valuable publicity for the machine. (would produce—future event; believed, valuable)*

This paragraph comes from an economics textbook:

A **monopoly** exists when a single firm is the sole producer of a product for which there are no close substitutes. Examples of pure monopoly are relatively rare, but there are many examples of less pure forms. In most cities, government-owned or government-regulated public utilities—natural gas and electric companies, the water company, the cable TV company, and the local telephone company—are all monopolies, or virtually so. There are also many “near monopolies” in which a single firm has the bulk of sales in a specific market. Intel, for example, produces 80 percent of the central microprocessors used in personal computers. First Data Corporation, via its Western Union subsidiary, accounts for 80 percent of the market for money order transfers. Wham-O, through its Frisbee brand, sells 90 percent of plastic throwing discs. The DeBeers diamond syndicate effectively controls 55 percent of the world's supply of rough-cut diamonds. Some monopolies are geographic in nature. For example, a small town may be served by only one airline or railroad. In a small, isolated community, the local barber shop, dry cleaner, or grocery store may approximate a monopoly.

Source: Adapted from Campbell R. McConnell, Stanley L. Brue, and Sean M. Flynn, *Economics: Principles, Problems, and Policies*, 19e, p. 195. Copyright © 2012 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.

✓ **Teaching Tip**

In the last sentence, *approximate* is a verb. The “a” is the last syllable and is a long a.

7. Based on the information in this passage, write a logical conclusion about *firms that are “near monopolies.”*

*Firms that are “near monopolies” have less competition and therefore have an advantage over other firms.*

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8. Based on information in the passage, what can logically be inferred about *the type of monopoly that might be most likely to draw competitors: pure monopolies, “near monopolies,” or geographic monopolies?*

*Geographic monopolies are the most likely to draw competitors because all a competitor would have to do is open a business nearby.*

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This paragraph comes from a biology textbook:

**Apes**

Apes evolved from their anthropoid ancestors. The apes living today consist of the gorilla (genus *Gorilla*), chimpanzee (*Pan*), gibbon (*Hylobates*), and orangutan (*Pongo*). Apes have larger brains than monkeys, and they lack tails. With the exception of the gibbon, apes are larger than any monkey. Apes exhibit the most adaptable behavior of any mammal except human beings. Once widespread in Asia and Africa, there are fewer apes today. No apes ever occurred in North or South America.

*Source:* Adapted from George B. Johnson, *The Living World: Basic Concepts*, 4e, p. 488. Copyright © 2006 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.

9. Locate two sentences in the paragraph that represent facts and write them here:

*(Accept any two sentences since the paragraph consists of entirely factual statements.)*

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10. Locate any sentences in the paragraph that represent opinions and write them here:

*(All the sentences in this paragraph are facts that can be proved by research and objective evidence.)*

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SELECTION 9.1  
Government

**Poverty in America and Improving Social Welfare through Public Education**

From *The American Democracy*  
by Thomas E. Patterson

SELECTION 9.1

✓ **Timely Words**

*Advocate*—one who argues for a cause; a proponent, supporter, or defender.

*Opponent*—one who opposes others, as in a contest, debate, or argument.

✓ **Timely Words**

“We the people of the United States, in order to form a more perfect Union, establish justice, insure domestic tranquility, provide for the common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution for the United States of America.” (Preamble, U.S. Constitution)

“Education is our passport to the future, and tomorrow belongs to the people who prepare for it now.” (Malcolm X)



Internet Resources

**Prepare Yourself to Read**

*Directions:* Do these exercises *before* you read Selection 9.1.

1. First, read and think about the title. What comes to mind when you think about the term *social welfare*?

(Answers will vary.)

2. Next, complete your preview by reading the following:

Introduction (in *italics*)

All of the first paragraph (paragraph 1)

Headings

Terms in **bold** print

Now that you have completed your preview, what does this selection seem to be about?

(Answers may vary.)

3. **Build your vocabulary as you read.** If you discover an unfamiliar word or key term as you read the selection, try to determine its meaning by using context clues.

**Read More about This Topic Online**

Use a search engine, such as Google or Yahoo!, to expand your existing knowledge about this topic *before* you read the selection or to learn more about it *afterward*. If you are unfamiliar with conducting Internet searches, read pages 25–26 on Boolean searches. You can also use Wikipedia, the free online encyclopedia, at [www.wikipedia.com](http://www.wikipedia.com). Keep in mind that when you visit any website, it is a good idea to evaluate the site and the information it contains. Ask yourself questions such as “Who sponsors this website?” and “Is the information it contains up to date?”



### SELECTION 9.1: POVERTY IN AMERICA AND IMPROVING SOCIAL WELFARE THROUGH PUBLIC EDUCATION

In 2012, the poverty line for a family of four was \$23,000 (total yearly income). At the end of 2011, 49 million Americans (16 percent) were living below the poverty line. Moreover, it is estimated that nearly 60 percent of Americans will spend at least one year below the poverty line. How is it that the wealthiest country in the world has so many of its citizens living in poverty? What should be done to improve the economic condition of millions of American families, and why are there such strong disagreements about ways to remedy this situation? This selection from a U.S. government textbook examines the problem of poverty in our nation and describes how our public education system was created to provide “equality of opportunity” and, ultimately, to improve the welfare of its citizens.

## Social Welfare Policy

- In the broadest sense, social welfare policy includes any effort by government to improve social conditions. In a narrower sense, however, social welfare policy refers to those efforts by government to help individuals meet basic human needs, including food, clothing and shelter.

## The Poor: Who and How Many?

- Americans’ social welfare needs are substantial. Although Americans are far better off economically than most of the world’s peoples, poverty is a significant and persistent problem in the United States. The government defines the **poverty line** as the annual cost of a thrifty food budget for an urban family of four, multiplied by three to include the cost of housing, clothes, and other necessities. Families whose incomes fall below that line are officially considered poor. In 2005, the poverty line was set at an annual income of roughly \$19,000 for a family of four. One in nine Americans—roughly thirty million people, including more than ten million children—lives below the poverty line. If they could all join hands, they would form a line stretching from New York to Los Angeles and back again.
- America’s poor include individuals of all ages, races, religions, and regions, but poverty is concentrated among certain groups. Children are one of the largest groups of poor Americans. One in every five children lives in poverty. Most poor children live in single-parent families, usually with the mother. In fact, a high proportion of Americans residing in families headed by divorced, separated, or unmarried women live below the poverty line. (See *Figure 1*.) These families are at a disadvantage because most women earn less than men for comparable work, especially in nonprofessional fields. Women without higher education or special skills often cannot find jobs that pay significantly more than

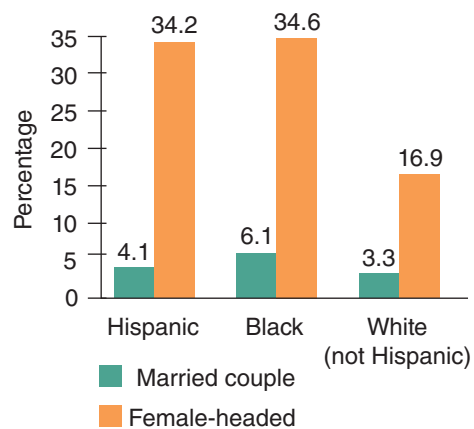
### Annotation Practice Exercises

*Directions:* For each of the exercises below, think critically to answer the questions. This will help you gain additional insights as you read.

### Practice Exercise

Does the author present a statement of *fact* or *opinion* in the first sentence of paragraph 2?

*opinion; “substantial”*



**Figure 1**  
**Percentage of Families Living in Poverty, by Family Composition and Race/Ethnicity**

Poverty is far more prevalent among female-headed households and African American and Hispanic households.

Source: U.S. Bureau of the Census, 2004.

the child-care expenses they incur if they work outside the home. Single-parent, female-headed families are roughly five times as likely as two-income families to fall below the poverty line, a situation referred to as “the feminization of poverty.”

- 4 Poverty is also widespread among minority-group members. Compared with whites, significantly more African Americans and Hispanics live below the poverty line.
- 5 Poverty is also geographically concentrated. Although poverty is often portrayed as an urban problem, it is somewhat more prevalent in rural areas. About one in seven rural residents—compared with one in nine urban residents—lives in a family with income below the poverty line. The urban figure is misleading, however, in that the poverty rate is very high in some inner-city areas. Suburbs are the safe haven from poverty. Because suburbanites are far removed from it, many of them have no sense of the impoverished condition of what Michael Harrington called “the other America.”
- 6 The “invisibility” of poverty in America is evident in polls showing that most Americans greatly underestimate the number of poor in their country. Certainly nothing in the daily lives of many Americans or in what they see on television would lead them to think that poverty rates are uncommonly high. Yet the United States has the highest level of poverty among the advanced industrialized nations, and its rate of child poverty is roughly twice the average rate of the others. (See Figure 2.)

### Practice Exercise

Does the author present a statement of *fact* or *opinion* in the first sentence of paragraph 5?

fact

### Practice Exercise

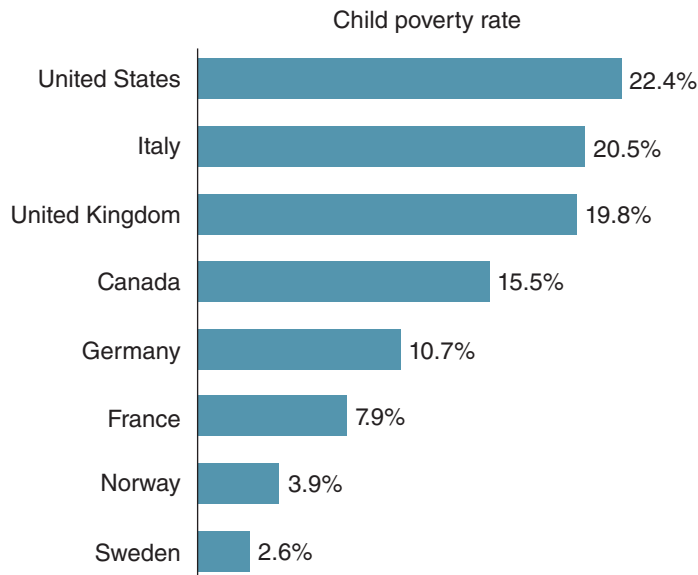
What logical *conclusion* does the author want you to draw about the number of Americans living in poverty?

More needs to be done to raise public awareness about the large number of Americans who are living in poverty.

**Figure 2**  
**Children Living in Poverty**

The United States has the highest child poverty rate among industrialized nations. One in five American children lives in poverty; in most other industrialized nations, fewer than one in ten do so.

Source: Department of Health and Human Services, 2003. Period of change is January 1993 to March 1999.



## Living in Poverty: By Choice or Chance?

7 Many Americans hold to the idea that poverty is largely a matter of choice—that most low-income Americans are unwilling to make the effort to hold a responsible job and get ahead in life. In his book *Losing Ground*, Charles Murray argues that America has a permanent underclass of unproductive citizens who prefer to live on welfare and whose children receive little educational encouragement at home and grow up to be copies of their parents. There are, indeed, many such people in America. They number in the millions. They are the toughest challenge for policymakers because almost nothing about their lives equips them to escape from poverty and its attendant ills.

8 Yet most poor Americans are in their situations as a result of circumstance rather than choice. A ten-year study of American families by a University of Michigan research team found that most of the poor are poor only for a while and that they are poor for temporary reasons such as the loss of a job or desertion by the father. When the U.S. economy goes into a tailspin, the impact devastates many families. The U.S. Department of Labor reported that three million jobs were lost in the manufacturing sector alone during the recessionary period that began in 2000.

9 It is also true that a full-time job does not guarantee that a family will rise above the poverty line. A family of four with one employed adult who works forty hours a week at seven dollars an hour (roughly the minimum wage level) has an annual income of about \$14,500, which is well below the poverty line. Millions of Americans—mostly household workers, service workers, unskilled laborers, and farm workers—are in this position. The U.S. Bureau of Labor Statistics estimates that roughly 7 percent of full-time workers do not earn enough to lift their family above the poverty line.

## Education as Equality of Opportunity: The American Way

10 Economic security has a higher priority in European democracies than in the United States. European democracies have instituted programs such as government-paid health care for all citizens, compensation for all unemployed workers, and retirement benefits for all elderly citizens. The United States provides these benefits only to some citizens in each category. For example, not all elderly Americans are entitled to social security benefits. If they paid social security taxes for a long enough period when they were employed, they (and their spouses) receive benefits. Otherwise they do not, even if they are in dire economic need.

### Practice Exercise

What *controversial topic* does the author present in paragraph 7?

*whether poverty is a matter of choice or chance (heading)*

### ✓ Teaching Tip

Refer students to Review Card 7 on page 632 to review the steps for evaluating an author's argument. Point out to students that *identifying the issue* is the first step in this process, and that they should ask themselves, "What controversial topic is this paragraph about?" Remind them that an *issue* is a topic that people have differing opinions about.

### Practice Exercise

Does the author present a statement of *fact* or *opinion* in the last sentence of paragraph 9?

*fact*

### ✓ Teaching Tip

It is a *fact* that this is the U.S. Bureau of Labor Statistics' estimate. Whether the estimate is accurate isn't the issue.

### Practice Exercise

Does the author present *facts*, *opinions*, or both in paragraph 10?

*facts*

- 11 Such policy differences between Europe and the United States stem from cultural and historical differences. Democracy developed in Europe in reaction to centuries of aristocratic rule, which brought the issue of economic privilege to the forefront. When strong labor and socialist parties then emerged as a result of industrialization, European democracies initiated sweeping social welfare programs that brought about greater economic equality. In contrast, American democracy emerged out of a tradition of limited government that emphasized personal freedom. Equality was a lesser issue, and class consciousness was weak. No major labor or socialist party emerged in America during industrialization to represent the working class, and there was no persistent and strong demand for welfare policies that would bring about a widespread sharing of wealth.
- 12 Americans look upon jobs and the personal income that comes from work as the proper basis of economic security. Rather than giving welfare payments to the poor, Americans prefer that the poor be given training and education so that they can learn to help themselves. This attitude is consistent with Americans' preference for **equality of opportunity**, the belief that individuals should have an equal chance to succeed on their own. The concept embodies *equality* in its emphasis on giving everyone a fair chance to get ahead. Yet equality of opportunity also embodies *liberty* because it allows people to succeed or fail on their own as a result of what they do with their opportunities. The expectation is that people will end up differently—some will be rich, some poor. It is sometimes said that equality of opportunity offers individuals an equal chance to become unequal.
- 13 In practice, equality of opportunity works itself out primarily in the private sector, where Americans compete for jobs, promotions, and other advantages. However, a few public policies have the purpose of enhancing equality of opportunity. The most significant of these policies is public education.

### Public Education: Enhancing Equality of Opportunity

- 14 During the first hundred years of our nation's existence, the concept of a free education for all children was a controversial and divisive issue. Wealthy interests feared that an educated public would challenge their power. The proponents of a more equal society wanted to use education as a means of enabling ordinary people to get ahead. This second view won out. Public schools sprang up in nearly every community and were open free of charge to all children who could attend.
- 15 Today, the United States invests more heavily in public education at all levels than does any other country. The curriculum in American schools is also relatively standardized. Unlike those countries

#### Practice Exercise

What logical *conclusion* does the author want you to draw about the concept of “equality of opportunity” and economic success or security?

Equality of opportunity does not guarantee economic success or security.

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#### Practice Exercise

What *controversial topic* does the author present in paragraph 14?

the concept of a free public education for all U.S. children

---

that divide children even at the grade school level into different tracks that lead ultimately to different occupations, the United States aims to educate all children in essentially the same way. Of course, public education is not a uniform experience for American children. The quality of education depends significantly on the wealth of the community in which a child resides.

16 Nevertheless, the United States through its public schools educates a broad segment of the population. Arguably, no country in the world has made an equivalent effort to give children, whatever their parents' background, an equal opportunity in life through education. Per pupil spending on public elementary and secondary schools is roughly twice as high in the United States as it is in Western Europe. America's commitment to broad-based education extends to college. The United States is far and away the world leader in terms of the proportion of adults receiving a college education.

17 The nation's education system preserves both the myth and the reality of the American dream. The belief that success can be had by anyone who works for it could not be sustained if the education system were tailored for a privileged few. And educational attainment is related to personal success, at least as measured by annual incomes. In fact, annual incomes of college graduates consistently exceed the incomes of those with only a high school diploma.

18 In part because the public schools play such a large role in creating an equal-opportunity society, they have been heavily criticized in recent years. Violence in public elementary and secondary schools is a major parental concern. So too is student performance on standardized tests. American students are not even in the top ten internationally in terms of their test scores in science or math.

19 Disgruntled parents have demanded changes in public schools, and these demands have led some communities to allow parents to choose the public school their children will attend. Under this policy, the schools compete for students, and those that attract the most students are rewarded with the largest budgets. A majority of Americans favor such a policy. Advocates of this policy contend that it compels school administrators and teachers to do a better job and gives students the option of rejecting a school that is performing poorly. Opponents of the policy say that it creates a few well-funded schools and a lot of poorly funded ones, yielding no net gain in educational quality. Critics also claim that the policy discriminates against poor and minority-group children, whose parents are less likely to be in a position to steer them toward the better schools.

20 An even more contentious issue than school choice is the voucher system issue. The voucher system allows parents to use tax dollars to send their children to private or parochial schools instead of public schools. The recipient school receives a voucher redeemable from the government, and the student receives a corresponding

✓ **Teaching Tip**

See the bar graph on page 43; it shows the salary comparison of high school graduates versus college graduates.

**Practice Exercise**

What *controversial topic* does the author present in paragraph 19?

whether parents should be allowed to  
choose the public school their children  
will attend

reduction in his or her tuition. Advocates claim that vouchers force failing schools to improve their instructional programs. Opponents argue that vouchers weaken the public schools by siphoning off both revenue and students. They also note that vouchers are of little value to students from poor families because they cover only part of the cost of attending a private or parochial school. (See *Figure 3*.)

- 21 The issue of school choice reflects the tensions inherent in the concept of equal opportunity. On one hand, competition between schools expands the number of alternatives available to students. On the other hand, not all students have a realistic opportunity to choose among the alternatives.

### Practice Exercise

What *controversial topic* does the author present in paragraph 20?

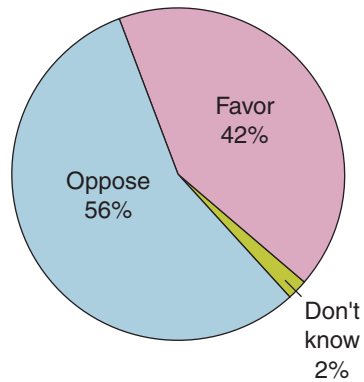
the voucher system

**Figure 3**

#### Opinions on School Vouchers

Americans are divided in their opinions on school vouchers.

Source: Lowell C. Rose and Alec M. Gallup, *The 35th Annual Phi Delta Kappan/ Gallup Poll of the Public's Attitudes Toward the Public Schools*. *Phi Delta Kappan*, September, 2003, pp. 29, 56. Reprinted by permission of Phi Delta Kappa International, Inc.



## SELECTION 9.1

**Government***(continued)***Reading Selection Quiz**

This quiz has several parts. Your instructor may assign some or all of them.

**Comprehension**

*Directions:* Use the information in the selection to answer each item below. You may refer to the selection as you answer the questions. Write each answer in the space provided.

- ¶1       b
- ¶2       c
- ¶s 3–5       c
- Figure 1  
(bar graph)       c
- Figure 2  
(bar graph)       b
- In a specific sense, social welfare policy refers to the efforts of our government to:
    - improve the conditions in our society.
    - help people meet basic human needs, including shelter, clothing, and food.
    - eliminate poverty.
    - provide Americans with equal opportunities.
  - In 2005, the poverty line annual income for a family of four was set at about:
    - \$9,000.
    - \$12,000.
    - \$19,000.
    - \$24,000.
  - Which of the following is an *incorrect* statement about poverty in America today?
    - One in every five children lives in poverty.
    - Single-parent, female-headed families are more likely to fall below the poverty line than two-income families.
    - More whites than Hispanics and African Americans live below the poverty line.
    - Poverty is somewhat more prevalent in rural areas than in urban areas.
  - According to the information presented in the bar graph and accompanying caption in Figure 1, poverty is:
    - more prevalent in married-couple households.
    - the most urgent problem facing the United States.
    - more prevalent in female-headed households.
    - likely to affect all minority-group families.
  - According to information in Figure 2, the child poverty rate in the United States is:
    - more than 50 percent.
    - about 22 percent.



- ¶12          c
- c. 7 percent.  
    d. less than 3 percent.
- ¶12          c          **6.** The American concept of *equality of opportunity* is the belief that:
- a. all people are basically the same.  
    b. everyone in the United States deserves economic equality.  
    c. individuals should have an equal chance to succeed on their own.  
    d. no one in the United States should live in poverty.
- ¶s 15–16          d
- ¶s 15–16          d          **7.** An example of evidence that supports the United States' commitment to providing public education for the purpose of enhancing equality of opportunity would be:
- a. The United States invests more heavily in public education at all levels than does any other country.  
    b. The public education system in the United States is tailored for children and young adults, regardless of their parents' background.  
    c. Per pupil spending on public elementary and secondary schools is roughly twice as high in the United States as it is in Western Europe.  
    d. all of the above
- ¶19          b
- ¶19          b          **8.** Today a majority of Americans support:
- a. a voucher system.  
    b. public school choice.  
    c. standardized tests.  
    d. a tracking system.
- ¶20          a
- ¶20          a          **9.** Opponents of the voucher system claim that the system:
- a. weakens public schools by reducing revenues and the number of students.  
    b. reduces the number of alternatives available to students.  
    c. forces failing schools to change their instructional programs.  
    d. creates a few well-funded schools and many poorly funded ones.
- ¶s 13, 16, 17          d
- ¶s 13, 16, 17          d          **10.** It can be inferred that public education in the United States:
- a. can help lift people out of poverty.  
    b. benefits a broad segment of the population.  
    c. enhances equality of opportunity.  
    d. all of the above

## SELECTION 9.1

**Government***(continued)***Vocabulary in Context**

*Directions:* For each item below, use context clues to deduce the meaning of the *italicized* word. Be sure the answer you choose makes sense in both sentences. Write each answer in the space provided.

12               *d*

11. Americans' social welfare needs are *substantial*.

When Joe began college, he was surprised to discover that each of his courses required a *substantial* amount of reading and writing.

**substantial** (səb stān' shəl) means:

- a. having substance; material
- b. related to poverty
- c. solidly built; strong
- d. large in amount or degree

12               *a*

12. Although Americans are far better off economically than most of the world's peoples, poverty is a significant and *persistent* problem in the United States.

Throughout her childhood, Carmen was annoyed by *persistent* rumors about her parents' wreckless lifestyle.

**persistent** (pər sis' tənt) means:

- a. existing for a long time; continuing
- b. important; significant
- c. cruel; unkind
- d. bothered; troubled

13               *c*

13. These families are at a disadvantage because most women earn less than men for *comparable* work, especially in nonprofessional fields.

The cost of living in Boston is *comparable* to the cost of living in Chicago; both cities are expensive places to live.

**comparable** (kəm' pər ə bəl) means:

- a. different; opposite
- b. difficult; challenging
- c. similar; equivalent
- d. expensive; costly

✓ **Teaching Tip**

Point out that the accent is on the first syllable.

15               *b*

14. Although poverty is often portrayed as an urban problem, it is somewhat more *prevalent* in rural areas.

Today, violence is *prevalent* in movies and on network television.

**prevalent** (prēv' ə lənt) means:

- a. concentrated in urban and rural areas
- b. widely or commonly occurring or existing

- 17 c 15. In his book *Losing Ground*, Charles Murray *argues* that America has a permanent underclass of unproductive citizens who prefer to live on welfare and whose children receive little educational encouragement at home and grow up to be copies of their parents.

Our father routinely *argues* that without a good education, it will be difficult for us to obtain satisfying jobs and earn substantial incomes.

**argues** (är' gyōōz) means:

- a. quarrels constantly; disputes  
 b. pesters; nags  
 c. attempts to prove by reasoning; claims  
 d. explains in writing
- 110 a 16. If they paid social security taxes for a long enough period when they were employed, they (and their spouses) receive benefits. Otherwise they do not, even if they are in *dire* economic need.

Following the disastrous super storm Sandy, residents found themselves in *dire* need of basic necessities such as water, food, clothing, and shelter.

**dire** (dīr) means:

- a. urgent; desperate  
 b. expensive; difficult to obtain  
 c. basic; essential  
 d. deserving; entitled
- 114 c 17. The *proponents* of a more equal society wanted to use education as a means of enabling ordinary people to get ahead.

Recycling *proponents* want everyone to get into the habit of properly recycling all bottles, glass, paper, and plastic containers.

**proponents** (prə pō' nənts) means:

- a. officials; authorities  
 b. opponents; detractors  
 c. supporters; advocates  
 d. manufacturers; producers
- 115 a 18. Of course, public education is not a *uniform* experience for American children.

All McDonalds cheeseburgers have a *uniform* taste and appearance because they are made with the same ingredients and in the exact same way.

**uniform** (yōō' nə fōrm) means:

- a. always the same; unvarying
- b. similar in color and texture
- c. satisfying; fulfilling
- d. successful; productive

¶19

b

19. *Advocates* of this policy contend that it compels school administrators and teachers to do a better job and gives students the option of rejecting a school that is performing poorly.

Fitness *advocates* remind us to maintain a healthy diet and exercise regularly.

**advocates** (ăd' və kīts) means:

- a. those who argue against a cause; opponents
- b. those who argue for a cause; supporters
- c. those who reject an idea
- d. those who debate an issue

¶20

a

20. An even more *contentious* issue than school choice is the voucher system issue.

Human cloning, stem cell research, alternative medicine, and abortion are examples of *contentious* topics.

**contentious** (kən tēn' shəs) means:

- a. controversial
- b. important
- c. confusing
- d. difficult

## SELECTION 9.1

**Government***(continued)***Reading Skills Application**

*Directions:* These items test your ability to *apply* certain reading skills. You may not have studied all of the skills yet, so some items will serve as a preview. Write each answer in the space provided.

¶2

implied  
main idea  
(Chapter 5)

c

21. Which of the following sentences expresses the main idea of the second paragraph of this selection?

- a. If all the people living in poverty in the United States could join hands, they would form a line stretching from New York City to Los Angeles and back again.
- b. The United States will never be able to eliminate poverty completely.
- c. Americans' social welfare needs are substantial, and poverty is a significant and persistent problem in our nation.
- d. The poverty line is the annual cost of basic human needs for a family of four.

¶8  
authors'  
writing  
patterns  
(Chapter 7)

d

22. Which writing pattern did the author use to organize the main idea and supporting details in paragraph 8?

- list
- comparison-contrast
- sequence
- cause-effect

all ¶s  
author's  
purpose  
for writing  
(Chapter 8)

b

23. Which of the following best describes the author's purpose for writing this selection?

- to persuade readers that poverty is largely a matter of choice and to inform readers about ways to alleviate it
- to explain the nature of the problem of poverty in the United States and to illustrate how public education policy is designed to improve social welfare
- to instruct readers how to combat social inequity in the United States and how to reduce the number of children living in poverty
- to inform readers about the educational opportunities that exist in the United States today

Figure 2  
(bar graph)  
interpreting  
graphic  
material  
(Chapter 10)

b

24. Our nation has the highest child poverty rate among the advanced industrialized nations, but two countries that have child poverty rates almost as high as the United States are:

- France and Germany.
- Italy and the United Kingdom.
- Sweden and Norway.
- China and Japan.

¶12  
distinguishing  
facts from  
opinions  
(Chapter 9)

a

25. Which of the following expresses an opinion rather than a fact?

- All individuals should have an equal chance to succeed on their own.
- If individuals paid social security for a long enough period when they were employed, they (and their spouses) receive benefits.
- Spending on public schools is roughly twice as high in the United States as it is in Europe.
- America's poor include individuals of all ages, races, religions, and regions.

## SELECTION 9.1

### Government

(continued)

## Respond in Writing

*Directions:* Refer to the selection as needed to answer the essay-type questions below. (Your instructor may direct you to work collaboratively with other students on one or more items. Each group member should be able to explain *all* of the group's answers.)

1. The author explains that our system of public education was designed to benefit individuals in many ways. List at least four of these ways.

- *Designed to help people learn to help themselves and succeed on their own* ¶12
- *Enables ordinary people to get ahead* ¶14
- *Aims to educate all children in essentially the same way* ¶15
- *Serves a broad segment of our population* ¶16
- *The U.S. is a world leader in terms of proportion of adults receiving a college education.* ¶16
- *The more education a person has, the higher the person's income is likely to be.* ¶17
- *Helps to create an equal-opportunity society* ¶18

2. In paragraph 19, the author presents what both the advocates and the opponents have to say about the issue of public school choice, the policy that allows parents to choose the public school their children will attend. What is your position on this issue? Explain why you support or oppose public school choice.

*(Answers will vary. See ¶19.)*

3. In paragraph 20, the author presents what both the supporters and detractors have to say about the issue of school vouchers, the policy that allows parents to use tax dollars to send their children to private or parochial schools instead of public schools. What is your position on this issue? Explain why you support or oppose the voucher system.

*(Answers will vary. See ¶20.)*

4. **Overall main idea.** What is the overall main idea the author wants the reader to understand about the relationship between poverty and public education? Answer this question in one sentence. Be sure to include the words *poverty* and *public education* in your overall main idea sentence.

Poverty is a significant problem in our nation, but our system of public education can improve social welfare and promote equality of opportunity.

OR

Poverty is a significant and persistent problem in our nation, but because our system of public education is designed to benefit a broad segment of our population, it can improve social welfare and promote equality of opportunity.





SELECTION 9.2  
Health

**Your Financial Wellness**

From *Connect Core Concepts in Health*  
by Paul Insel and Walton Roth

**Prepare Yourself to Read**

*Directions:* Do these exercises *before* you read Selection 9.2.

1. First, read and think about the title. What comes to mind when you read the phrase *financial wellness*?

(Answers will vary.)

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2. Next, complete your preview by reading the following:

Introduction (in *italics*)

Headings

Words in **bold print**

Now that you have completed your preview, what does this selection seem to be about?

(Answers may vary.)

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3. **Build your vocabulary as you read.** If you discover an unfamiliar word or key term as you read the selection, try to determine its meaning by using context clues.

**Read More about This Topic Online**

Use a search engine, such as Google or Yahoo!, to expand your existing knowledge about this topic *before* you read the selection or to learn more about it *afterward*. Use search terms such as “financial wellness” or “managing your money.” If you are unfamiliar with conducting Internet searches, read pages 25–26 on Boolean searches. You can also use Wikipedia, the free online encyclopedia, at [www.wikipedia.com](http://www.wikipedia.com). Keep in mind that when you visit any website, it is a good idea to evaluate the site and the information it contains. Ask yourself questions such as “Who sponsors this website?” and “Is the information it contains up to date?”

✓ **Timely Word**

*compound interest*—interest paid on both the principal and on accrued interest (§110).

SELECTION 9.2



Internet Resources

## SELECTION 9.2: YOUR FINANCIAL WELLNESS

*Wellness is a term that is often used to refer to a person's health, fitness, and lifestyle activities. And there are, indeed, many dimensions of wellness: physical wellness, emotional wellness, intellectual wellness, interpersonal wellness, spiritual wellness, and environmental wellness. But have you ever considered assessing your financial wellness? In this selection from a health textbook, the authors explain the basic elements of financial wellness and discuss how you can become financially "healthy."*

- 1 With the news full of stories of home mortgage foreclosures, credit card debt, and personal bankruptcies, it has become painfully clear that many Americans do not know how to manage their finances. Are such stressful experiences inevitable in today's world? Not at all. You can avoid them—and gain financial peace of mind—by developing the skills that contribute to financial wellness.
- 2 What exactly is financial wellness? Basically, it means having a healthy relationship with money. It involves such skills as knowing how to manage your money, using self-discipline to live within your means, using credit cards wisely, staying out of debt, meeting your financial obligations, having a long-range financial plan, and saving. It also includes managing your emotional relationship with money and being in charge of your financial decisions. If you haven't developed these skills yet, now is the time to start.

### Learn to Budget

- 3 Although the word "budget" may conjure up thoughts of deprivation, a budget is really just a way of tracking where your money goes and making sure you're spending it on the things that are most important to you. Basic budgeting worksheets are available online, but you can also just use a notebook with lined paper. On one page, list your monthly income by source (for example, job, stipend, or parental aid), and on another, list your expenditures. If you're not sure where you spend your money, track your expenditures for a few weeks or a month. Then organize them into categories, such as housing (rent, utilities), food (groceries, eating out), transportation (car, insurance, parking, public transportation), entertainment

#### Annotation Practice Exercises

*Directions:* For each of the exercises below, think critically to answer the questions. This will help you gain additional insights as you read.

#### Practice Exercise

Do the authors present a statement of *fact* or *opinion* in the last sentence of paragraph 2?

opinion



The best way to avoid credit card debt is to have just one card, to use it only when necessary, and to pay off the entire balance every month.

(movies, music, cable TV, parties), services (cell phone, Internet service provider), personal care (haircuts, cosmetics), clothes, books and school supplies, health, credit card/loan payments, and miscellaneous. These are suggestions—use categories that reflect the way you actually spend your money. Knowing where your money goes is the first step in gaining control of it.

- 4 Now total your income and expenditures. Are you taking in more than you spend, or are you spending more than you're taking in? Are you spending your money where you want to spend it, or are you surprised by your spending patterns? Use what you find out to set guidelines and goals for yourself. If your expenditures exceed your income, identify where you can begin to make some cuts. If morning lattes are adding up, consider making coffee at home. If you have both a cell phone and a land line, consider whether you can give one up. If you're spending money on movies and restaurants, consider less expensive options like having a game night with friends or organizing a potluck.
- 5 Be realistic about what you can cut, but also realize that you may have to adjust your mind-set about what you can afford. Once you have a balance between income and expenses, don't stop. Try to have a little bit left over each month for an emergency fund or savings. You may be surprised by how much peace of mind you can gain by living within your means.

### Be Wary of Credit Cards

- 6 College students are prime targets for credit card companies, and most undergraduates have at least one card. A 2009 report found that college students use credit cards to live beyond their means, not just for convenience. According to the report, half of all students have four or more cards, and the average outstanding balance on undergraduate credit cards was \$3,173. Seniors graduated with an average credit card debt of \$4,100; nearly 20% of seniors carried balances of more than \$7,000. The report also found that 82% of college students carried balances on their credit cards and thus incurred finance charges each month.
- 7 The best way to avoid credit card debt is to have just one card, to use it only when necessary, and to pay off the entire balance every month. Make sure you understand terms like APR (annual percentage rate—the interest you're charged on your balance), credit limit (the maximum amount you can borrow at any one time), minimum monthly payment (the smallest payment your creditor will accept each month), grace period (the number of days you have to pay your bill before interest, late fees, or other penalties are charged), and over-the-limit fees (the amount you'll be charged if your payment is

#### Practice Exercise

Does the author present a statement of *fact* or *opinion* in the first sentence of paragraph 5?

opinion (judgment word—realistic)

#### Practice Exercise

What logical *conclusion* can you draw about what college students should do if they have accumulated high outstanding balances on their credit cards?

They should find a way to pay more than just their minimum balances in order to avoid prolonging their debt and paying large amounts of interest.

#### Practice Exercise

Does the author present a statement of *fact* or *opinion* in the first sentence of paragraph 7?

opinion (judgment word—best). It could be argued the best way is not to have even one credit card.

late or you go over your credit limit). Read the fine print on your statement! Banks make most of their money from fees.

### Get Out of Debt

- 8 If you do have credit card debt, stop using your cards and start paying them off. If you can't pay the whole balance, try to at least pay more than the minimum payment each month. Most people are surprised by how long it will take to pay off a loan by making only the minimum payments. For example, to pay off a credit card balance of \$2,000 at 10% interest with monthly payments of \$20 would take 203 months—17 years! By carrying a balance and incurring finance charges, you are also paying back much more than your initial loan—money you could be putting to other uses.
- 9 Some experts recommend choosing one card—the one with the largest balance or the highest interest—and paying off as much as you can every month. Others recommend paying off one or two cards with smaller balances to give yourself a sense of accomplishment and motivation to continue. Whatever your choice, if you have credit card debt, make it a priority to pay it off as soon as you can.

### Start Saving

- 10 The same miracle of compound interest that locks you into years of credit card debt can work to your benefit if you start saving early. An online compound interest calculator can be found by visiting [http://www.moneychimp.com/calculator/compound\\_interest\\_calculator.htm](http://www.moneychimp.com/calculator/compound_interest_calculator.htm).
- 11 Experts recommend “paying yourself first” every month. That is, putting some money into savings before you start paying your bills, depending on what your budget allows. You may want to save for a large purchase, like a car or a vacation, or you may even be looking ahead into retirement. If you work for a company with a 401(k) retirement plan, contribute as much as you can every pay period. Some companies match contributions up to a certain amount, so be sure you contribute at least that amount.

### Become Financially Literate

- 12 Modern life requires **financial literacy**. This means understanding everything from basics like balancing a checkbook to more sophisticated endeavors like developing a long-term financial plan. Unfortunately, a majority of Americans have not received any kind of education in financial skills. Even before the economic meltdown that began in 2008, the U.S. government had established the Financial Literacy and Education Commission ([www.MyMoney.gov](http://www.MyMoney.gov)) to help Americans understand the concept of financial literacy and learn how to save, invest, and manage their money better. The consensus is that developing lifelong financial skills should begin in early adulthood, during the college years, if not earlier.

#### Practice Exercise

What logical *conclusion* can you draw about what college students with a new credit card should do?

They should not only understand the terms and conditions on their statement, but also be careful to comply with the limits and due dates in order to avoid charges for interest, late fees, and penalties.

#### Practice Exercise

Does the author present a statement of *fact* or *opinion* in the first sentence of paragraph 10?

fact

#### Practice Exercise

What logical *conclusion* can you draw about the “financial literacy” of most Americans?

By teaching financial skills in early adulthood, the number of financially illiterate Americans can be reduced.

- 13 If you want to improve your financial literacy, a good way to start is to take a course in personal finance or financial management skills. There are also many magazines that focus on money management, and of course a wealth of information can be found online. Make it a priority to achieve financial wellness, and start now. Money may not buy you love, but having control over your money can buy you a lot of peace of mind.

Source: Adapted from Paul Insel and Walton Roth, *Connect Core Concepts in Health*, 12e, pp. 4–5. Copyright © 2012 by The McGraw-Hill Companies, Inc. Reprinted with permission of The McGraw-Hill Companies, Inc.

Additional sources: Federal Deposit Insurance Corporation. 2009. "Money Smart: A Financial Education Program" (<http://www.fdic.gov/consumers/consumer/moneysmart/young.html>; retrieved 10/21/10); Plymouth State University. 2009. "Financial Wellness" (<http://www.plymouth.edu/finaid/wellness/index.html>; retrieved 10/21/10); Sallie Mae. 2009. "How Undergraduate Students Use Credit Cards: Sallie Mae's National Study of Usage Rates and Trends," 2009 (<http://www.salliemae.com/NR/rdonlyres/0BD600F1-9377-46EA-AB1F-6061FC63246/10744SLMCreditCardUsageStudy41309FINAL2pdf>; retrieved 10/21/10); U.S. Financial Literacy and Education Commission. 2009. "Do You Want to Learn How to Save, Manage, and Invest Your Money Better?" (<http://www.mymoney.gov>; retrieved 10/21/10).

## SELECTION 9.2

**Health***(continued)***Reading Selection Quiz**

This quiz has several parts. Your instructor may assign some or all of them.

**Comprehension**

*Directions:* Use the information in the selection to answer each item below. You may refer to the selection as you answer the questions. Write each answer in the space provided.

*True or False*

- ¶3          T          1. According to the authors, a budget is really just a way of tracking where your money goes and making sure you're spending it on the things that are most important to you.
- ¶7          T          2. The annual percentage rate (APR) is the interest rate you are charged on your credit card balance.
- ¶7          F          3. Your credit card's *grace period* tells you how long it will take you to pay off your loan by making only the minimum payments.
- ¶11         T          4. If you work for a company with a 401(k) retirement plan that matches contributions up to a certain amount, you should contribute at least that amount.
- ¶16         T          5. A 2009 report found that 82% of college students carried balances on their credit cards and thus incurred finance charges each month.

*Multiple-Choice*

- ¶14         b          6. If your budget indicates that your expenditures are exceeding your income, you should:
- make sure you are spending your money where you want to spend it.
  - identify where you can begin to make some cuts.
  - have just one credit card and use it only when necessary.
  - pay your credit card bill before interest, late fees, or other penalties are charged.
- ¶15         d          7. When your budget has helped you achieve a balance between your income and your expenses, the authors suggest your next step should be to:
- track your expenditures for a few weeks or a month.
  - be sure to make the minimum monthly payment on each of your credit cards.
  - develop a long-term financial plan.
  - try to set aside a small amount each month for savings or for emergencies.

- 18     c     8. The authors explain that to pay off a credit card balance of \$2,000 at 10% interest with monthly payments of \$20 would take:
- 10 months.
  - 20 months.
  - 17 years.
  - 20 years.
- 18     c     9. If you have credit card debt and can't pay off the entire balance, the authors suggest that you should:
- be sure to make the minimum payment each month.
  - use only one credit card, and only for necessities.
  - try to at least pay more than the minimum payment each month.
  - adjust your spending patterns.
- 17     d     10. The best way to avoid credit card debt is to:
- have just one card and use it only when necessary.
  - pay off the entire balance every month.
  - understand the terms and conditions listed on your credit card bill.
  - all of the above

## SELECTION 9.2

**Health**  
*(continued)*
**Vocabulary in Context**

*Directions:* For each item below, use context clues to deduce the meaning of the *italicized* word. Be sure the answer you choose makes sense in both sentences. Write each answer in the space provided.

- 11     c     11. Are stressful experiences such as home mortgage foreclosures, credit card debt, and personal bankruptcies *inevitable* in today's world?
- It is *inevitable* that spring follows winter.
- inevitable** (ĩn ěv' ĩ tə bəl) means:
- likely to happen
  - uncertain
  - impossible to avoid or prevent
  - unreasonable
- 15     a     12. You may be surprised by how much peace of mind you can gain by living within your *means*.
- Because Carol lives within her *means*, she can afford to help her grandchildren with their school tuition.
- means** (mēns) means:
- money or other wealth you have
  - lifestyle you are accustomed to

- c. money spent on luxuries
- d. money obtained on credit

13

d

13. Although the word “budget” may *conjure* up thoughts of deprivation, a budget is really just a way of tracking where your money goes and making sure you’re spending it on the things that are most important to you.

For most Americans, Las Vegas *conjures* up an image of money, glitz, gambling, and fast living.

**conjure** (kɒn’ jər) means:

- a. to call or summon
- b. to confuse or make unclear
- c. to wish for
- d. to call or bring to mind

13

c

14. Although the word “budget” may conjure up thoughts of *deprivation*, a budget is really just a way of tracking where your money goes and making sure you’re spending it on the things that are most important to you.

Phillip’s sleep *deprivation* was caused by working from eight o’clock in the morning until midnight, six days a week.

**deprivation** (dēp’ rə vā’ shən) means:

- a. a removal of privileges
- b. a reduction
- c. the act of giving something up
- d. exhaustion

14

b

15. If your *expenditures* exceed your income, identify where you can begin to make some cuts.

Credit card *expenditures* for recreation, eating out, and other non-necessities can lead to unwanted and costly debt.

**expenditures** (ɪk spɛn’ də chərs) means:

- a. excesses
- b. amounts of money spent
- c. debts
- d. budgeted amounts

16

a

16. Be *wary* of credit cards.

Most parents teach their children to be *wary* of strangers.

**wary** (wâr’ ē) means:

- a. on guard; watchful
- b. using good judgment; smart



- c. overused; excessive
- d. causing trouble; dangerous

¶16

d

17. College students are *prime* targets for credit card companies, and most undergraduates have at least one card.

The bank robbery investigation was abandoned when the investigators failed to come up with any *prime* suspects.

**prime** (prīm) means:

- a. excellent in quality or value
- b. first in time or sequence; original
- c. to make ready; to prepare
- d. highest in degree; first in rank

¶12

c

18. This means understanding everything from basics like balancing a checkbook to more sophisticated *endeavors* like developing a long-term financial plan.

Mark is careful to set aside time for the two *endeavors* that are most important to him: spending time with his family and doing volunteer work.

**endeavors** (ĕn dĕv' ərs) means:

- a. complicated projects
- b. actions which have monetary value
- c. purposeful activities
- d. tasks requiring large amounts of time and energy

¶12

a

19. The *consensus* is that developing lifelong financial skills should begin in early adulthood, during the college years, if not earlier.

The committee immediately reached *consensus* that Sonia should be the chairperson.

**consensus** (kən sĕn' səs) means:

- a. general or widespread agreement
- b. recommendations from experts
- c. voting results
- d. a conclusion

¶16

d

20. According to the report, half of all students have four or more cards, and the average *outstanding* balance on undergraduate credit cards was \$3,173.

The bill for the wedding dress has been paid, but there is an *outstanding* charge for the alterations.

**outstanding** (out' stān' dīng) means:

- a. unpaid amount
- b. greater in value

- c. difficult to correct; challenging
- d. not settled or resolved

## SELECTION 9.2

**Health**

(continued)

**Reading Skills Application**

*Directions:* These items test your ability to *apply* certain reading skills. You may not have studied all of the skills yet, so some items will serve as a preview. Write each answer in the space provided.

¶6  
vocabulary  
in context  
(Chapter 2)

c

21. As used in paragraph 6 of this selection, *incurred* means:

- a. carried.
- b. avoided.
- c. acquired.
- d. borrowed.

¶2  
implied  
main idea  
(Chapter 5)

d

22. Which of the following sentences best expresses the main idea of paragraph 2?

- a. Financial wellness means managing your emotional relationship with money.
- b. Financial wellness involves using self-discipline to live within your means and using credit cards wisely.
- c. Financial wellness requires following a budget, staying out of debt, and having a long-range saving plan.
- d. Financial wellness results from developing a variety of specific skills that allow you to have a healthy relationship with money.

¶2  
authors'  
writing  
pattern  
(Chapter 7)

b

23. The information in paragraph 2 is organized using which of the following writing patterns?

- a. list
- b. definition
- c. sequence
- d. comparison-contrast

¶s 6, 7  
author's  
point of  
view  
(Chapter 8)

c

24. The authors would be likely to agree with which of the following statements?

- a. Credit cards should be used only for necessities such as food, transportation, services, clothing, and personal care.
- b. There is little that can be done about the problem of credit card debt among college students because they are prime targets for credit card companies.
- c. Too often, college students use credit cards to live beyond their means.
- d. Credit card debt and other stressful financial situations such as bankruptcies and mortgage foreclosures are inevitable in today's world.

¶12          b  
 distinguishing  
 facts from  
 opinions  
 (Chapter 9)

25. Which of the following expresses an opinion rather than a fact?
- This means understanding everything from basics like balancing a checkbook to more sophisticated endeavors like a long-term financial plan.
  - Unfortunately**, a majority of Americans have not received any kind of education in financial skills.
  - Even before the economic meltdown that began in 2008, the U.S. government had established the Financial Literacy and Education Commission to help Americans understand the concept of financial literacy and learn how to save, invest, and manage their money better.
  - The consensus is that developing lifelong financial skills should begin in early adulthood, during the college years, if not earlier.

SELECTION 9.2

**Health**  
 (continued)

**Respond in Writing**

*Directions:* Refer to the selection as needed to answer the essay-type questions below. (Your instructor may direct you to work collaboratively with other students on one or more items. Each group member should be able to explain *all* of the group’s answers.)

1. Create a “Top 10” list of strategies, techniques, or behaviors that you believe can help college students achieve the kind of financial wellness and “financial literacy” that the authors described. You may use some or all of the suggestions in the selection or include your own suggestions. (Item 1 on your list should be what you view as the *most* important contributor to financial wellness.)

1. (Answers will vary.) \_\_\_\_\_  
 \_\_\_\_\_
2. \_\_\_\_\_  
 \_\_\_\_\_
3. \_\_\_\_\_  
 \_\_\_\_\_
4. \_\_\_\_\_  
 \_\_\_\_\_
5. \_\_\_\_\_  
 \_\_\_\_\_
6. \_\_\_\_\_  
 \_\_\_\_\_
7. \_\_\_\_\_  
 \_\_\_\_\_

SELECTION 9.2

8. \_\_\_\_\_  
\_\_\_\_\_

9. \_\_\_\_\_  
\_\_\_\_\_

10. \_\_\_\_\_  
\_\_\_\_\_

- 2. The authors state, “College students are prime targets for credit card companies.” Explain why you think credit card companies target college students.

*(Answers will vary.)*  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- 3. List two or more things that are getting in the way of your financial wellness or contributing to your “financial illiteracy.”

*(Answers will vary.)*  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- 4. **Overall main idea.** What is the overall main idea the authors want the reader to understand about the concept of financial wellness? Answer this question in one sentence. Be sure to include the words *financial wellness* in your overall main idea sentence.

*Americans should develop their financial wellness in early adulthood by learning financial literacy skills such as budgeting, managing credit wisely, and saving.*  
\_\_\_\_\_  
\_\_\_\_\_

SELECTION 9.3

Environmental Science

Our Ecological Footprint: Do We Consume Too Much?

From *Environmental Science: A Study of Interrelationships*

by Eldon Enger and Bradley Smith

Prepare Yourself to Read

Directions: Do these exercises before you read Selection 9.3.

1. First, read and think about the title. What comes to mind when you read the phrase *ecological footprint*?

(Answers will vary.)

2. Next, complete your preview by reading the following:

Introduction (in *italics*)

Headings

Words in **bold** print

Now that you have completed your preview, what does this selection seem to be about?

(Answers may vary.)

3. **Build your vocabulary as you read.** If you discover an unfamiliar word or key term as you read the selection, try to determine its meaning by using context clues.

✓ Timely Word

*Ecological footprint* (figurative expression)—the area of the Earth’s productive land and water required to supply the resources that an individual demands as well as to absorb the wastes that the individual produces. (13)



Internet Resources

Read More about This Topic Online

Use a search engine, such as Google or Yahoo!, to expand your existing knowledge about this topic *before* you read the selection or to learn more about it *afterward*. Use search terms such as “ecological footprint” or “sustainable development.” If you are unfamiliar with conducting Internet searches, read pages 25–26 on Boolean searches. You can also use Wikipedia, the free online encyclopedia, at [www.wikipedia.com](http://www.wikipedia.com). Keep in mind that when you visit any website, it is a good idea to evaluate the site and the information it contains. Ask yourself questions such as “Who sponsors this website?” and “Is the information it contains up to date?”

### SELECTION 9.3: OUR ECOLOGICAL FOOTPRINT: DO WE CONSUME TOO MUCH?

*This selection comes from an environmental science textbook. Environmental science is a relatively new term for the study of interrelationships between humans and the natural world. Most of the concepts covered in environmental science courses today have previously been taught in ecology, conservation, biology, or geography courses. Environmental science is an applied science designed to help address and solve the challenges the world faces.*

*Authors Enger and Smith explain, “Environmental science is a subject that fosters new ways of thinking. We present a balanced view of issues. It is not the purpose of our textbook to tell readers what to think. Rather our goal is to provide access to information needed to understand complex issues, some of them controversial, so that readers can comprehend the nature of environmental problems and formulate their own points of view.”*

*In this selection, Professors Enger and Smith suggest that “human ingenuity,” that is, human cleverness and inventiveness, has the potential to help us solve or avoid many of the environmental challenges of the future.*

- 1 People of different cultures view their place in the world from different perspectives. Among the things that shape their views are religious understandings, economic pressures, geographic location, and fundamental knowledge of nature. Because of this diversity of backgrounds, different cultures put different values on the natural world and the individual organisms that compose it.
- 2 There are three common attitudes toward nature and the environment. The first is the development approach, which assumes that nature is for people to use for their own purposes. The second is the preservationist approach, which assumes that nature has value in itself and should be preserved intact. And the third is the conservational approach, which recognizes that we must use nature to meet human needs but encourages us to do so in a sustainable manner. Today, the conservationist approach is generally known as the “sustainable development” approach.

### Your Ecological Footprint

- 3 The concept of an **ecological footprint** has been developed to help individuals measure their environmental impact on the Earth. One’s ecological footprint is defined as “the area of the Earth’s productive land and water required to supply the resources that an individual demands as well as to absorb the wastes that the individual produces.” Websites exist that allow you to estimate your ecological footprint and to compare it to the footprint of others by answering a few questions about your lifestyle. Running through one of these exercises is a good way to gain a sense of personal responsibility for your own environmental impact. To learn more about ecological footprints, visit: <http://www.earthday.org/footprint-calculator>.

#### Annotation Practice Exercises

*Directions:* For each of the exercises below, think critically to answer the questions. This will help you gain additional insights as you read.



Do we in the Northern Hemisphere consume too much? Is our rate of consumption of food, energy, and water sustainable?

## Do We Consume Too Much?

- 4 In 1994, when delegates from around the world gathered in Cairo, Egypt, for the International Conference on Population and Development, representatives from developing countries protested that a baby born in the United States will consume during its lifetime at least 20 times as much of the world's resources as an African or Indian baby. The problem for the Earth's environment, they argued, is overconsumption in the Northern Hemisphere, not just overpopulation in the Southern Hemisphere. Do we in the Northern Hemisphere consume too much?
- 5 North Americans, who make up only 5 percent of the world's population, consume 25 percent of the world's oil. They use more water and own more cars than anybody else. They waste more food than most people in sub-Saharan Africa eat. It has been estimated that if the rest of the world consumed at the rate at which people in the United States consume, we would need five more planet Earths to supply the resources.
- 6 Ever since he wrote a book called *The Population Bomb* in 1968, ecologist Paul Ehrlich has argued that the American lifestyle is driving the Earth's ecosystem to the brink of collapse. But others, including the economist Julian Simon, have argued that Ehrlich couldn't be more wrong. It is not resources that limit economic growth and lifestyles, Simon insisted, but human ingenuity—the ability to find or create solutions to the challenges we face.
- 7 In 1980 Ehrlich and Simon wagered money on their opposing worldviews. They picked something easily measurable—the value of metals—to put their claims to the test. Ehrlich predicted that world economic growth would make copper, chrome, nickel, tin, and tungsten scarcer and thus drive the prices up. Simon argued that human ingenuity is always capable of finding technological fixes for scarcity and that the price of metals would go down. By 1990, all five metals had decreased in value. Simon had won the bet. Ehrlich claimed that the decrease in price was the result of a global recession. But Simon argued that the metals decreased in price because superior materials such as plastics, fiber optics, and ceramics had been developed to replace them. The Ehrlich-Simon argument is actually an old one, and despite the outcome of their bet, it remains unsettled. What do you think? Will human ingenuity solve our future challenges regarding our consumption of food, energy, water, and wild nature?

## Food

- 8 Two hundred years ago economist Thomas Malthus predicted that worldwide famine was inevitable as human population growth outpaced food production. In 1972, a group of scholars known as the Club of Rome predicted much the same thing for the last years of

### Practice Exercise

Do the authors present statements of *fact* or *opinion* in paragraph 5?

facts

### Practice Exercise

What logical *conclusion* can be drawn about North Americans' rate of consumption of the world's resources?

It would be better for the global environment if North Americans find ways to reduce their rate of consumption. OR Many North Americans either do not know or do not care about the global impact of their high level of consumption. OR Many North Americans may believe they can continue consuming at a high level because technology and ingenuity will solve the problem.

the twentieth century. Worldwide famine did not happen because—so far, at least—human ingenuity has outpaced human population growth.

- 9 Fertilizers, pesticides, and high-yield crops have more than doubled world food production in the past 40 years. The reason 850 million people go hungry today and 6 million children under the age of five die each year from hunger-related causes is not that there is not enough food in the world. It is social, economic, and political conditions that make it impossible for those who need the food to get it.
- 10 Norman Borlaug, who won the Nobel Peace Prize in 1970 for his role in developing high-yield crops, predicts that genetic engineering and other new technologies will keep food production ahead of population increases over the next 50 years. New technologies such as genetic engineering, however, are not free from controversies. The European Union requires labeling of all U.S. imported foods containing more than 0.9 percent materials from genetically modified organisms.
- 11 With global population set to peak at around 9 billion people by 2050, it remains unclear whether there will be enough food to go around. Even if it turns out that enough food can be produced for the world in the twenty-first century, whether everybody will get a fair share is much less certain.

## Energy

- 12 If everybody on Earth consumed as much oil as the average American, the world's known reserves would be gone in about 40 years. Even at the current rates of consumption, known reserves will not last through the current century. Technological optimists, however, tell us not to worry. New technologies, they say, will avert a global energy crisis.
- 13 Already oil companies have developed cheaper and more efficient ways to find oil and extract it from the ground, possibly extending the supply to around the year 2100. In many regions of the world, natural gas is replacing oil as the primary source of domestic and industrial power. New coal gasification technologies also hold promise for cleaner and extended fossil fuel power. However, it is impossible to ignore the fact that there is a finite amount of fossil fuel on the planet. These fuels cannot be the world's primary power source forever.
- 14 The more foresighted energy companies are already looking ahead by investing in the technologies that will replace fossil fuels. In some countries, the winds of change have brought nuclear power back onto the table. In others, solar, wind, wave, and biomass technologies are already meeting increasing proportions of national energy needs. A great deal of optimism is placed on the development of fuel cell technologies. A fuel cell is essentially a

### Practice Exercise

Do the authors present a statement of *fact* or *opinion* in the first sentence of paragraph 9?

*fact*

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refillable, hydrogen-powered battery that produces zero pollution. Since hydrogen is the most abundant element in the universe, there is no shortage of supply. The problem is that most of this hydrogen exists in unusable forms, already combined with other elements in more stable molecules. Separating the unstable hydrogen is not difficult, but the process takes energy itself. With ever-accelerating global demand, it remains unclear whether there will be enough clean energy supply to meet the world's needs in the years ahead.

## Water

- 15 The world of the future may not need oil, but without water, humanity could not last more than a few days. Right now, humans use about 50 percent of the planet's accessible supply of renewable fresh water—the supply generated each year and available for human use. A simple doubling of agricultural production with no efficiency improvements would push that amount to about 85 percent. Unlike fossil fuels, which could eventually be replaced by other energy sources, there is no substitute for water.
- 16 Technologies such as desalination, which removes salt from seawater, can be used in rare circumstances. But removing salt from seawater takes a lot of energy and is expensive. In the Persian Gulf, one place that uses desalination, wealth makes it possible. It has been said that in the Persian Gulf, they turn “oil into water.”
- 17 Some regions have already reached their water limits, with massive dams and aqueducts diverting almost every drop of water for human use. In the U.S. Southwest, the diversion is so complete that by the time the Colorado River reaches its mouth in the Sea of Cortez, it has no water in it. Much of Los Angeles' water comes from more than 300 kilometers (186 miles) away.
- 18 More than any other resource, water may limit consumerism during the next century. A few years ago, World Bank Vice President Ismail Serageldin predicted that, “In the next century, wars will be fought over water.”

## Wild Nature

- 19 Every day in the United States, somewhere from 1000 to 2000 hectares of farmland and natural areas are permanently lost to development. As more and more people around the world achieve modern standards of living, the land area converted to houses, shopping malls, roads, and industrial parks will continue to increase. Tropical rainforests will be cut and wild lands will become entombed under pavement. Mighty rivers like the Yangtze and Nile, already dammed and diverted, will become even more canal-like. As the 21st century progresses, more and more of us will live urbanized lives. The few pockets of wild nature that remain will be biologically

### Practice Exercise

Do the authors present statements of *fact* or *opinion* in paragraph 15?

facts

### Practice Exercise

What logical *conclusion* can you draw about the use of desalination in the future?

Using desalination will become necessary in the future. OR Finding less expensive and more efficient ways to use desalination will have to be found.

isolated from each other by development. We will increasingly live not in a natural world, but a world of our own making.

### Using Human Ingenuity

- 20 A quick read of the headlines of any newspaper provides images of hunger, disease, poverty, and pollution. Challenges to our environment like these, however, are also opportunities. We cannot continue with business as usual because such a path is not sustainable. What does that mean? In short, we must all do things differently. For example, different farming practices will allow crops to be raised with fewer chemicals and less water. Buildings can be constructed with new, more sustainable methods. Transportation can be provided while using less energy. In other words, we must think differently. At the end of the day we all share the same air, water, and not-so-big planet. It's important that all of us make it last.

#### Practice Exercise

Do the authors present a statement of *fact* or *opinion* in the last sentence of paragraph 19?

opinion (prediction of a future event)

## SELECTION 9.3

**Environmental  
Science***(continued)***Reading Selection Quiz**

This quiz has several parts. Your instructor may assign some or all of them.

**Comprehension**

*Directions:* Use the information in the selection to answer each item below. You may refer to the selection as you answer the questions. Write each answer in the space provided.

*True or False*

- |     |            |  |
|-----|------------|--|
| ¶13 | T<br>_____ | 1. An individual's ecological footprint is the area of the Earth's productive land and water required to supply the resources that an individual demands as well as to absorb the wastes that the individual produces. |
| ¶19 | F<br>_____ | 2. The reason so many people in the United States go hungry today is that human population growth has outpaced worldwide food production.  |
| ¶15 | F<br>_____ | 3. North Americans make up only 5 percent of the world's population, but they consume 25 percent of the world's energy.  |
| ¶10 | T<br>_____ | 4. It has been predicted that genetic engineering and other new technologies will keep food production ahead of population increases over the next 50 years.   |
| ¶15 | F<br>_____ | 5. Currently, humans use 15 percent of the world's accessible supply of fresh water.   |

*Multiple-Choice*

- |     |            |   |
|-----|------------|---|
| ¶12 | c<br>_____ | 6. The attitude toward our environment that is known as the conservational approach: <ol style="list-style-type: none"> <li>a. assumes that nature is for people to use for their own purposes.</li> <li>b. assumes that nature has value in itself and should be preserved intact.</li> <li>c. recognizes that we must use nature to meet human needs but encourages us to do so in a sustainable manner.</li> <li>d. requires us to conserve energy, water, and wild nature.</li> </ol> |
| ¶11 | c<br>_____ | 7. By 2050, global population will peak at: <ol style="list-style-type: none"> <li>a. 6 million.</li> <li>b. almost 850 million.</li> <li>c. around 9 billion.</li> <li>d. over 17 billion.</li> </ol>  |
| ¶9  | c<br>_____ | 8. The reason so many people throughout the world go hungry today is that: <ol style="list-style-type: none"> <li>a. there is not enough food being produced globally.</li> <li>b. there is an insufficient water supply for agriculture in many areas of the world.</li> </ol>   |

- c. social and economic conditions make it impossible for those who need food to get it.
- d. new crop technologies such as genetic engineering are too controversial.

¶14     d    

9. An example of a technology that may someday replace fossil fuels is:

- a. biomass technology.
- b. fuel cell technology.
- c. solar technology.
- d. all of the above

¶18     c    

10. The resource that may limit consumerism the most during the next century is:

- a. food.
- b. energy.
- c. water.
- d. technology.

## SELECTION 9.3

**Vocabulary in Context****Environmental Science***(continued)*

*Directions:* For each item below, use context clues to deduce the meaning of the *italicized* word. Be sure the answer you choose makes sense in both sentences. Write each answer in the space provided.

¶2     a    11. The preservationist approach assumes that nature has value in itself and should be preserved *intact*.

We know the size and body style of many dinosaurs because their fossil remains have been discovered *intact*.

**intact** (in tǎkt') means:

- a. untouched; left complete or perfect
- b. handled with care
- c. incomplete; not whole
- d. respected; having value

¶4     d    12. Do we in the Northern Hemisphere *consume* too much?

A visit to any shopping mall makes it clear how much Americans *consume*.

**consume** (kən sōm') means:

- a. take in as food; eat or drink
- b. spend
- c. destroy totally; ravage
- d. purchase economic goods and services

¶6     b    13. Ever since he wrote a book called *The Population Bomb* in 1968, ecologist Paul Ehrlich has argued that the American lifestyle is driving the Earth's ecosystem to the *brink* of collapse.

Eric felt he was on the *brink* of disaster when his wallet, credit cards, and checkbook were stolen the day before his rent and his tuition payment were due.

**brink** (brĭngk) means:

- a. edge or border of a steep place
- b. point at which something is likely to begin; verge
- c. highest point; top
- d. end; final

¶18

a

14. Two hundred years ago economist Thomas Malthus predicted that worldwide *famine* was inevitable as human population growth outpaced food production.

Potato crop failures in Ireland between 1846 and 1851 led to a *famine* that caused a million people to starve to death and another 1.6 million to immigrate to America.

**famine** (făm' ĭn) means:

- a. a severe food shortage
- b. an overcrowding
- c. a crop failure
- d. a rapid increase in a population

¶14

d

15. A great deal of *optimism* is placed on the development of fuel cell technologies.

Even though her friends felt that Jane's new business was not going to succeed, Jane was full of *optimism*.

**optimism** (ŏp' tə mĭz' əm) means:

- a. suspicion; doubtfulness
- b. energy
- c. value; effort
- d. hopefulness; confidence

¶12

c

16. New technologies, optimists say, will *avert* a global energy crisis.

The bus driver was able to *avert* an accident by slamming on the brakes and turning the bus sharply.

**avert** (ə vûrt') means:

- a. produce
- b. cause
- c. prevent
- d. lessen

- ¶13     d     17. In many regions of the world, natural gas is replacing oil as the primary source of *domestic* and industrial power.
- Unlike most people, Charles enjoyed *domestic* chores such as doing the laundry, ironing, and cooking.
- domestic** (do mēs' tĭk) means:
- essential
  - efficient
  - inexpensive
  - household
- ¶13     c     18. However, it is impossible to ignore the fact that there is a *finite* amount of fossil fuel on the planet.
- Unfortunately, Janet's boss gave her only a *finite* number of choices: Accept the job transfer and to move to another state, resign, or be terminated.
- finite** (fĭ' nĭt) means:
- decreasing
  - related
  - limited
  - unacceptable
- ¶17     b     19. Some regions have already reached their water limits, with massive dams and aqueducts *diverting* almost every drop of water for human use.
- Immediately following the crash involving several cars on the Interstate, police officers began *diverting* traffic around the scene of the accident.
- diverting** (dĭ vŭr' tĭng) means:
- providing enjoyment
  - turning aside; changing direction
  - preventing entry or access
  - stopping completely
- ¶20     d     20. We cannot continue with business as usual because such a path is not *sustainable*.
- Bamboo can be used for building, food, and clothing, and since it is one of the fastest growing plants, it is considered one of the most inexpensive and *sustainable* resources in the world.
- sustainable** (sə stā' nə bəl) means:
- capable of economic growth
  - capable of being used over and over
  - capable of lasting far into the future
  - capable of being continued without exhausting natural resources

## SELECTION 9.3

**Environmental  
Science**

(continued)

¶s 12–13      d  
distinguishing  
facts from  
opinions  
(Chapter 9)¶3      d  
authors'  
writing  
patterns  
(Chapter 7)¶16      c  
vocabulary  
in context  
(Chapter 2)¶9      a  
supporting  
details  
(Chapter 6)¶s 4–19      c  
author's  
purpose  
(Chapter 8)**Reading Skills Application***Directions:* These items test your ability to *apply* certain reading skills. Write each answer in the space provided.

21. Which of the following expresses an opinion rather than a fact?
- Oil companies have developed cheaper and more efficient ways to find oil and extract it from the ground.
  - There is a finite amount of fossil fuel on the planet.
  - In many regions of the world, natural gas is replacing oil as the primary source of domestic and industrial power.
  - New technologies will avert a global energy crisis.
22. The information in paragraph 3 is organized using which of the following writing patterns?
- list
  - spatial
  - sequence
  - definition
23. As used in paragraph 16 of this selection, *desalination* means:
- using technology for genetic engineering.
  - turning “oil into water.”
  - the process of removing salt from seawater.
  - using aqueducts for diverting water for human use.
24. According to information in the selection, worldwide famine did not happen during the last 40 years of the 20th century because:
- fertilizers, pesticides, and high-yield crops have more than doubled world food production.
  - global population did not increase significantly.
  - worldwide economic and political conditions improved.
  - the human population growth rate slowed.
25. What is the authors’ primary purpose for writing this selection?
- to inform readers about environmental problems such as hunger, disease, poverty, and pollution
  - to persuade North Americans to make changes in their lifestyle that will reduce their ecological footprint
  - to present a variety of issues related to North Americans’ consumption of food, energy, water, and wild nature
  - to compare the problem of overconsumption in the Northern Hemisphere with overconsumption in the Southern Hemisphere





- Solar, wind, wave, and biomass technologies are already meeting increasing proportions of national energy needs.
  - Fuel cell technology will supply energy needs.
  - Desalination can be used.
3. Other than shortages of food, energy, and water, what worldwide social and economic challenges need to be solved or avoided using human ingenuity? List at least three other challenges.

Answers will vary, but may include the following:

- poverty in general; subsistence-level incomes and access to employment
  - diseases such as malaria, HIV/AIDS, and tuberculosis
  - illiteracy; access to basic and higher education
4. In this chapter, you learned the steps to evaluating an author's argument. Answer the seven comprehension-monitoring questions below in order to evaluate the argument presented in this selection.

*What controversial subject is this selection about?*

Whether the challenges caused by how much food, water, and energy we consume can be solved or avoided

*What is the authors' position on this issue?*

The challenges caused by our ecological footprint—how much food, water, and energy we consume—may be solved or avoided by new technologies and inventions resulting from human ingenuity.

*What do the authors take for granted?*

Environmental challenges will promote human ingenuity and therefore provide solutions to these challenges.

*What type of support do the authors present?*

- A variety of developments, including genetic engineering, have doubled world food production in the last 40 years.
- More efficient ways to find and use oil and coal have been found; use of new energy production technologies (solar, wind, wave) is increasing.
- Seawater desalination will help meet water demands.

*Does the support pertain directly to the argument?*

Yes, the support pertains directly to the argument that solutions to our environmental challenges are being developed now and will continue to be developed in the future.

*Is the argument based on facts and other appropriate evidence? Did the authors leave out information that might weaken or disprove the argument?*

Yes, objective facts and appropriate examples are presented. However, the authors claim that human ingenuity will help solve or avoid some of the challenges that result from our over consumption, they do not address the social, economic, and political conditions that may hinder progress in these ways.

*Is the argument logical and believable?*

Yes, the argument is logical and believable.

5. **Overall main idea.** What is the overall main idea the authors want the reader to understand about how much we consume—our ecological footprint—and the world’s challenges to have sufficient food, water, and energy? Answer this question in one sentence.

The amount we consume—our ecological footprint—presents challenges to having sufficient food, water, and energy, but these challenges may be solved or avoided by new technologies and inventions resulting from human ingenuity.