

# Approaching College Reading and Developing a College-Level Vocabulary

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C H A P T E R

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## CHAPTER OBJECTIVES

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

- What do I need to know about the reading process?
- How can I improve my reading?
- Why should I make predictions as I read?
- How can I monitor my comprehension while I read?
- What do I need to know about adjusting my reading rate?
- How can I develop a college-level vocabulary?
- What are denotations and connotations?
- What is figurative language?

SKILLS

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**Understanding the Reading Process****Improving Your Reading**

- Predicting as You Read
- Monitoring Your Comprehension
- Adjusting Your Reading Rate

**Developing a College-Level Vocabulary**

- Using Context Clues
- Using Word-Structure Clues
- Using a Dictionary Pronunciation Key
- Understanding Denotations and Connotations of Words
- Understanding Figurative Language

CREATING YOUR SUMMARY

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**Developing Chapter Review Cards**READINGS

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**Selection 2-1 (Information Technology)**

“What Is on the Web?” from *A Guidebook to the Web*

by Robert Harris

**Selection 2-2 (Literature)**

“The Yellow Ribbon”

by Pete Hamill

**Selection 2-3 (Biology)**

“A Whale of a Survival Problem” from *The Nature of Life*

by John Postlethwait and Janet Hopson

## SKILLS

*To read without reflecting is like eating without digesting.*

Edmund Burke

*We read books to find out who we are. What other people, real or imaginary, do and think and feel is an essential guide to our understanding of what we ourselves are and may become.*

Ursula K. LeGuin

## UNDERSTANDING THE READING PROCESS

Understanding the reading process can make you a better reader and help you study more effectively. You should be aware of several important points about reading.

1. **Reading is a form of thinking.** It is your brain that does the reading, not your eyes. Your eyes merely transmit images to the brain for it to interpret. (To understand this, consider a blind person reading Braille: in this case, it is the fingertips that transmit images to the brain.) Therefore, improving your reading means improving your thinking. Remember that meaning resides in the reader's mind, not in symbols printed on a page. It is the readers who construct meaning by associating their knowledge and experience with what is on the printed page.
2. **Reading requires no unique mental or physical abilities.** The processes you typically use when you read are the same processes of vision, reasoning, and memory that you use in other areas of your daily life.
3. **The reading process includes three stages.** The three stages of reading are *preparing yourself to read*, *processing information*, and *reacting to what you read*. These stages overlap, but all three are needed for the reading process to be complete. In Chapter 3, this process will be explained as it applies to college reading.
4. **Effective reading is active and interactive.** Effective reading requires that you interact with the material you are reading. One way to interact with an author's ideas is to mentally ask yourself questions as you read and then seek answers to these questions. Another way to interact with material you are reading is by relating your own experience and knowledge to the author's ideas. Reading actively also means being aware of how the material is organized. Finally, active reading means that you *monitor your comprehension* as you read, and that you take steps to correct the situation when you are not comprehending. (Monitoring your comprehension will be discussed later in this chapter.)

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Developing strong reading and vocabulary skills will make you more successful in college.

*(Philip Gould/Corbis)*



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5. **Comprehension problems often result from a reader's lack of background knowledge.** Many comprehension problems are not strictly reading comprehension problems but instead are more general comprehension problems that occur when the reader lacks sufficient background knowledge. To put it another way, comprehension problems occur when a reader does not possess enough information about a subject to understand what an author is saying about it. This means that if you are having difficulty understanding new or unfamiliar material, you may need to increase your background knowledge. (For example, you could read a simplified explanation in an encyclopedia first.) Finding out more about an unfamiliar topic can often clear up this kind of problem.
  6. **Your reading rate and your comprehension are related.** The more you know about a topic and the better you understand the material, the faster you can read it. Conversely, if you know very little about a topic, you should reduce your reading rate.
  7. **Your reading strategies should fit your purpose for reading.** You read for many different purposes, and your reason for reading any particular material affects the way you approach it. (For example, your approach to reading a newspaper article or a letter from a friend will be different from your approach to reading and studying a college textbook.) You should choose reading strategies that fit your purpose.

With these things in mind, let's look at general ways you can improve your reading and your reading rate.

## IMPROVING YOUR READING

**KEY TERM****Predicting**

Anticipating what is coming next as you read.

## Predicting as You Read

**Predicting** means making educated guesses about what is coming next as you read. Predicting is often a natural part of reading, but you may not always do it when you are reading college textbooks. As you read an assignment, you should make a conscious effort to anticipate not only what is coming next, but also the author's writing pattern. (Chapter 7 examines authors' writing patterns.)

Of course, when you preview a chapter or reading selection you are predicting in a general way what it will be about and how the material is organized. However, when you actually read and study it carefully, you should continue to make predictions as you read. For example, if an author presents one side of an issue, you might predict that he or she is going to discuss the other side as well. If a paragraph in a psychology textbook begins with the question "Why do people have nightmares?" you would expect the author to explain the reason or reasons.

Predicting helps you concentrate and comprehend; it focuses your attention because it makes you want to keep reading to see if your prediction is correct. In other words, predicting helps you stay involved with the material you are reading.

Instead of passively waiting to see what comes up next when you are reading, try to anticipate what the author will say or present. You will discover that making predictions helps you become a more active, effective reader.

## Monitoring Your Comprehension

**KEY TERM****Monitoring Your Comprehension**

Evaluating your understanding as you read and correcting the problem whenever you realize that you are not comprehending.

**Monitoring your comprehension** means evaluating your understanding as you read and correcting the problem whenever you realize that you are not comprehending. You should monitor your comprehension whenever you read and study college textbooks.

To monitor your comprehension, follow this procedure:

- First, ask yourself, "*Am I understanding what I am reading?*"
- If you do not understand what you are reading, ask yourself, "*Why don't I understand?*"
- Once you determine why you are not comprehending, do whatever is necessary to correct the situation.

Specific types of comprehension problems and strategies for correcting them are listed in the box on page 74. Make monitoring your comprehension a habit. After all, unless you comprehend what you are reading, you are not really reading.

## STRATEGIES FOR CORRECTING CERTAIN COMPREHENSION PROBLEMS

Problems	Solutions
<p><i>I am not understanding because the subject is completely new to me.</i> College reading frequently introduces you to subjects you have not learned about before. Textbooks contain a great deal of new information, sometimes even within a single paragraph.</p>	<ul style="list-style-type: none"> <li>• Keep reading to see if the material becomes clearer.</li> <li>• Ask for a brief explanation from someone who is knowledgeable about the topic.</li> <li>• Read supplemental material or simpler material on the same topic (perhaps an encyclopedia, another textbook, or a book from the library).</li> </ul>
<p><i>I am not understanding because there are words I do not know.</i> College material often contains new words and specialized or technical vocabulary that you must learn.</p>	<ul style="list-style-type: none"> <li>• Try to use the context (the rest of the sentence or paragraph) to figure out the meaning of an unfamiliar word.</li> <li>• Look up unfamiliar words in a dictionary or in the glossary at the back of the textbook.</li> <li>• Ask someone the meaning of unfamiliar words.</li> </ul>
<p><i>I am not understanding because I am not concentrating as I read. Distractors are interfering with my concentration.</i> Your mind may sometimes wander while you are reading long or difficult passages.</p>	<ul style="list-style-type: none"> <li>• Identify what is bothering you. Is it a <i>physical distraction</i> (such as a noisy room or being tired), or is it a <i>psychological distraction</i> (such as being worried or daydreaming)?</li> <li>• Take some action that will help you eliminate the distraction. For example, close the door or move to a quiet room.</li> <li>• Turn off the television. Turn off the music. Don't answer the telephone.</li> <li>• If you are worrying about a personal problem or worrying about finding time for important errands, write it down (for example, jot the items down on a To Do list). Then, after studying, tackle your To Do list. The point is to take some action toward solving problems that are distracting you.</li> <li>• Make a deliberate decision to concentrate on what you are reading. Concentration does not happen automatically.</li> </ul>

### Adjusting Your Reading Rate

Have you ever been asked, “What’s your reading rate?” The fact is that each reader has, or should have, *several* reading rates. Reading everything at the same rate is a sign of poor reading. (Reading at any rate without comprehending is a sign of poor reading, even if the rate is a fast one.)

Having flexible reading rates is an important skill. You will find it helpful to begin developing flexibility in your reading rates right away. To become a more flexible reader, you may find it useful to think of developing a “collection” of reading speeds. The information below provides a brief introduction to adjusting your reading rate. A range of reading rates and when to use each are presented in the box below.

*Factors Influencing Reading Rate: Purpose and Difficulty*

In order to be a flexible, efficient reader you should adjust your reading rate according to two factors: their *purpose* for reading, and *how difficult* the material is for you.

Obviously, you read for many different purposes. For instance, your purpose in reading a textbook may be to understand and learn the material thoroughly for a test. Or there may be some specific bit of information you are searching for, such as the definition of a term in a textbook, a name in an index, or the starting time of a movie in a newspaper listing. Sometimes, of course, you read a magazine or a book just for pleasure.

What determines how difficult certain material will be for you to read? Actually, there are several factors, such as its vocabulary level, writing style, and “idea density.” However, the most important factor is *how much you already know about the subject*. If you are reading about computers, for instance, and you already know a great deal about them, then you will easily understand the terms and concepts you encounter. The information will make more sense to you than it would to someone who knows nothing about computers.

**FLEXIBLE READING: INFORMATION-GATHERING TECHNIQUES  
AND READING RATES**

	Approximate rate (wpm)	Uses
<b>Information-gathering techniques:</b>		
Scanning	1,500 words per minute (wpm) or more	To find a particular piece of information (such as a name, date, or phone number)
Skimming	800-1,000 wpm	To get an overview of the highlights of the material
<b>Reading rates:</b>		
Rapid reading	300-500 wpm	For fairly easy material; when you want only important facts or ideas; for leisure reading

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	Approximate rate (wpm)	Uses
<b>Reading rates:</b>		
Average reading	200-300 wpm	For textbooks, complex magazines and journals, and literature
Study reading	50-200 wpm	For new vocabulary, complex concepts, technical material, and retaining details (such as legal documents, material to be memorized and material of great interest or importance)

When you are assigned to read a textbook chapter, you should look through it first. Ask yourself why you are reading it and how much you already know about the subject. If the material is new to you, then you will need to read more slowly. If you are very familiar with the subject, you can probably read at a faster rate. The point is to read flexibly, adjusting your rate as needed.

Often, you must continue to adjust your rate as you are reading. How can you tell when you should slow down and when you should speed up? The following lists describe situations in which you should do each.

#### *When to Slow Down*

Here are some situations in which you should slow down your reading:

- You know very little about the topic, or it is entirely new to you.
- A passage consists of complicated or technical material that you need to learn.
- A passage has details you need to remember.
- A passage contains new or difficult vocabulary.
- There are directions that you must follow.
- The material is accompanied by charts or graphs to which you must shift your attention as you read.
- The material requires you to visualize something in your mind (a section on the digestive system in a biology text would be an example).
- The writing is beautiful, artistic, descriptive, or poetic and invites you to linger and enjoy each word. (You may want to read such material aloud to yourself.)
- The material contains ideas you want to consider carefully (such as two sides of an argument) or “words to live by” (such as philosophical, religious, or inspirational writing).



*When to Speed Up*

Here are some situations in which you can speed up your reading:

- The whole passage is easy; there are no complicated sentences, no complex ideas, and no difficult terms.
- There is an easy passage within a longer, more difficult section.
- A passage gives an example of something you already understand, or explains it in different words.
- You are already knowledgeable about the topic.
- You want only main ideas and are not concerned about details.
- The material is not related to your purpose for reading (for example, a section of a magazine article that does not pertain to the topic you are researching).

Here is a simple technique for increasing your reading rate on material:

1. Practice regularly with easy, interesting material, such as a newspaper, a magazine (like *Reader's Digest*), or a short, easy novel.
2. Read for 15 minutes each day, pushing yourself to read at a rate that is slightly too fast for you—in other words, a rate that is slightly uncomfortable. Once it becomes comfortable, push yourself a little more.
3. Monitor your concentration. If you are momentarily distracted, return immediately to your reading.
4. Keep track of the number of pages you read each day.

As you continue to practice, you will find that you are able to read more pages in the same amount of time. You will also find that you can usually understand the important points in a passage even though you are reading it at a faster rate. There is another bonus: as you read each day, you will be adding to your background knowledge. This will enable you to read related material more effectively in the future.

## DEVELOPING A COLLEGE-LEVEL VOCABULARY

Developing a powerful vocabulary is a process that takes time; but every time you read, you have an opportunity to expand your vocabulary. The more you read, the better your vocabulary can become—if you develop a real interest in words and their meanings. Remember that writers take special care to select words that convey precisely what they want to say.

Developing a large vocabulary will make your college work easier, and your speech and your writing will become more interesting and more precise. If all that is not enough, your increased vocabulary may ultimately lead to an increased salary. Research tells us that the size of a person's vocabulary correlates with his or her income. Thinking of each word you learn as “money in the

bank” may be an incentive for you to pay attention to new words and add them to your vocabulary!

There are three techniques that you can use to develop and expand your vocabulary as you read:

1. **Use context clues.** This means that you figure out the meaning of an unfamiliar word from clues provided by the surrounding words and sentences.
2. **Use word-structure clues.** That is, determine a word’s meaning on the basis of its parts, (prefix, root, and suffix).
3. **Use a dictionary.** Use a dictionary to determine a word’s pronunciation and meaning as it is used in the passage you are reading.

The vocabulary exercises that follow each of the reading selections in *Opening Doors* will give you ongoing opportunities to use context clues and practice pronouncing words correctly.

### KEY TERM

#### Context Clues

Words in a sentence or paragraph which help the reader deduce (reason out) the meaning of an unfamiliar word.

### Comprehension

#### Monitoring Question for Vocabulary in Context

Are there clues within the sentence or surrounding sentences that can help me deduce the meaning of an unfamiliar word?

## Using Context Clues

Writers want you to understand what they have written. When they use words that they think might be unfamiliar to their readers, they often help the reader by offering various clues in the rest of the sentence so that the reader can deduce (reason out) the meaning of the word. Such clues are called **context clues**. (The word *context* refers to the sentence and the paragraph in which the unknown word appears.) Since context clues can help you figure out the meaning of an unfamiliar word, think of them as gifts the writer is giving you to make your job easier.

How can you take advantage of these “gifts”? You can do so by reading the sentence carefully and by paying attention to the words and other sentences surrounding the unfamiliar word. Some of the most common types of context clues are summarized in the box below.

### USING CONTEXT CLUES TO DETERMINE THE MEANING OF UNFAMILIAR WORDS

Type of Clue	What to Ask Yourself	What to Look For	Example
<b>Definition clue</b>	Are there <i>definition clues</i> and a definition?	Phrases that introduce a definition, such as: <i>is defined as, is called, is, is known as, that is, refers to, means, the term</i> ; a term that is in bold print, italics, or color; or certain punctuation marks that set off a definition or a term. (See page 353.)	<b>Interiority</b> is defined as a tendency toward looking within during middle age.

Type of Clue	What to Ask Yourself	What to Look For	Example
<b>Synonym clue</b>	Is there a <i>synonym</i> for the unfamiliar word? That is, is the meaning explained by a word or phrase that has a <i>similar meaning</i> ? The synonym may be set off by commas, parentheses, a colon, dashes or brackets. (See page 353.)	Phrases that introduce synonyms, such as: <i>in other words, or, that is to say, also known as, by this we mean, that is.</i>	The garden was <b>redolent</b> , or <i>fragrant</i> , with the scent of roses.
<b>Contrast clue</b>	Is there an <i>antonym</i> for the unfamiliar word? That is, is the unfamiliar word explained by a contrasting word or phrase with the <i>opposite meaning</i> ?	Words and phrases that indicate opposites: <i>instead of, but, in contrast, on the other hand, however, unlike, although, even though.</i>	I did the physical therapy exercises incorrectly and, <i>instead of</i> helping my back, they were actually <b>deleterious</b> .
<b>Experience clue</b>	Can you draw on your <i>experience and background knowledge</i> to help you deduce (reason out) the meaning of the unfamiliar word?	A sentence that includes a <i>familiar experience</i> (or information you already know) can help you figure out the meaning of the new word.	The campers <i>were warned that hiking up that steep mountain trail</i> would <b>enervate</b> even the fittest members of their group.
<b>Example clue</b>	Are there <i>examples</i> that illustrate the meaning of the unfamiliar word?	Words that introduce examples of the meaning of the unfamiliar word: <i>for example, such as, to illustrate, like.</i>	He enjoys <b>aquatic</b> sports <i>such as swimming, scuba diving, and water skiing.</i>
<b>Clue from another sentence</b>	Is there <i>another sentence</i> in the paragraph that explains the meaning of the unfamiliar word?	<i>Additional information in another sentence</i> that may help explain the unfamiliar word.	When studying for his final exams, the student was told to <b>eschew</b> television. <i>“Just give TV up!”</i> was his roommate’s advice.

**KEY TERM****Word-Structure Clue**

Roots, prefixes, and suffixes that help you determine a word’s meaning. Word structure clues are also known as *word part clues*.

## Using Word-Structure Clues

Although context clues will be your greatest aid in determining the meaning of unknown words, **word-structure clues** or *word-part clues* can also help you determine meanings. A list of important and useful word parts appears in Appendix 3.

To use word-structure clues, examine an unfamiliar word to see if it has any of the following word parts:

- **Root:** Base word that has a meaning of its own.
- **Prefix:** Word part attached to the beginning of a root that adds its meaning to the meaning of the root.
- **Suffix:** Word part attached to the end of a root word.

Prefixes and suffixes are also called *affixes*, since they are “fixed” (attached or joined) to a root or base word. A word may consist of a:

- Root only (such as *graph*)
- Prefix and root (*tele • graph*)
- Root and suffix (*graph • ic*)
- Prefix, root, and suffix (*tele • graph • ic*)

Learning about prefixes and suffixes not only increases your vocabulary but can help you improve your spelling as well. For instance, if you know the meaning of the prefix *mis* (“bad” or “wrong”), then you will understand why the word *misspell* has two *s*’s: one is in the prefix (*mis*) and one in the root word (*spell*).

#### KEY TERM

##### Root

Base word that has a meaning of its own.

**Roots** are powerful vocabulary-building tools, since whole “families” of words in English often come from the same root. For example, if you know that the root *aud* means “to hear,” then you will understand the connection between *audience* (people who come to *hear* something or someone), *auditorium* (a place where people come to *hear* something), *audit* (enrolling in a course just to *hear* about a subject, rather than taking it for credit), *auditory* (pertaining to *hearing*, as in auditory nerve), and *audiologist* (a person trained to evaluate *hearing*). Knowing the meaning of a word’s root makes it easier to remember the meaning of the word.

#### KEY TERM

##### Prefix

Word part attached to the beginning of a root word that adds its meaning to that of the base word.

**Prefixes** change the meaning of a root by adding their meaning to the meaning of the root. For example, adding the prefix *tele* (“distant” or “far”) to the root word *scope* (“to see”) creates the word *telescope*, a device that lets you *see* things which are *far* away. Try adding the prefixes *pre* (“before”) and *re* (“back”) to the root *cede* (“to go” or “to move”). *Precede* means “go before” something or someone else; *recede* means “move back.”

Think of roots and prefixes as parts of a puzzle that can often help you figure out the meaning of an unfamiliar word. Remember, however, that although a word may begin with the same letters as a prefix, it does not necessarily contain that prefix. The words *malt*, *mall*, *male*, and *mallard* (a type of duck), for example, have no connection with the prefix *mal* (“wrong” or “bad”).

#### KEY TERM

##### Suffix

Word part attached to the end of a root word.

**Suffixes** are word parts that are attached to the end of a root word. Some add their meaning to a root. Other suffixes change a word’s part of speech or inflection. For example, consider these forms of the word *predict*: *prediction*, *predictability*, *predictor* (nouns); *predictable* (adjective); *predictably* (adverb). Examples of suffixes that serve as inflectional endings include adding *s* to make a word plural or *ed* to make a verb past tense.

Suffixes are not as helpful as roots or prefixes in determining the meaning of unfamiliar words because many suffixes have similar or even the same mean-

**Comprehension**  
**Monitoring Question for**  
**Word-Structure Clues**

Are there roots, prefixes, or suffixes that give me clues to the meaning of an unfamiliar word?

**KEY TERM**  
**Etymology**

The origin and history of a word.

ings. Also, some root words change their spelling before a suffix is added. For instance, when certain suffixes are added to *happy* the *y* becomes an *i*: *happier*, *happiness*, *happily*.

The most common and helpful roots, prefixes, and suffixes in English come from Latin and ancient Greek. These Latin and Greek word parts not only help you figure out the meaning of a word, but also serve as built-in memory aids that make it easy to recall the meaning.

Spanish, French, Italian, Portuguese, and Romanian are called *romance languages* because they draw so heavily on Latin. (Latin was the “Roman” language because it was spoken in ancient Rome.) Although English is not one of the romance languages (it is a Germanic language), English still has many words derived from Latin and ancient Greek. In particular, a considerable number of terms in science, medicine, and technology are derived from Latin and Greek, so learning word parts from these two older languages can be useful to you if you are considering a career in those fields.

A word’s **etymology** (origin and history) will indicate whether it contains Latin or Greek word parts. Because a word’s etymology can help you understand and remember a word’s meaning, dictionaries often give the etymology of a word in brackets [ ] before or after the definition. When you look up a word in the dictionary, take an extra minute to check its etymology for word-structure clues that you might recognize. This technique of checking a word’s etymology will also help you learn and remember the meaning of many roots and affixes.

You may want to familiarize yourself with the common roots, prefixes, and suffixes in Appendix 3. Then watch for them in new words you encounter. Use these word-structure clues whenever possible to help you confirm your “educated guess” about a word’s meaning.

## Using a Dictionary Pronunciation Key

Most college students already know how to locate a word in the dictionary efficiently and accurately, and how to determine which definition is appropriate for their needs. But like many students, you may still not be proficient at or feel confident using a dictionary pronunciation key. Being able to use a pronunciation key is important, because when you need to remember words, one of the most helpful things you can do is learn their correct pronunciation and say them aloud. Checking and then practicing a word’s pronunciation takes only a moment or two.

A complete pronunciation key appears at the beginning of a dictionary. Typically, it looks similar to the example shown in the box on page 82.

## DICTIONARY PRONUNCIATION KEY

Examples	Symbols	Examples	Symbols
pat	ă	pop	p
pay	ā	roar	r
care	âr	sauce	s
father	ä	ship, dish	sh
bib	b	tight, stopped	t
church	ch	thin	th
deed, milled	d	this	th
pet	ě	cut	ŭ
bee	ē	urge, term, firm,	ūr
fife, phase, rough	f	word, heard	
gag	g	valve	v
hat	h	with	w
which	hw	yes	y
pit	ī	abuse, use	yōō
pie, by	ī	zebra, xylem	z
pier	īr	vision, pleasure,	zh
judge	j	garage	
kick, cat, pique	k	about, item, ed/ble,	ə
lid, needle	l (nēd'l)	gallop, circus	
mum	m	butter	ər
no, sudden	n (sūd'n)		
thing	ng	FOREIGN	
pot	ô	<i>French</i> feu,	œ
toe, hose	ô	<i>German</i> schön	
caught, paw	ô	<i>French</i> tu,	ü
noise	oi	<i>German</i> über	
took	ōō	<i>German</i> ich,	kH
boot	ōō	<i>Scottish</i> loch	
out	ou	<i>French</i> bon	N

## STRESS

Primary stress ' bi ol' o gy (bi ōl' ə jē)

Secondary stress ' bi' o log' ical (bi ə lōj' i kəl)

Source: *American Heritage Dictionary*, 3d ed., Houghton Mifflin, Boston, Mass., 1983, p. xiii. Copyright © 1983 by Houghton Mifflin Company. Reprinted by permission. Abbreviated keys are adapted from the same source.

In most dictionaries an *abridged pronunciation key*, showing only vowel sounds and the more unusual consonant sounds, appears at or near the bottom of each page. It usually looks something like this:

*Pronunciation key:* ă pat ā pay âr care ã father ě pet ē be ĭ pit  
 ī tie îr pier ǒ pot ō toe ô paw oi noise ou out ǝ took ōo boot  
 ŭ cut yōo abuse ûr urge th thin th this hw which zh vision  
 ə about  
*Stress mark:* '

Your instructor can give you guidance in using a dictionary pronunciation key. In *Opening Doors*, you will have numerous opportunities to practice this skill, since the pronunciation is given for each term in the vocabulary quizzes that accompany the reading selections. To help you interpret the symbols, an abridged (shortened) pronunciation key is repeated in each vocabulary section.

## Understanding Denotations and Connotations of Words

The literal, explicit meaning of a word—its dictionary definition—is called its **denotation**. But many words also have connotations. A **connotation** is an additional, nonliteral meaning associated with a word. For example, the two words *weird* and *distinctive* have similar denotations (both of them describe something that is out of the ordinary). It is their connotations that cause us to choose one of these words instead of the other when describing someone or something. You might describe the traits of someone you admire as *distinctive* but those of someone you dislike as *weird*, because *distinctive* has a positive connotation and *weird* has a negative one. Most people, for example, would rather be thought of as having *distinctive* clothes than *weird* clothes. *Distinctive* and *weird* have opposite connotations. *Distinctive* is associated with positive qualities; *weird* is associated with negative ones.

As suggested above, there are many words that have positive or negative connotations. For instance, consider your responses to the following pairs of adjectives, nouns, and verbs. They have similar denotations, but different connotations. The word in the left column has a positive connotation while its counterpart in the right column has a more negative one.

<i>Positive connotation:</i>	<i>Negative connotation:</i>
distinctive	weird
slender	skinny
assertive	pushy
preowned	used
computer whiz	computer nerd
correctional facility	prison

### KEY TERMS

#### Denotation

Literal, explicit meaning of a word—its dictionary definition.

#### Connotation

Additional, nonliteral meaning associated with a word.

*Positive connotation:*

political activist  
study  
exaggerate  
borrow

*Negative connotation:*

demagogue  
cram  
lie  
plagiarize

**Comprehension**  
**Monitoring Question for**  
**Connotative Meaning:**

Is there a positive or negative association in addition to the literal meaning of a word?

Careful readers ask themselves, “Does this word have a connotation as well as a denotation?” That is, “Is there a positive or negative association in addition to the word’s literal meaning?”

Here is an excerpt from an essay on gambling by the political analyst, commentator, and columnist George Will. Notice the effect of the author’s use of the word *lust*. The author, who opposes gambling, chose this word because of its negative connotation:

Gambling is debased speculation, a lust for sudden wealth that is not connected with the process of making society more productive of goods and services.

*Source:* George F. Will, “Lotteries Cheat, Corrupt the People,” Washington Post Writers’ Group, 1994. Reprinted with permission.

According to the dictionary, one denotation (definition) of *lust* is “overwhelming craving”; another definition is “excessive or unrestrained sexual desire.” In this passage, the author uses *lust* because of its negative connotations: pursuit of something that is evil or bad for us, a lack of self-control, impurity. The author could have said simply “a *desire* for sudden wealth,” but he has used a stronger word to convey that gamblers have an excessive desire for sudden wealth: they crave it.

## Understanding Figurative Language

**KEY TERM**

**Figurative Language**

Words that create unusual comparisons or vivid pictures in the reader’s mind.

Figurative expressions are also called *figures of speech*.

**Comprehension**  
**Monitoring Question for**  
**Figurative Language**

Should these words or this expression be interpreted figuratively?

**Figurative language** is language that uses imagery—unusual comparisons or vivid words that create certain effects—to paint a picture in the reader’s or listener’s mind. Figurative expressions are also called *figures of speech*. You use figurative language every day, although you may not know it by that name. Whenever you say something such as “That chemistry test was a monster” or “My mother is a saint,” you are using figurative language.

Because figures of speech do not literally mean what the words say, the reader or listener must *interpret* their meaning. If you say, “My landlord is a prince,” you do not actually or literally mean that he is a member of a royal family. You expect your listener to interpret your words to mean that you appreciate your landlord, perhaps because he is cooperative and pleasant. If you say, “My landlord is a rat,” you do not literally mean that he is a rodent. You expect your listener to interpret your words to mean that you dislike your landlord, perhaps because he has proved to be untrustworthy or unfair.

Four especially common figures of speech are *metaphor*, *simile*, *hyperbole*, and *personification*. Let’s look at each of these.



**KEY TERM****Metaphor**

Figure of speech suggesting a comparison between two essentially dissimilar things, usually by saying that one of them *is* the other.

**KEY TERM****Simile**

Figure of speech presenting a comparison between two essentially dissimilar things by saying that one of them is *like* the other.

**KEY TERM****Hyperbole**

Figure of speech using obvious exaggeration for emphasis and effect.

**KEY TERM****Personification**

Figure of speech in which nonhuman or nonliving things are given human traits or attributes.

Metaphors and similes both make unusual comparisons. A **metaphor** is an implied comparison between two things that seem very different from each other on the surface yet are alike in some significant way. A metaphor usually states that one thing is something else. The author assumes that readers will not take his or her words literally, but will understand that it is figurative language. (That is, the sentence is to be taken figuratively, not literally.) For example, in the sentence “*Jamie’s garden is a rainbow*,” the writer is making a comparison between a garden and a rainbow to help the reader envision the colorful array of flowers in the garden. To interpret this metaphor correctly, the reader must compare a garden and a rainbow and determine what they might have in common: a multitude of colors. (The author does not mean that the garden was literally a rainbow.) Another example of a metaphor would be “*Joe’s desk was a mountain of paper*.” It creates a vivid image of how high (“a mountain”) the paper was stacked on the desk. As noted, metaphor usually states that one thing is something else (in these cases, that a garden *is* a rainbow or that a stack of papers *was* a mountain).

A **simile** is also a comparison between two essentially dissimilar things, but instead of saying that one thing *is* something else, the author says that one thing is *like* something else. In fact, a simile is usually introduced by the words *like* or *as*. “*Lisa felt like a lottery winner* when she received the scholarship” and “*The marine stood at attention as rigid as an oak tree*” are examples of similes. In the first sentence, receiving a scholarship is compared to winning a lottery. The author wants us to understand that receiving the scholarship made Lisa feel as excited as if she has won a great deal of money in the lottery. In the second example, a marine, because of his stiff posture, is compared to an oak tree. To repeat: a simile says that one thing is *like* another. To understand a simile, you must determine which things are being compared and the important way in which the author considers them to be similar.

Another type of figurative language is **hyperbole** (pronounced *hī pēr’ bə lē*), in which obvious exaggeration is used for emphasis. “*My parents will explode if I get one more speeding ticket!*” is an example of hyperbole. The parents would not literally “explode,” but the exaggeration conveys how angry they would be.

In **personification**, nonliving or nonhuman things are given human characteristics or qualities. “*My car groaned, coughed, and wheezed, then crawled to a stop*” gives human attributes to an automobile to suggest that the car made strange noises and then quit running. Cars, of course, cannot groan, cough, wheeze, and crawl in the same sense that a person would do these things.

Careful readers ask themselves, “Is the author using figurative language?” “What things are being compared, and how are they alike?” “What exaggeration is being made and why? What human traits are being given to a nonliving thing?”

The box on page 86 summarizes metaphor, simile, hyperbole, and personification.

## FIGURATIVE LANGUAGE

Figures of speech	Examples
<b>Metaphor:</b> Implied comparison between two dissimilar things	Television is a junkyard of violence and stupidity.
<b>Simile:</b> Stated comparison between two dissimilar things, usually introduced by the word <i>like</i> or <i>as</i>	After the party, Ted's apartment looked as if it had been hit by a tornado.
<b>Hyperbole:</b> Obvious exaggeration for emphasis	I'm so excited about graduation that I won't be able to sleep for a month.
<b>Personification:</b> Attribution of human characteristics or qualities to nonhuman or nonliving things	The drab, dilapidated building looked tired and unhappy until it received a face-lift.

Understanding figurative language can help you grasp an author's message exactly, and it also makes material more interesting and enjoyable to read.

Here are some examples of figurative language by famous authors or well-known people. There are also some proverbs. On the lines beside each one, write the meaning of the figure of speech.

What is the meaning  
of the figurative language?

### Metaphor

"A good laugh is sunshine in the house."

William Makepeace Thackeray

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"Time is money."

Edward Bulwer-Lytton

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"Money is a good servant but a bad master."

Sir Francis Bacon

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"Grief is itself a medicine."

William Cowper

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"Debt is a bottomless sea."

Thomas Carlyle

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“Hope is a good breakfast, but it is a bad supper.”

Francis Bacon

“This is what is left of China’s army! Only rags to mop up China’s blood.”

Amy Tan  
*The Kitchen God’s Wife*

“Because the Internet originated as a computer-science project rather than a communications utility, it has always been a magnet for hackers—programmers who turn their talents toward mischief or malice by breaking into the computer systems of others.”

Bill Gates  
*The Road Ahead*

**Simile**

“Much of the Internet culture will seem as quaint to future users of the information highway as stories of wagon trains and pioneers on the Oregon Trail do to us today.”

Bill Gates  
*The Road Ahead*

“The water from the spring,” she said, “is heavy as gold, sweet as honey, but clear as glass. If you look into the pool you can see your face, just like in a mirror.”

Amy Tan  
*The Kitchen God’s Wife*

**Hyperbole**

“Here once the embattled farmers stood,  
And fired the shot heard round the world.”

Ralph Waldo Emerson  
“Concord Hymn”

“Everybody had made a ‘ton of money’ in the last few years and expected to make a ton more.”

Richard Ford  
*Independence Day*

"He had a big mustache yellowed by eight million Pall Malls."

Richard Ford  
*Independence Day*

**Personification**

"Those were the kinds of thoughts that crawled into my head."

Amy Tan  
*Joy Luck Club*

"Chance makes our parents, but choice makes our friends."

Delille

"Misery loves company."

English proverb

"Misfortunes always come in by a door that has been left open for them."

Czech proverb

"When money speaks, the truth is silent."

Russian proverb

## DEVELOPING CHAPTER REVIEW CARDS

*Review cards, or summary cards,* are an excellent study tool. They are a way to select, organize, and review the most important information in a textbook chapter. The process of creating review cards helps you organize information in a meaningful way and, at the same time, transfer it into long-term memory. The cards can also be used to prepare for tests (see Part Three). The review card activities in this book give you structured practice in creating these valuable study tools. Once you have learned how to make review cards, you can create them for textbook material in your other courses.

Now, complete the eight review cards for Chapter 2 by answering the questions or following the directions on each card. When you have completed them, you will have summarized important information about: (1) the reading process, (2) predicting as you read, (3) monitoring your comprehension, (4) adjusting your reading rate, (5) using context clues to determine the meaning of unfamiliar words, (6) using word-structure clues, (7) interpreting figurative language, and (8) monitoring your understanding of vocabulary.

### Understanding the Reading Process

List seven important points about the reading process. (See pages 71–72.)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_

Card 1 Chapter 2: Approaching College Reading and Developing a College-Level Vocabulary

**Predicting As You Read**

1. What is predicting? (See page 73.)

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2. Why is predicting helpful? (See page 73.)

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Card 2 **Chapter 2: Approaching College Reading and Developing a College-Level Vocabulary**

**Monitoring Your Comprehension**

1. What does monitoring your comprehension mean? (see page 73.)

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2. Describe the three-part procedure for monitoring your comprehension as you read. (See page 73.)

First: \_\_\_\_\_

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Second: \_\_\_\_\_

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Third: \_\_\_\_\_

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Card 3 **Chapter 2: Approaching College Reading and Developing a College-Level Vocabulary**

### Adjusting Your Reading Rate

Efficient readers adjust their rate according to two factors. List them. (See page 75.)

Factor 1: \_\_\_\_\_

Factor 2: \_\_\_\_\_

List several situations in which it is appropriate to *slow down* your reading rate. (See page 76.)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

List several situations in which it is appropriate to *speed up* your reading rate. (See page 77.)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Card 4 Chapter 2: Approaching College Reading and Developing a College-Level Vocabulary

### Using Context Clues to Determine Meanings of Words

What are *context clues*? (See page 78.)

\_\_\_\_\_

\_\_\_\_\_

Describe six types of context clues. (See the box on pages 78–79.)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

Card 5 Chapter 2: Approaching College Reading and Developing a College-Level Vocabulary.

**Using Word-Structure Clues**

Define the following terms. (See pages 79–81.)

*Word-structure clues:* \_\_\_\_\_

*Root:* \_\_\_\_\_

*Prefix:* \_\_\_\_\_

*Suffix:* \_\_\_\_\_

*Etymology:* \_\_\_\_\_

Card 6 **Chapter 2: Approaching College Reading and Developing a College-Level Vocabulary**

**Interpreting Figurative Language**

Define the following terms. (See pages 84–85.)

*Figurative language:* \_\_\_\_\_

*Metaphor:* \_\_\_\_\_

*Simile:* \_\_\_\_\_

*Hyperbole:* \_\_\_\_\_

*Personification:* \_\_\_\_\_

Card 7 **Chapter 2: Approaching College Reading and Developing a College-Level Vocabulary**



### Monitoring Your Understanding of Vocabulary

1. What question should you ask yourself in order to take advantage of context clues? (See page 78.)

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2. What question should you ask yourself in order to take advantage of word-structure clues? (See page 81.)

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3. What question should you ask yourself in order to understand the connotation of a word? (See page 84.)

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4. What question should you ask yourself in order to understand figurative language? (See page 84.)

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Card 8 Chapter 2: Approaching College Reading and Developing a College-Level Vocabulary



SELECTION 2-1

Information  
Technology

**WHAT IS ON THE WEB?**

From *A Guidebook to the Web*

By Robert Harris

**Prepare Yourself to Read**

*Directions:* Do these exercises *before* you read Selection 2-1.

1. First, read and think about the title. What do you already know about what is on the World Wide Web?

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2. In general, do you feel positive about what the Web offers, or are you alarmed about its content?

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

Introduction (in *italics*)

First paragraph (paragraph 1)

First sentence of each of the other paragraphs

Diagram

On the basis of your preview, what three aspects of the Web does the selection seem to be about?

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**Apply Comprehension Skills**

*Directions:* Do these exercises as you read Selection 2-1. Apply three skills from this chapter:

**Adjust your reading rate.** On the basis of your preview and your prior knowledge of what is on the World Wide Web, do you think you should read Selection 2-1 slowly or rapidly?

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**Develop a college-level vocabulary.** Did you notice any unfamiliar words while you were previewing Selection 2-1? If so, list them here.

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**Predict as you read.** As you read Selection 2-1, make predictions about what the author will discuss next. Write your predictions in the blanks provided.

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## WHAT IS ON THE WEB?

*Everyone has heard of the Internet and the World Wide Web (WWW). In fact, in less than five years' time, 25 percent of the world's population has already received information on the Web. However, not everyone knows the types of things the Web makes available to users either free or for a fee. This selection describes those things along with several sample websites. (Be sure that you visit some of them.) It also explains the types of things that are not available on the Web. (Note: See Appendix I for "An Introduction to Using Computers, the Internet, and the World Wide Web.")*

## What Is on the Web—for Free?

- 1 Detractors of the World Wide Web are fond of saying that "anybody can put anything on the Web," with the implication that the Web is one vast mountain of junk information, bigotry, ignorance, and pornography. While it is true that the items just mentioned are out there on the Web, the important thing to remember is that "anybody" includes a lot more than kooks and perverts. Tens of thousands of smart, caring, knowledgeable individuals, countless corporations, nonprofit organizations like consumer groups, government agencies, and so on, all have websites. The Web is a library that never closes, a reference source of books, articles (including news, sports, weather), photographs, maps, music, video clips, and names and addresses. There is information on the Web for almost anything you can think of. Much of the material on the Web is available free, because of personal generosity or corporate public relations, or through the advertising model (the same method that makes network television free—advertising pays for the cost of the content).
- 2 What can you find? If you want to learn how to grow and care for orchids, there are several sites created by experienced growers ready to give you advice. If you have ever wondered what those weird chemicals listed on your shampoo or mousse containers do, some of the manufacturers who produce those chemicals host several sites that explain in detail what those ingredients do. If a friend has a strange and rare disease, there are dozens of medical information sites to look at.
- 3 Here are just some of the kinds of information available on the Web:
- 4 **Art** If you are looking for a particular old master painting, a tour of a famous museum, or

## Practice Exercises

*Directions:* At each of the points indicated below, answer the question, "What do you predict will happen next?" Write your answer in the lines provided.

## Practice Exercise

What do you predict will be discussed in paragraph 2?

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some examples of contemporary art, you can find them all. For a sample site, try the National Gallery of London, at [www.nationalgallery.org.uk/](http://www.nationalgallery.org.uk/)

- 5 **Music** With the advent of MIDI (musical instrument digital interface) keyboards, many pieces of classical and modern music have been recorded for the Web. You can even find instrumental versions of contemporary pop songs, though many are poorly performed and most, if not all, are in probable violation of copyright. For a sample site, try The Classical Music MIDI Page at [www.sciortino.net/music.html](http://www.sciortino.net/music.html)
- 6 **Government documents** Federal and state governments post laws, proposed legislation, consumer information, research documents, and statistics to the Web. Since government sources are generally viewed as reliable, you can find a lot of useful research material on these sites. For a sample site, try the Consumer Information Center at [www.pueblo.gsa.gov](http://www.pueblo.gsa.gov)
- 7 **Literature** Novels, poetry, short stories, satire and other literary expressions (including criticism and theory) are offered. Because of copyright restrictions, most of the literature (especially novels) available dates to 1912 and earlier. However, you will be able to find some works that have been posted, either into the public domain or as part of a promotion. For a sample site, try Project Gutenberg at [www.promo.net/pg](http://www.promo.net/pg)

#### WEB TIP

When you are searching for a noncomputer item that may sound like a computer-related item, be sure to specify in your search string that you do not want computers. If, for example, you are looking for information about dehydrated apple chips, recall that Apple is a computer maker and chip can refer to an integrated circuit chip.

- 8 **News, sports, weather** What you have enjoyed on television or in the newspaper is also, for the most part, available on the Web. Many commercial news organizations have a Web presence, offering the same information as on their traditional outlets, because the Web eliminates the restrictions of time and space. Articles



Accessing information on the World Wide Web is an essential skill for college students. Some students even carry laptop computers with them on campus.  
*(Jerry Koontz/Index Stock)*

can be as long as needed to tell the whole story, and the number of photos that can be mounted is not restricted by the number of magazine pages. All of the information can be updated as often as desired (some sites update every few minutes, some every few hours). For a sample site, try the *New York Times* at [www.news.com](http://www.news.com) and *Sports Illustrated* at [www.cnn.com](http://www.cnn.com)

- 9 **Computers** The inventors of the Web, and the first few million people who began to use it, were very interested in computers and computer technology, so the Web has always had a disproportionate amount of computer information on it. For a sample site, try News.com at [www.news.com](http://www.news.com)
- 10 **Library card catalogs** Hundreds of libraries have online card catalogs available through the Web. You can connect to the catalog and see what books and journals the library has. For a sample site, try MELVYL, the University of California Online Catalog at [www.melvyl.ucop.edu](http://www.melvyl.ucop.edu)
- 11 **Corporate information** Some corporations have what amounts to little more than advertisements on the Web, to puff their products the same way a television commercial might. Others have product catalogs, corporate financial information, and lists of contacts. And many companies have additional resources, ranging from consumer tips and information for the public to detailed information about products and manufacturing processes. For a sample site, try the Gerber website (which includes parenting information and frequently asked questions about baby care) at [www.gerber.com](http://www.gerber.com)

#### WEB TIP

Be careful about shopping online with a company you have never heard of. Most of the businesses are legitimate, but there are a few scam artists who are ready to take your money (and credit card number) and disappear. Many credit card companies guarantee your card against fraud, limiting your loss either to nothing or to \$50. Check with your card issuer to learn about its policy. (Your card issuer probably has a website.)

- <sup>12</sup> **Addresses and phone numbers** The Web is not always your final destination. It can be a source where you can find telephone numbers and addresses for individuals and businesses and even maps that show you how to get from your location to a destination you choose. For a sample site, try the GTE SuperPages at [superpages.gte.net](http://superpages.gte.net)
- <sup>13</sup> **Shopping** One of the driving forces that have caused many companies to rush to the Web is the prospect of making money directly through it. Thus, there are many opportunities to shop online, for everything from books to chocolate to medical oxygen to stereo equipment. For a sample site, try shopping for books and CDs at Amazon.com at [www.amazon.com](http://www.amazon.com)

### What Is on the Web—for a Price?

- <sup>14</sup> Now we come to a critical distinction about what you can get on the Web. Information is a product that requires time, effort, and money to produce. While some corporations are willing to give information away because it serves their interest or image to do so, and while others have learned how to support information availability through online advertising, other corporations have not yet done so, and offer to sell their information to the end user. How to recover the costs of creating and presenting information is one of the ongoing problems in the electronic world. A good example would be online newspapers. Some newspapers have their entire paper online, while others have only a few stories. Some papers have freely available archives of past issues, while others want to sell past articles at prices substantially higher than a copy of the entire original paper. As publishers experiment, what was once free may begin to cost and vice versa. For the foreseeable future, however, at least some resources on the Web will be available only for a fee. Here are some examples of commercial databases that charge a fee.
- <sup>15</sup> **Commercial databases** There are several proprietary databases of periodical articles, which allow you to read and print copyrighted materials for a fee. Lexis/Nexis, Infotrac, Encyclopedia Britannica, and Electric Library are some examples of companies that, in addition to

#### Practice Exercise

What do you predict will be discussed in paragraph 14?

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the costs of maintaining a website, as outlined in the paragraph above, must pay license fees to the copyright holders of the information. Northern Light is a hybrid service, providing searching on the Web at large as well as on a commercial database. Users can choose to search for only free websites or for the fee-based articles.

### What Is Not on the Web?

- 16 There are billions of dollars' worth of copyrighted intellectual property in the world, in the form of books, movies, music, articles in periodicals, photographs, and the like. Those who make a living by creating and marketing these works must be able to receive income from them in some way. While an increasing number of magazine and journal articles are available on the Web, either free, for a per use fee, or for a subscription fee, few book publishers have discovered how to charge for reading books online, so most of the books in a typical bookstore or library are not available free on the Web, nor are many other items like commercial releases of popular music. Further, millions of copyrighted but out-of-print books exist which would need to be put into digital form in order to be made available on the Web even for a fee. (And millions of books out of copyright still wait to be put into digital form as well.) Photographs and artworks would need to be scanned, and privately owned databases would have to be converted to Web-friendly format. Magazines and journals with only a small circulation may not have a Web presence, and to read an article in one of them you would have to go to the printed version.

Source: Robert Harris, *A Guidebook to the Web*, Dushkin McGraw-Hill, Guilford, Conn., pp. 11–15.

### Practice Exercise

What do you predict will be discussed in paragraph 16?

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## Comprehension Quiz

Directions: For each comprehension question below, use information from the selection to determine the correct answer. You may refer to the selection as you answer the questions. Write your answer in the space provided.

### *True or False*

- \_\_\_\_\_ 1. Much of the material on the Web is available free because of the personal generosity of authors and because of the public relations efforts of corporations.
- \_\_\_\_\_ 2. Government sources on the Web are generally viewed as reliable.
- \_\_\_\_\_ 3. The Web has a disproportionate amount of computer information on it because the creators of the Web constructed it that way.
- \_\_\_\_\_ 4. The Web is becoming a vast mountain of junk information, bigotry, violence, and pornography.
- \_\_\_\_\_ 5. In the foreseeable future, no fee will be charged for information on the Web.
- \_\_\_\_\_ 6. Articles posted on the Web cannot exceed a certain length.

### *Multiple-Choice*

- \_\_\_\_\_ 7. One of the most popular reasons that so many companies have started using the Web is that
  - a. it is the fastest way to share free information.
  - b. it is an inexpensive way to carry out public relations.
  - c. there is a prospect of making money directly through it.
  - d. it contains a wide variety of information.
- \_\_\_\_\_ 8. Which of the following is *not* an example of something currently available free on the Web?
  - a. product catalogs and consumer information
  - b. information from news organizations
  - c. online library card catalogs
  - d. new books, such as those found in a typical bookstore or library
- \_\_\_\_\_ 9. Which of the following sites would be useful if you wanted to learn more about new safety features on sport utility vehicles?
  - a. [www.promo.net/pg](http://www.promo.net/pg)
  - b. [www.pueblo.gsa.gov](http://www.pueblo.gsa.gov)
  - c. [www.news.com](http://www.news.com)
  - d. [superpages.gte.net](http://superpages.gte.net)

- \_\_\_\_\_ 10. One of the ongoing problems in the electronic world of the World Wide Web is how to
- recover the costs of creating and presenting information.
  - share information in an organized way.
  - find information that is useful and reliable.
  - reduce the amount of information that is being added to the Web.

## SELECTION 2-1

## Information Technology

## Extend Your Vocabulary by Using Context Clues

*Directions: Context clues* are words in a sentence that allow the reader to deduce (reason out) the meaning of an unfamiliar word in that sentence. For each vocabulary item below, a sentence from the selection containing an important word (*italicized, like this*) is quoted first. Next, there is an additional sentence using the word in the same sense and providing another context clue. Use the context clues from *both* sentences to deduce the meaning of the italicized word. *Be sure the answer you choose makes sense in both sentences.* If you discover that you must use a dictionary to confirm an answer choice, remember that the meaning you select must still fit the context of *both* sentences. To indicate your answer, write the letter in the space provided.

*Pronunciation key:* ă pat ā pay âr care ä father ě pet ē be ĭ pit  
 ī tie îr pier ǒ pot ō toe ô paw oi noise ou out oō took ōō boot  
 ŭ cut yōō abuse ûr urge th thin th this hw which zh vision  
 ə about  
*Stress mark:* '

- \_\_\_\_\_ 1. *Detractors* of the World Wide Web are fond of saying that “anybody can put anything on the Web,” with the implication that the Web is one vast mountain of junk information, bigotry, ignorance, and pornography.
- The president’s admirers insist that he signed the bill because he genuinely cares about the elderly, but his *detractors* say that he signed it only for political reasons.
- detractors** (dĭ trăkt’ ərz)
- people who speak ill of someone
  - people who voted for a candidate
  - people who want to change someone or something
  - people who support someone or something
- \_\_\_\_\_ 2. Federal and state governments *post* laws, proposed legislation, consumer information, research documents, and statistics to the Web.

Our college placement office has decided to *post* job openings on bulletin boards in the Student Center.

**post** (pōst)

- a. to send through the mail
- b. to keep a record of
- c. to display in a place of public view
- d. to record on paper

- \_\_\_\_\_ 3. However, you will be able to find some works that have been posted, either into the *public domain* or as part of a promotion.

Because the works of Shakespeare were first published in the late 1500s and early 1600s, they are in the *public domain*, and anyone can republish them today.

**public domain** (pŭb' lĭk dō mān')

- a. an open area
- b. publications that are not protected under copyright
- c. something controlled by the public
- d. an area that is highly visible

- \_\_\_\_\_ 4. The inventors of the Web, and the first few million people who began to use it, were very interested in computers and computer technology, so the Web has always had a *disproportionate* amount of computer information on it.

My roommate is always beautifully dressed, but it is because she spends a *disproportionate* amount of her salary on clothes.

**disproportionate** (dĭs prə pōr' shən nĭt)

- a. unusually small
- b. not quantifiable; cannot be calculated
- c. undetectable
- d. out of proportion in amount

- \_\_\_\_\_ 5. One of the driving forces that have caused many companies to rush to the Web is the *prospect* of making money directly through it.

Terry accepted the lower-paying job because she felt it offered a much better *prospect* for advancement in the long run.

**prospect** (prōs' pĕkt)

- a. reason
- b. unexpected outcome
- c. possibility
- d. undesirable result

- \_\_\_\_\_ 6. How to *recover* the costs of creating and presenting information is one of the ongoing problems in the electronic world.

Because they won their lawsuit against the swimming pool company, the Smiths were able to *recover* all of the money they paid for the poorly constructed pool.

**recover** (rĭ küv' əɾ)

- a. repay; pay back
- b. reinvest
- c. regain; get back
- d. return; give back

- \_\_\_\_\_ 7. Some papers have freely available *archives* of past issues, while others want to sell past articles at prices substantially higher than a copy of the entire original paper.

While doing genealogical research, I studied old newspapers, books of deeds, birth certificates, marriage records, and other *archives* that pertained to my ancestors.

**archives** (är' kĭvs)

- a. copies of documents no longer in existence
- b. altered versions of old documents
- c. collections of records, documents, and other materials of historical interest
- d. stories handed down orally

- \_\_\_\_\_ 8. For the *foreseeable* future, however, at least some resources on the Web will be available only for a fee.

It is puzzling why people choose to drink too much alcohol when they know they will be driving; the results are *foreseeable* to anyone.

**foreseeable** (fôr sē' ə bəl)

- a. fortunate or positive
- b. unable to be explained
- c. unlikely
- d. able to be known beforehand

- \_\_\_\_\_ 9. There are several *proprietary* databases of periodical articles, which allow you to read and print copyrighted materials for a fee.

Pharmaceutical companies have *proprietary* rights for drugs they develop; however, after a certain number of years, other companies are free to manufacture generic versions of the drug.

**proprietary** (prə prī' ĭ tēr ē)

- a. freely available
- b. owned by a private individual or corporation under a trademark or patent
- c. issued by a local government
- d. granted to the public

- \_\_\_\_\_ 10. There are billions of dollars' worth of copyrighted *intellectual property* in the world, in the form of books, movies, music, articles in periodicals, photographs, and the like.

Because people sometimes steal other people's ideas and artistic creations, such as a melody, there are now attorneys who specialize in *intellectual property* rights.

**intellectual property** (ĩn tl ěk' chōō əl prŏp' ər tē)

- a. pertaining to land on which an educational institution is situated
- b. pertaining to an original or innovative idea
- c. pertaining to inventors
- d. pertaining to something produced by the mind

SELECTION 2-1

Information Technology



Collaboration Option

## Respond in Writing

*Directions:* Refer to the selection as needed to answer the essay-type questions below.

*Option for collaboration:* Your instructor may direct you to work with other students or, in other words, to work *collaboratively*. In that case, you should form groups of three or four students as directed by your instructor and work together to complete the exercises. After your group discusses each item and agrees on the answer, have a group member record it. Every member of your group should be able to explain all of your group's answers.

1. Access to the information and material on the World Wide Web offers vast benefits. However, anyone can post almost anything on the World Wide Web. What are some of the negative aspects of having an unregulated World Wide Web?

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Are there things that you think should *never* be allowed on the World Wide Web?

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2. Do you think the time will come when most people do nearly all of their shopping on the World Wide Web? Why or why not?

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3. Books, newspapers, magazines, maps, and all sorts of other printed material appear on the World Wide Web. Do you think that the Web will ever replace libraries, bookstores, and newsstands? Explain why or why not.

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4. **Overall main idea.** What is the overall main idea the author wants the reader to understand about what is available on the World Wide Web? Answer this question in one sentence.

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### Read More about It on the World Wide Web

To learn more about the topic of this selection, visit these websites or use your favorite search engine (such as Yahoo®). Whenever you go to *any* website, it is a good idea to evaluate it critically. Are you getting good information—information that is accurate, complete, and up-to-date? Who sponsors the website? How easy is it to use the features of the website?

Here are descriptions of some of the websites mentioned in the selection:

<http://www.nationalgallery.org.uk/>

*This is The National Gallery of London website. It contains approximately 2,300 paintings, including many instantly recognizable masterpieces, and covers every European school of painting from 1260 to 1900.*

<http://www.news.com>

*This is the CNET News website, the source of information for computer users.*

<http://www.melvyl.ucop.edu>

*This site is The California Digital Library (CDL), which is responsible for the design, creation, and implementation of systems that support the shared collections of the University of California.*

<http://www.pueblo.gsa.gov/>

*This page presents everything you ever wanted to know about the Federal Consumer Information Center.*

<http://www.promo.net/pg/history.html>

*Project Gutenberg is the brainchild of historian and writer Michael Hart, who believes that famous and important texts should be made freely available to everyone.*

<http://www.gerber.com>

*The Gerber Parents Resource Center website is a site that answers parenting questions.*

<http://www.amazon.com>

*Amazon.com is a retail website specializing in books and carries other products.*



**THE YELLOW RIBBON**

By Pete Hamill

**Prepare Yourself to Read***Directions:* Do these exercises *before* you read Selection 2-2.

1. This short story is more exciting without a complete preview. For that reason, read *only* the title, the introduction (in *italics*), and the first paragraph.

What comes to your mind when you think of a yellow ribbon?

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Who are the characters in the story?

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What is taking place?

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2. As you read the rest of the selection, try to answer these questions:

Who is Vingo?

Why is he on the bus?

**Apply Comprehension Skills***Directions:* Do the practice exercises as you read Selection 2-2.

**Adjust your reading rate.** On the basis of your preview and your prior knowledge about computers, do you think you should read Selection 2-2 slowly or rapidly?

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**Develop a college-level vocabulary.** Did you notice any unfamiliar words while you were previewing Selection 2-2? If so, list them here.

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**Predict as you read.** As you read Selection 2-2, make predictions about what the author will discuss next. Write your predictions in the blanks provided.

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## THE YELLOW RIBBON

*Perhaps you have heard the old Tony Orlando and Dawn song “Tie a Yellow Ribbon ’Round the Old Oak Tree.” The inspiration for it undoubtedly came from this wonderful short story. Today, ribbons of different colors are often worn to show support for various causes. For Vingo, the main character in this story, yellow ribbons have a very special significance.*

- 1 They were going to Fort Lauderdale, the girl remembered later. There were six of them, three boys and three girls, and they picked up the bus at the old terminal on 34th Street, carrying sandwiches and wine in paper bags, dreaming of golden beaches and the tides of the sea as the gray cold spring of New York vanished behind them. Vingo was on board from the beginning.
- 2 As the bus passed through Jersey and into Philly, they began to notice that Vingo never moved. He sat in front of the young people, his dusty face masking his age, dressed in a plain brown ill-fitting suit. His fingers were stained from cigarettes and he chewed the inside of his lip a lot, frozen into some personal cocoon of silence.
- 3 Somewhere outside of Washington, deep into the night, the bus pulled into a Howard Johnson’s, and everybody got off except Vingo. He sat rooted in his seat, and the young people began to wonder about him, trying to imagine his life: Perhaps he was a sea captain, maybe he had run away from his wife, he could be an old soldier going home. When they went back to the bus, the girl sat beside him and introduced herself.
- 4 “We’re going to Florida,” the girl said brightly. “You going that far?”
- 5 “I don’t know,” Vingo said.
- 6 “I’ve never been there,” she said. “I hear it’s beautiful.”
- 7 “It is,” he said quietly, as if remembering something he had tried to forget.
- 8 “You live there?”
- 9 “I did some time there in the Navy. Jacksonville.”
- 10 “Want some wine?” she said. He smiled and took the bottle of Chianti and took a swig. He thanked her and retreated again into his silence. After a while, she went back to the others, as Vingo nodded in sleep.

### Practice Exercises

*Directions:* At each of the points indicated below, answer the question, “What do you predict will happen next?”

### Practice Exercise

What do you predict will happen next?

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11 In the morning they awoke outside another Howard Johnson's, and this time Vingo went in. The girl insisted that he join them. He seemed very shy and ordered black coffee and smoked nervously, as the young people chattered about sleeping on the beaches. When they went back on the bus, the girl sat with Vingo again, and after a while, slowly and painfully and with great hesitation, he began to tell his story. He had been in jail in New York for the last four years, and now he was going home.

12 "Four years!" the girl said. "What did you do?"

13 "It doesn't matter," he said with quiet bluntness. "I did it and I went to jail. If you can't do the time, don't do the crime. That's what they say and they're right."

14 "Are you married?"

15 "I don't know."

16 "You don't know?" she said.

17 "Well, when I was in the can I wrote to my wife," he said. "I told her, I said, Martha, I understand if you can't stay married to me. I told her that. I said I was gonna be away a long time, and that if she couldn't stand it, if the kids kept askin' questions, if it hurt her too much, well, she could just forget me. Get a new guy—she's a wonderful woman, really something—and forget about me. I told her she didn't have to write me or nothing. And she didn't. Not for three-and-a-half years."

18 "And are you going home now, not knowing?"

19 "Yeah," he said shyly. "Well, last week, when I was sure the parole was coming through I wrote her. I told her that if she had a new guy, I understood. But if she didn't, if she would take me back she should let me know. We used to live in this town, Brunswick, just before Jacksonville, and there's a great big oak tree just as you come into town, a very famous tree, huge. I told her if she would take me back, she should put a yellow handkerchief on the tree, and I would get off and come home. If she didn't want me, forget it, no handkerchief, and I'd keep going on through."

20 "Wow," the girl said. "Wow."

21 She told the others, and soon all of them were in it, caught up in the approach of Brunswick, looking at the pictures Vingo showed them of his wife and three children, the woman handsome in a plain way, the children still unformed in a cracked, much-handled snapshot.



What special meaning did the yellow ribbons hold for the main character in this story?  
(Eric Kamp/Index Stock)

### Practice Exercise

What do you predict will happen next?

Now they were 20 miles from Brunswick and the young people took over window seats on the right side, waiting for the approach of the great oak tree. Vingo stopped looking, tightening his face into the ex-con's mask, as if fortifying himself against still another disappointment. Then it was 10 miles, and then five and the bus acquired a dark hushed mood, full of silence, of absence, of lost years, of the woman's plain face, of the sudden letter on the breakfast table, of the wonder of children, of the iron bars of solitude.

22 Then suddenly all of the young people were up out of their seats, screaming and shouting and crying, doing small dances, shaking clenched fists in triumph and exaltation. All except Vingo.

23 Vingo sat there stunned, looking at the oak tree. It was covered with yellow handkerchiefs, 20 of them, 30 of them, maybe hundreds, a tree that stood like a banner of welcome blowing and billowing in the wind, turned into a gorgeous yellow blur by the passing bus. As the young people shouted, the old con slowly rose from his seat, holding himself tightly, and made his way to the front of the bus to go home.

*Source:* Pete Hamill, "The Yellow Ribbon," *New York Post*, 1972. Copyright 1972 by Pete Hamill. Reprinted by permission of International Creative Management, Inc.

### Practice Exercise

What do you predict will happen next?

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**Comprehension Quiz**

*Directions:* For each comprehension question below, use information from the selection to determine the correct answer. You may refer to the selection as you answer the questions. Write your answer in the space provided.

*True or False*

- \_\_\_\_\_ 1. Six young people boarded a bus for a summer vacation in Florida.
- \_\_\_\_\_ 2. Vingo told his story to a young woman on the train.
- \_\_\_\_\_ 3. The author states that Vingo's wife was foolish.
- \_\_\_\_\_ 4. Vingo was traveling to his home in Jacksonville, Florida.

*Multiple-Choice*

- \_\_\_\_\_ 5. Vingo's prison experience had left him
- unfeeling and uncaring.
  - feeling that he had paid his debt to society by serving his jail sentence.
  - feeling suicidal.
  - feeling that he had been imprisoned unjustly.
- \_\_\_\_\_ 6. According to the author, when Vingo saw the yellow handkerchiefs, he felt
- relieved.
  - sad
  - stunned.
  - disappointed.
- \_\_\_\_\_ 7. To Vingo, the yellow handkerchiefs tied to the oak tree meant
- an approaching holiday.
  - welcome home for returning soldiers.
  - nothing.
  - forgiveness and a new start.
- \_\_\_\_\_ 8. At the end of the story, we can conclude that Vingo's wife was
- forgiving.
  - bitter.
  - unforgiving.
  - revengeful.
- \_\_\_\_\_ 9. The six young people were traveling to Florida from
- New Jersey.
  - Philadelphia.
  - New York.
  - Washington.

- \_\_\_\_\_ 10. Perhaps the lesson the young people learned from Vingo's story is that
- despite the hardships of life, there is an opportunity for happiness if one is willing to try again.
  - Vingo's wife was justified in not allowing him to return.
  - for an ex-con, there is not much chance for happiness.
  - there are some things that no marriage can survive.

## SELECTION 2-2

## Literature

## Extend Your Vocabulary by Using Context Clues

*Directions: Context clues* are words in a sentence that allow the reader to deduce (reason out) the meaning of an unfamiliar word in that sentence. For each vocabulary item below, a sentence from the selection containing an important word (*italicized, like this*) is quoted first. Next, there is an additional sentence using the word in the same sense and providing another context clue. Use the context clues from *both* sentences to deduce the meaning of the italicized word. *Be sure the answer you choose makes sense in both sentences.* If you discover that you must use a dictionary to confirm an answer choice, remember that the meaning you select must still fit the context of both sentences. To indicate your answer, write the letter in the space provided.

*Pronunciation key:* ă pat ā pay âr care ä father ě pet ē be ĭ pit  
 ī tie îr pier ǒ pot ō toe ô paw oi noise ou out ǒ took ō boot  
 ŭ cut yō abuse ūr urge th thin th this hw which zh vision  
 ə about  
*Stress mark:* '

- \_\_\_\_\_ 1. There were six of them, three boys and three girls, and they picked up the bus at the old *terminal* on 34th Street.
- Before the days of airplanes, every small and large town had a train *terminal*.
- terminal** (tûr' mənəl) means:
- fatal illness
  - dock or pier
  - bus stop
  - station, especially one that is the final stop at either end of a railway or bus line
- \_\_\_\_\_ 2. They were dreaming of golden beaches and the tides of the sea as the gray cold spring of New York *vanished* behind them.
- No one knew what happened to Mrs. Martin's diamond necklace; it simply *vanished* from her jewelry box during the dinner party.

**vanished** (văn' isht) means:

- a. disappeared
- b. intensified
- c. grew smaller
- d. exploded

- \_\_\_\_\_ 3. His fingers were stained from cigarettes and he chewed the inside of his lip a lot, frozen into some personal *cocoon* of silence.

The fluffy sleeping bag provided a cozy *cocoon* for the drowsy child.

**cocoon** (kə kōōn') means:

- a. wool blanket
- b. pupal case spun by the larvae of moths and other insects
- c. protective covering
- d. coat

- \_\_\_\_\_ 4. He sat *rooted* in his seat, and the young people began to wonder about him, trying to imagine his life.

Connie wanted to run from the barking dog, but she was so terrified that her feet seemed *rooted* in the ground.

**rooted** (rōōt' əd) means:

- a. buried
- b. bored or uninterested
- c. frightened
- d. firmly established or anchored

- \_\_\_\_\_ 5. He smiled and took the bottle of Chianti and took a *swig*.

The hot, thirsty tennis player finished his sports drink in a single *swig*.

**swig** (swĭg) means:

- a. glance
- b. insult or offense
- c. large swallow or gulp
- d. taste

- \_\_\_\_\_ 6. Well, when I was in the *can*, I wrote to my wife.

Mike said that John was sentenced to 30 days in the *can* for reckless driving.

**can** (kăn) means:

- a. rehabilitation center
- b. jail or prison
- c. food container
- d. small town

- \_\_\_\_\_ 7. Vingo stopped looking, tightening his face into an ex-con's mask, as if *fortifying* himself against still another disappointment.

The coach spent half-time *fortifying* his team's sagging morale.

**fortifying** (fôr' tə fī ŋ) means:

- a. improving
- b. strengthening
- c. fooling by means of a clever trick
- d. making happy or cheerful

- \_\_\_\_\_ 8. Then it was 10 miles, and then five and the bus acquired a dark hushed mood, full of silence, of absence, of lost years, of the woman's plain face, of the sudden letter on the breakfast table, of the wonder of children, of the iron bars of *solitude*.

Because he liked *solitude*, the artist often took long walks in the early morning hours when the beach was deserted.

**solitude** (sōl' ĭ tōd) means:

- a. isolation or being alone
- b. quietude or silence
- c. loneliness
- d. beauty

- \_\_\_\_\_ 9. Then suddenly all of the young people were up out of their seats, screaming and shouting and crying, doing small dances, shaking clenched fists in triumph and *exaltation*.

Nothing could top the *exaltation* I felt when I received my college diploma at the graduation ceremony.

**exaltation** (ĭgs əl tǎ' shən) means:

- a. calm, reflective mood
- b. disappointment
- c. delight or elation
- d. memory or recollection

- \_\_\_\_\_ 10. The tree was covered with yellow handkerchiefs, 20 of them, 30 of them, maybe hundreds, a tree that stood like a banner of welcome blowing and *billowing* in the wind.

When the wind came up, the sails of the boat began *billowing* like open parachutes.

**billowing** (bĭl' ō ing) means:

- a. folding and unfolding
- b. disintegrating
- c. swelling or surging
- d. flapping



## SELECTION 2-2

## Literature



Collaboration Option

**Respond in Writing**

*Directions:* Refer to the selection as needed to answer the essay-type questions below.

*Option for collaboration:* Your instructor may direct you to work with other students or, in other words, to work *collaboratively*. In that case, you should form groups of three or four students as directed by your instructor and work together to complete the exercises. After your group discusses each item and agrees on the answer, have a group member record it. Every member of your group should be able to explain all of your group's answers.

1. Yellow ribbons are still used to welcome someone home. Can you think of some examples of whom they might be used to welcome?

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2. Ribbons of different colors are often worn to show support for various causes. Give one or more examples. Describe the color of the ribbon and the cause.

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3. How did you feel when you read about the “gorgeous yellow blur” that awaited Vingo?

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4. On the basis of what you learned about Vingo in this selection, do you feel he deserved to be forgiven? Explain your answer.

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5. This story seems to illustrate several truths about life. What are some of the truths that the story reveals?

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6. **Overall main idea.** What is the overall main idea the author wants the reader to understand? Answer this question in one sentence.

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### Read More about It on the World Wide Web

To learn more about the topic of this selection, visit these websites or use your favorite search engine (such as Yahoo®). Whenever you go to any website, it is a good idea to evaluate it critically. Are you getting good information—information that is accurate, complete, and up-to-date? Who sponsors the website? How easy is it to use the features of the website?

<http://cjr.org/year/97/3/hamill.asp>

*This is the Columbia Journalism Review website, which presents an article on Pete Hamill, the author of the short story used for this selection.*

<http://www.yellowribbon.org/>

*This is the Yellow Ribbon Suicide Prevention Program site. Because of the internal nature of depression and loneliness, thousands of young people who appear to be happy are suffering silently in emotional pain. YRSPP offers a way for teens to reach out and seek help.*



**A WHALE OF A SURVIVAL PROBLEM**From *The Nature of Life*

By John Postlethwait and Janet Hopson

**Prepare Yourself to Read***Directions:* Do these exercises *before* you read Selection 2-3.

1. First, read and think about the title. What kinds of things do you think threaten the survival of whales?

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

Introduction (in *italics*)

First paragraph (paragraph 1)

First sentence of each paragraph

Words in *italics*

Diagram

All of the last paragraph (paragraph 4)

On the basis of your preview, what specific problem of whale survival do you think will be discussed?

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**Apply Comprehension Skills***Directions:* Do these exercises as you read Selection 2-3.

**Adjust your reading rate.** On the basis of your preview and your prior knowledge of how whales survive, do you think you should read Selection 2-3 slowly or rapidly?

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**Develop a college-level vocabulary.** Did you notice any unfamiliar words while you were previewing Selection 2-3? If so, list them here.

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**Predict as you read.** As you read Selection 2-3, make predictions about what the authors will discuss next. Write your predictions in the blanks provided.

## A WHALE OF A SURVIVAL PROBLEM

*Blue whales are the largest animals on earth. Unfortunately, they have been hunted almost to extinction and are now on the endangered species list. Human predators have not been their only problem, however. Their size alone presents unique challenges for survival. This textbook selection explores the biological adaptations this immense creature has had to make in order to survive.*

1 An intrepid visitor to the perpetually frozen Antarctic could stand at the coastline, raise binoculars, and witness a dramatic sight just a few hundred meters offshore: a spout as tall and straight as a telephone pole fountaining upward from the blowhole of a blue whale (*Balaenoptera musculus*), then condensing into a massive cloud of water vapor in the frigid air. The gigantic animal beneath the water jet would be expelling stale air from its 1-ton lungs after a dive in search of food. Then, resting at the surface only long enough to take four deep breaths of fresh air, the streamlined animal would raise its broad tail, thrust mightily, and plunge into the ocean again. The observer on shore might see such a sequence only twice per hour, since the blue whale can hold its breath for 30 minutes as it glides along like a submarine, swallowing trillions of tiny shrimplike animals called krill.

2 It is difficult to comprehend the immense proportions of the blue whale, the largest animal ever to inhabit our planet. At 25 to 30 m (80 to 100 ft) in length, this marine mammal is longer than three railroad boxcars and bigger than any dinosaur that ever lumbered on land. It weighs more than 25 elephants or 1600 fans at a basketball game. Its heart is the size of a beetle—a Volkswagen beetle. And that organ pumps 7200 kg (8 tons) of blood through nearly 2 million kilometers (1.25 million miles) of blood vessels, the largest of which could accommodate an adult person crawling on hands and knees. The animal has a tongue the size of a grown elephant. It has 45,500 kg (50 tons) of muscles to move its 54,500 kg (60 tons) of skin, bones, and organs. And this living mountain can still swim at speeds up to 48 km (30 mi) per hour!

## Practice Exercises

*Directions:* At each of the points indicated below, answer the question, “What do you predict will happen next?”

The blue whale is the largest creature on earth.  
(Tom Walker/Stock Boston)



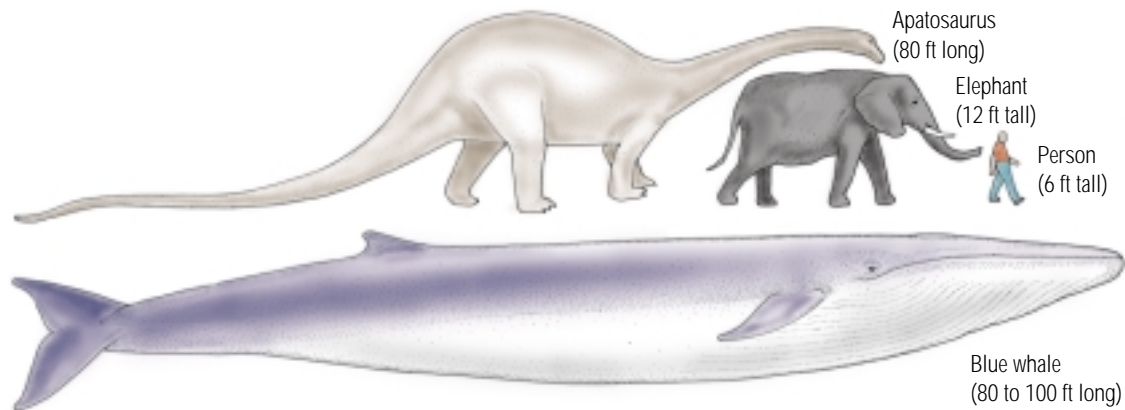
3 Leviathan proportions aside, it is difficult to grasp the enormous problems that so large an organism must overcome simply to stay alive. For starters, a blue whale is a warm-blooded animal with a relatively high metabolic rate; to stay warm and active in an icy ocean environment, it must consume and burn 1 million kilocalories a day. This it does by straining 3600 kg (8000 lb) of krill from the ocean water each day on special food-gathering sieve plates. In addition, each of the trillions of cells in the whale's organs must exchange oxygen and carbon dioxide, take in nutrients, and rid itself of organic wastes, just as a single-celled protozoan living freely in seawater must do. Yet a given whale cell—a liver cell, let's

#### Practice Exercise

What do you predict will be discussed in paragraph 3?

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*A whale to scale.* A blue whale is longer and far heavier than an elephant or even an *Apatosaurus* (formerly *Brontosaurus*), the longest land animal that ever lived.

say—can lie deep in the body, separated from the environment by nearly 2 m (6 ft) of blubber, muscle, bone, and other tissues. For this reason, the whale needs elaborate transport systems to deliver oxygen and nutrients and to carry away carbon dioxide and other wastes. Finally, the galaxy of living cells inside a whale must be coordinated and controlled by a brain, a nervous system, and chemical regulators (hormones) so that the organism can function as a single unit.

- 4 Although blue whales are the largest animals that have ever lived, they share with all other animals the same fundamental physical problems of day-to-day survival: how to extract energy from the environment; how to exchange nutrients, wastes, and gases; how to distribute materials to all the cells in the body; how to maintain a constant internal environment despite fluctuations in the external environment; how to support the body; and how to protect it from attackers or from damaging environmental conditions. Blue whales have evolved with unique adaptations of form and function that meet such challenges and leave the animals suited to their way of life.

#### Practice Exercise

What do you predict will be discussed in paragraph 4?

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*Source:* John Postlethwait and Janet Hopson, "A Whale of a Survival Problem," in *The Nature of Life*, McGraw-Hill, New York, 1992, pp. 430–431. Reproduced with permission of McGraw-Hill.



## SELECTION 2-3

## Biology



## Comprehension Quiz

*Directions:* For each comprehension question below, use information from the selection to determine the correct answer. You may refer to the selection as you answer the questions. Write your answer in the space provided.

*True or False*

- \_\_\_\_\_ 1. The blue whale expels water through its blowhole.
- \_\_\_\_\_ 2. The blue whale can hold its breath for more than 1 hour as it glides under water.
- \_\_\_\_\_ 3. The blue whale feeds daily on trillions of tiny shrimplike animals called krill.
- \_\_\_\_\_ 4. Although large, the blue whale is not the largest animal that inhabits our earth.
- \_\_\_\_\_ 5. A human adult could crawl on hands and knees through the largest blood vessels of a blue whale.

*Multiple-Choice*

- \_\_\_\_\_ 6. In paragraph 1, “a spout as tall and straight as a telephone pole fountaining upward from the blowhole of a blue whale,” refers to
- ice.
  - saltwater.
  - fresh air.
  - stale air that has condensed into water vapor.
- \_\_\_\_\_ 7. The “living mountain” mentioned in paragraph 2 refers to
- the dinosaur.
  - 8000 pounds of krill.
  - the blue whale.
  - a grown elephant.
- \_\_\_\_\_ 8. After diving for food, the blue whale surfaces and
- expels stale air through its blowhole, then dives quickly again.
  - expels stale air, rests long enough to take four breaths of fresh air, then dives again.
  - expels stale air, rests on the surface for 30 minutes, then dives again.
  - none of the above.

- \_\_\_\_\_ 9. Which of the following problems of day-to-day survival does the blue whale share with all other animals?
- how to extract energy (food) from the environment
  - how to distribute materials to all the cells in the body
  - how to balance the internal environment with the changes in the external environment
  - all of the above
- \_\_\_\_\_ 10. Because the blue whale is a warm-blooded animal and has a relatively high metabolic rate, it must
- rid itself of organic wastes.
  - expel stale air through its blowhole.
  - consume and burn 1 million kilocalories a day in order to stay warm and active in the icy ocean.
  - take four deep breaths of fresh air before diving again for food.

## SELECTION 2-3

## Biology

## Extend Your Vocabulary by Using Context Clues

*Directions: Context clues* are words in a sentence that allow the reader to deduce (reason out) the meaning of an unfamiliar word in that sentence. For each vocabulary item below, a sentence from the selection containing an important word (*italicized, like this*) is quoted first. Next, there is an additional sentence using the word in the same sense and providing another context clue. Use the context clues from *both* sentences to deduce the meaning of the italicized word. *Be sure the answer you choose makes sense in both sentences.* If you discover that you must use a dictionary to confirm an answer choice, remember that the meaning you select must still fit the context of both sentences. To indicate your answer, write the letter in the space provided.

*Pronunciation key:* ă pat ā pay âr care ä father ě pet ē be ĭ pit  
 ī tie îr pier ǒ pot ō toe ô paw oi noise ou out ǒ took ō boot  
 ŭ cut yō abuse ûr urge th thin th this hw which zh vision  
 ə about  
*Stress mark:* '

- \_\_\_\_\_ 1. An *intrepid* visitor to the perpetually frozen Antarctic could stand at the coastline, raise binoculars, and witness a dramatic sight just a few hundred meters off shore.
- Columbus was an *intrepid* explorer who set sail for the unknown New World.

**intrepid** (in trĕp' ĭd) means:

- a. extremely cold
- b. fun-loving
- c. fearless; bold
- d. weary; fatigued

- \_\_\_\_\_ 2. An intrepid visitor to the *perpetually* frozen Antarctic could stand at the coastline, raise binoculars, and witness a dramatic sight just a few hundred meters off shore.

The Earth moves *perpetually* around the sun.

**perpetually** (pĕr pĕch' ōō əl lē) means:

- a. forever
- b. partially
- c. erratically
- d. once a month

- \_\_\_\_\_ 3. An intrepid visitor to the perpetually frozen Antarctic could stand at the coastline, raise binoculars, and witness a dramatic sight just a few hundred meters off shore: a spout as tall and as straight as a telephone pole fountaining upward from the blow hole of a blue whale, then *condensing* into a massive cloud of water vapor in the frigid air.

When you turn on your car heater in the winter, water vapor may start *condensing* and running down the inside of the windows.

**condensing** (kən dĕns' ĭng) means:

- a. turning into steam
- b. changing from a gas into a liquid
- c. becoming colder
- d. changing from a liquid into a solid

- \_\_\_\_\_ 4. An intrepid visitor to the perpetually frozen Antarctic could stand at the coastline, raise binoculars, and witness a dramatic sight just a few hundred meters off shore: a spout as tall and as straight as a telephone pole fountaining upward from the blow hole of a blue whale, then condensing into a massive cloud of water vapor in the *frigid* air.

Snowflakes began to fall from the gray, *frigid* sky.

**frigid** (frĭj' ĭd) means:

- a. smoky
- b. dry
- c. starry
- d. extremely cold

- \_\_\_\_\_ 5. The gigantic animal beneath the water jet would be *expelling* stale air from its 1-ton lungs after a dive in search of food.

Our college is *expelling* five students for cheating on an exam.

**expelling** (ɪk spəl' ɪŋ) means:

- a. maintaining
- b. breathing out
- c. forcing out or ejecting
- d. preventing

- \_\_\_\_\_ 6. *Leviathan* proportions aside, it is difficult to grasp the enormous problems that so large an organism must overcome simply to stay alive.

The deep-sea fishermen swore they had seen a *leviathan*—a shark so huge that it was larger than their boat.

**leviathan** (lə vī' ə thən) means:

- a. something unusually large of its kind
- b. measuring device
- c. large shark
- d. huge ship

- \_\_\_\_\_ 7. For starters, a blue whale is a warm-blooded animal with a *relatively* high metabolic rate; to stay warm in an icy ocean environment, it must consume and burn 1 million kilocalories a day.

Our boss is usually very talkative, but he was *relatively* quiet at the staff meeting today.

**relatively** (rēl' ə tɪv lē) means:

- a. pertaining to family relationships
- b. pertaining to reality
- c. pertaining to a member of the family
- d. in comparison with something else

- \_\_\_\_\_ 8. For starters, a blue whale is a warm-blooded animal with a *relatively* high *metabolic* rate; to stay warm in an icy ocean environment, it must consume and burn 1 million kilocalories a day.

Exercise and stress increase a person's *metabolic* rate.

**metabolic** (mēt ə bōl' ɪk) means:

- a. pertaining to the speed at which an organism moves
- b. pertaining to bodily physical and chemical processes that maintain life
- c. pertaining to breathing and respiration
- d. pertaining to survival

- \_\_\_\_\_ 9. For this reason, the whale needs *elaborate* transport systems to deliver oxygen and nutrients and to carry away carbon dioxide and wastes.

The plans for the queen's coronation ceremony were so *elaborate* that it took a staff of 500 people to carry out the arrangements.

**elaborate** (ĭ lăb' ər ĭt) means:

- time-consuming
- very complex
- difficult to understand
- simple

- \_\_\_\_\_ 10. Finally, the *galaxy* of living cells inside a whale must be coordinated and controlled by a brain, a nervous system, and chemical regulators (hormones) so that the organism can function as a single unit.

From the dazzling *galaxy* of toys in the toy department, my young nephew finally selected a remote-controlled car.

**galaxy** (găl' ək sē) means:

- stars in the universe
- collection of numerous things
- system
- display

## SELECTION 2-3

## Biology



Collaboration Option

## Respond in Writing

*Directions:* Refer to the selection as needed to answer the essay-type questions below.

*Option for collaboration:* Your instructor may direct you to work with other students or, in other words, to work *collaboratively*. In that case, you should form groups of three or four students as directed by your instructor and work together to complete the exercises. After your group discusses each item and agrees on the answer, have a group member record it. Every member of your group should be able to explain all of your group's answers.

- Describe any three comparisons the author uses to illustrate the enormous size of the blue whale.

First comparison:

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Second comparison:

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Third comparison:

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2. Because of its size, what are three special problems that blue whales must overcome to survive?

One problem:

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Another problem:

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A third problem:

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3. Explain why the title of this selection is clever.

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4. **Overall main idea.** What is the overall main idea the author wants the reader to understand about the survival of the blue whale? Answer this question in one sentence.

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### Read More about It on the World Wide Web

To learn more about the topic of this selection, visit these websites or use your favorite search engine (such as Yahoo ®). Whenever you go to *any* website, it is a good idea to evaluate it critically. Are you getting good information—information that is accurate, complete, and up-to-date? Who sponsors the website? How easy is it to use the features of the website?

<http://www.physics.helsinki.fi/whale/>

*This website is part of the World Wide Web Virtual Library. It contains many interesting links related to whale watching. Click on links for research, view pictures, slide shows, videos, and even interspecies communication.*

<http://unisci.com/aboutunisci.shtml>

*Unisci was the first science daily news site on the Web and remains the only one that selects stories on the basis of their scientific importance. For more information on whale survival, type “whale” into archive search box.*

<http://www.encycarta.msn.com/find/Concise.asp?ti=035E4000>

*This part of an encyclopedia website features an overview of whales: types, anatomy, feeding habits, reproduction, intelligence, behavior, origins, etc. Blue whales are rorquals and are included in the section on baleen whales ( the category of whale which obtains food by filtering out small fish and crustaceans through the giant, flexible comb-like baleen in their mouths).*

<http://www.pacificwhale.org/>

*This is the website of the nonprofit Pacific Whale Foundation in Maui, Hawaii. It is dedicated to saving the oceans and the life they contain, especially the species of whales that are threatened with extinction. (The organization does not focus on blue whales alone.) The Foundation stresses marine research, education, and conservation.*

