

Comprehension

Learning Goals

In this chapter you will learn how to

- Comprehend What You Read SECTION ONE
- Be Curious
- Become a Better Reader
- Identify the Topic of a Reading
- Survey and Predict
- Develop Your Vocabulary SECTION TWO

PREVIEW OF TERMS

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SECTION ONE

What Is Comprehension?

In Harper Lee's classic novel *To Kill a Mockingbird*, the main character, Scout Finch, is scolded by her teacher on the first day of school because the teacher isn't happy that Scout's father Atticus has already taught her how to read. Her teacher's inflexible expectation—that children should learn to read only in school under the guidance of a qualified teacher—led Scout to mull over her “crime”:

I never deliberately learned to read, but somehow I had been wallowing illicitly in the daily papers. In the long hours of church—was it then I learned? I could not remember not being able to read hymns. Now that I was compelled to think about it, reading was something that just came to me, as learning to fasten the seat of my union suit without looking around, or achieving two bows from a snarl of shoelaces. I could not remember when the lines above Atticus's moving finger separated into words, but I had stared at them all the evenings in my memory, listening to the news of the day, Bills to Be Enacted into Laws, the diaries of Lorenzo Dow—anything Atticus happened to be reading when I crawled into his lap every night. Until I feared I would lose it, I never loved to read. One does not love breathing (pp. 17–18).

If it could only be as easy for all of us as it was for Scout, who recalls that “reading was something that just came to me.” Most of us, however, need to work a bit harder at reading. Scout, an exceptional critical thinker for her age, was open to reading anything and

everything, and her willingness to read whatever “Atticus happened to be reading” reveals one of the traits of a critical thinker to be covered in this chapter—curiosity.

In the last chapter, you learned what it means to be a critical thinker, reader, and writer and what character traits and skills are required. In this chapter, the focus is on **comprehension**, especially comprehension of texts. Comprehension is an understanding of information. Grasping information is a vital step toward becoming a critical reader and thinker. Section One of this chapter explores the trait of curiosity and the skills of identifying the topic, surveying, and predicting. Section Two focuses on the skill of developing vocabulary and shows what can happen if you make a mistake in comprehension.

If you were to ask people a simple question, “Why do you read?” you are likely to get a wide range of responses. Likely answers include, “Because I have to read for homework,” “Because I like to,” “Because I want to learn more,” or “Because I need to get specific information.” Scout might answer, “Because that’s what I do with Atticus.” A critical thinker might answer that “reading is one way to learn about the world,” revealing a desire to learn and grow intellectually. So, we will look at the trait of *curiosity* in depth in this chapter.

Reviewing the Critical Thinker’s Traits: Being Curious

Curiosity—specifically intellectual curiosity—refers to a longing to know more and a desire to seek out opportunities to learn. Another name for intellectual curiosity is inquisitiveness. Inquisitive people are not satisfied with unanswered questions! Instead, they will try to find out the answers to problems or issues. Intellectually curious people recognize that there is no end to the amount of information they can learn, and this fact excites rather than frustrates them. In addition, inquisitive people realize that they might not need the information right away (or perhaps they will never actually need or use the information), but that does not stop them from still wanting to seek answers and explanations.

“ Interest is the mother of intelligence. ”

—Dr. Henry Plotkin

In countries across the globe, oppressive governments have denied people opportunities to learn. Imagine how frustrating it would be for an intellectually curious person to be told she was not allowed to learn to read or attend school! Richard Wright, an African American who grew up in the segregated South in the early 1900s, was only able to attend school until ninth grade. As a child, curiosity prompted him to convince his mother to teach him how to read by using old newspapers. In his autobiography *Black Boy*, Wright reveals how a white co-worker helped him defy the law and check out books from the local library. Wright recalls, “I forged more notes and my trips to the library

became frequent. Reading grew into a passion. . . . I gave myself over to each novel without reserve, without trying to criticize it; it was enough for me to see and feel something different. And for me, everything was something different. Reading was like a drug, a dope. The novels created moods in which I lived for days.” The joy he felt from learning about new subjects in books inspired him to become a writer himself, and he wrote critically acclaimed classics such as *Native Son* and *Black Boy*.

Intellectually curious people obtain pleasure from the ability to read and research the unknown. Try putting yourself in Richard Wright’s shoes for a moment, and answer that question again, “Why do you read?”

Thinker to Emulate: Richard Wright

Richard Wright, born in 1908 in Mississippi, was an American author and critical thinker who tackled racial issues in his writing. After a difficult childhood marked by poverty and an unstable home life, he moved north, eventually settling in Chicago and New York City. Both his writing and his politics got attention: He wrote through the Federal Writers’ Project, became a member of the Communist Party, and explored racial injustice in several books. Notable works include *Uncle Tom’s Children*, *Native Son*, *Black Boy*, and *The Outsider*. *Native Son* was made into a play by Orson Welles in 1941 and a movie in Argentina in 1951 (Wright played the protagonist, Bigger Thomas, in the movie). Wright eventually left the Communist Party. A critical thinker who embraced intellectual and personal challenges, he continued to write and settled in Paris, France, where he died in 1960.

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Vechten Collection,
[LC-USZ62-42502]

Discussion Questions

PRACTICE 2-1

Directions: On a separate sheet of paper, answer the following questions. In pairs or small groups, discuss the answers to these prompts.

1. Brainstorm a list of subjects you don't know about but would like to learn more about. Next, make a plan about how you will learn more about the top two subjects on your list. Be specific; write down the steps involved.
2. Can you think of another creative way Richard Wright could have furthered his education?
3. What do you think of the cliché, "Ignorance is bliss"? How might a critical thinker respond to that question?

EXPAND YOUR UNDERSTANDING

Learning More about Intellectual Curiosity While Writing Critically

Use the Internet to research the following people and to see how they, like Richard Wright, sought out learning opportunities (sometimes by breaking or changing the law or by overcoming huge personal challenges).

Linda Brown (of *Brown vs. Board of Education*)
Frederick Douglass
Helen Keller



Richard Wright did not shy away from intellectual challenges. He recognized that there was much to learn and was curious enough to look for answers to his questions in newspapers and books. He also recognized that intellectual curiosity was a strength that could lead to a successful career. Here are some tips to help you develop your curiosity:

Tips for Critical Thinkers: How to Be Curious

- **Recognize when you need to learn more.** Acknowledge when you need more information and embrace the challenge of finding it.
- **See curiosity as a strength.** Recognize that intellectual curiosity is often an early, important step toward gaining new knowledge.
- **Begin with a topic that already interests you.** Think of some topics that intrigue you and approach them from a new angle. For example, if you love biking but do not know how to fix a flat tire or how to repair a broken gear, then seek out a way to learn how to perform simple bike repairs.
- **Get creative with research.** You don't always have to conduct your research by reading reference materials in a library or on the Internet. Instead, interview an expert in the field, enroll in a workshop, or find an educational DVD, podcast, or webcast.
- **Fight apathy.** Apathy, indifference or a lack of interest, has a wide variety of causes. While laziness, boredom, or indifference can certainly cause apathy, it can also be the result of health problems, not having enough to eat, depression, and other serious issues. Although we all feel apathetic occasionally, resist the urge to let apathy get in the way of your learning. Become someone who inspires others by your "can-do" approach to unanswered questions and problems. If your intellectual curiosity is being hindered by one of the more serious causes of apathy, seek help first, and then work toward an intellectual goal that inspires you.

- **Follow your interests on the Internet.** The Internet is a haven for the intellectually curious. For example, you can use the website StumbleUpon and get new information (catering to your interests) with the click of a mouse. You could also join a site such as <http://reddit.com> that provides readers with news and items of interest that have been voted upon (by the Reddit community) as being the best on the Internet. Or use the “random article” feature on Wikipedia, which is as easy as going to www.wikipedia.org and clicking on “Random Article” on the left-hand side of the home page.

Becoming a Better Reader

Comprehension—knowledge and understanding of information—is the first important skill of a critical thinker. While having the desire to read is an excellent start, it is not enough. If you expect to satisfy your curiosity through reading, then you need to make sure you fully comprehend what you read.

You are probably one of the many college students who finds reading to be easy in some situations and difficult in others. A history enthusiast breezes through *Guns, Germs, and Steel* yet struggles to get through a chapter on the cardiovascular system; you might find Toni Morrison’s novel *Beloved* intensely compelling but yawn while reading your chemistry textbook. Success in college largely depends on how well you master the skills of a critical thinker. As applied to reading, critical thinking involves comprehending and retaining information in textbooks, articles, and other written formats.

Frequently students claim to “hate” reading when the actual problem is that they are frustrated with their inability to comprehend what they read. We all tend to enjoy the activities we perform well and to avoid those we aren’t so good at. Learning and practicing new skills can sometimes be frustrating, but if you keep the goal in mind—becoming a better thinker and reader—you can keep a positive attitude.

Natalie Goldberg hits upon a common attitude in this excerpt from *Old Friend from Far Away* and gives readers a fresh way of looking at reading:

We start to read *Moby Dick* or *Heart of Darkness*, *Speak! Memory*, *Second Sex*, *Native Son*, *Don Quixote* and ten pages into it, we decide it’s too hard, it’s boring, we don’t like it. I’m sorry to say it does not matter what you think. Your opinion here isn’t important. We would be called immature if after ten minutes of meeting someone, we said to him, I don’t like you. And yet this is often exactly what we do when we encounter a few pages of a new book. Our job is to stay with the author’s words and see what we can learn. Push through. It takes a while to settle into a book’s territory.

Carry a book bag with you. Read while you are standing in line at the post office. Snatch a few pages on the bus. You can be transported to India, rather than being irked in the waiting room because your doctor is a half hour late for your exam. When you finally walk into his office, E. M. Forster is filling your lungs. You are in an exotic country as the doctor looks down your throat and into your eyes.

Reading has so many advantages. Not in the least, it is relaxing. You have an experience of spaciousness. Other places and people unfold inside you. Leaning over pages, still and quiet, you are exercising that big muscle in your head. If you keep toning it, it won’t become flabby, while all your other appendages hang south. And when you read, you might forget to eat—you are busy rowing up the Nile, crocodiles snapping at your oars. Has anyone before mentioned reading’s dietetic benefits?

March off to that library—or bookstore—right now: thousands of adventures and friends await you (pp. 156–157).

While a good attitude is not going to make a beginner golfer into Phil Mickelson, it sure will make golfing lessons more pleasant. The same is true of reading: A positive attitude makes learning the basic skills far more enjoyable. So, take a few moments now to think about your outlook toward reading and answer the following questions. Be honest with yourself.

Think About It: Your Reading Experience

The Past

1. What were your experiences with reading as a small child?

2. Did your parents, siblings, other family members, or caregivers read to you regularly? If so, when, and what kind of books (picture books, children's books, comics, newspapers, etc.)?

3. What was your favorite book as a child?

4. Did you read as an adolescent? Yes/No
5. What would you choose to do during your leisure time as an adolescent or teenager?

6. Did you have a lot of reading materials in your home? If so, what kind?

7. Did you read newspapers or magazines? If so, which ones?

8. How were your grades in reading classes?

9. Did you like reading about subjects such as science or history? Yes/No
10. Did comprehension problems keep you from getting the grades you felt you were capable of getting? Yes/No
11. Did you go to a public library and/or to your school library? How often?

12. What genres did you read? Realistic fiction? Science fiction? Fantasy? Mythology?
Poetry? Historical fiction? Nonfiction? Other?

13. Did you largely have positive or negative experiences with reading?

The Present

1. How do you feel when an instructor assigns a large amount of reading?

2. Where do you read?

3. Do you have a library card? Yes/No
4. Do you go to the school or public library frequently? Yes/No
5. How do you prefer to get your news?

6. If you see something interesting on TV or online, do you follow up by reading about or researching the topic? Yes/No
7. Do you subscribe to any newspapers or magazines? Yes/No
8. Do you read with other family members? Yes/No
9. How do you approach a textbook chapter? Do you use any pre-reading techniques? If so, list them below.

10. If you do not understand something that you have read, what do you do?

11. Does the idea of spending an afternoon with a book sound appealing to you? Yes/No

PRACTICE 2-2 Expand Your Understanding through Discussion

Directions: In pairs or small groups, discuss several of your answers to the above questions. As a group, pick one question from either “The Past” or “The Present” and assign one student to jot down your individual answers to share with the whole class later.

Because every student is unique, there is no “one-size-fits-all” solution to all challenges. You may find some strategies more useful to you than another student might, and you may find inspiration in unexpected places. No matter what your experiences with reading have been up to this point, you can always try something new that will help to turn you into a more effective, enthusiastic reader. Based on your answers above, think about some ways you could improve your attitude toward reading and become more successful at comprehending what you read. Then read the suggestions in the following box.

Think About It: How Can You Become a Better Reader?

The Future

1. **Look through the Table of Contents of this book.** Identify several concepts that you would like to learn more about or would consider implementing in your reading assignments this semester.
2. **Consider subscribing to a newspaper or periodical.** (You can also subscribe online.)
3. **Subscribe to an online service** like www.dictionary.com or www.wordsmith.org that delivers a new vocabulary word to your email inbox every day.
4. **Read more.** The more you practice reading, the better you will get at it.

While being open to change and embracing the challenges of comprehension can certainly help, many students share similar concerns when they face a challenging reading. In the following chart, some typical student concerns are listed along with potential solutions to them.

Student Comments	Possible Solutions
“Reading puts me to sleep.”	<ul style="list-style-type: none">• Make sure you are getting 7 to 8 hours of sleep per night.• Become more engaged in the reading by relating it to your life and your chosen career.• Change your location or position.• Read out loud.• Annotate (p. 46).
“There are too many words I have to look up in the dictionary.”	<ul style="list-style-type: none">• Improve your working vocabulary (p. 47).• Jot definitions in margins.• Use context clues (p. 47).
“I don’t get it. I just don’t understand.”	<ul style="list-style-type: none">• Survey the text before reading and make predictions.• Read out loud.• Check your predictions as you read (p. 73).
“I can’t remember anything after I put the book down.”	<ul style="list-style-type: none">• Make connections to your own life and interests.• Outline or map the information after you are done (p. 48).

Expand Your Understanding through Discussion

PRACTICE 2-3

Directions: Do you recognize yourself in any of the above comments? In pairs or small groups, discuss these comments and solutions. Assign one student to jot down a list of which strategies group members have found to be useful and which techniques they might want to try in the near future.

If you want to improve your comprehension, you will benefit from learning many skills and drawing upon a repertoire of strategies. Even people who read for a living (lawyers, editors, teachers, among others) use different strategies when they have problems with a particular text. A strategy as simple as slowing down and reading out loud might be enough in some reading situations. If one strategy does not work for you, try another.

In this chapter, we review several skills necessary to achieve reading success: identifying topic, surveying, and predicting (all in Section One), and building vocabulary (in Section Two). Take the time to learn these strategies, which will enable you to achieve what is really important: *comprehension* of what you read.

Identifying the Topic

You will have a hard time with comprehension if you do not recognize the **topic** of a reading. The topic, also known as the **subject**, is what the reading is about. Read the following paragraph, and see if you can figure out the answer to the question, “What is it about?”

First, Anne tried moving the piano into the kitchen, but it did not fit. While she liked the look of the sofa in the master bedroom, it was really better suited for the baby’s room, so she moved it as well. It was frustrating to her that the water in the sink and bathtub did not work, but she tried all of the faucets again anyway to no avail. The colors pink and purple were dominant in every room. In Anne’s humble opinion, the pink shutters did nothing for the exterior of the house, but that was nothing a little crayon couldn’t help.

Difficult, right? If you knew what the paragraph was about, the topic, then the details would make sense. (The topic is identified at the end of the chapter on p. 57; see for yourself if knowing it helps your comprehension.)

The paragraph about Anne lacks the clues we expect from a writer that help to indicate the topic or subject of a text. Specifically, it lacks two clues: title and repetition of key words. As a rule, the topic of a paragraph or longer reading can be stated in one word or a short phrase. The topic is often the quick and simple answer to the question, “What is it about?”

As you will learn in the next section, when you survey you can easily identify the topic (see pp. 41–44 for more detailed information about surveying). In textbooks, for example, the topic is frequently included in the title of the chapter. Subtopics are smaller topics within the general subject, and, in textbooks, they often appear as subheads. A biology textbook, for instance, might have *cells* as the topic of a chapter, and a likely subtopic would be *cell mitosis*, which would appear in a subhead.

Another way to identify the topic is by annotating the text (see pp. 83–85 for more detailed information about annotating). Often the topic, or synonyms for the topic, will be used several times throughout the course of a paragraph, chapter, or article. If you are underlining or highlighting key terms, then you should notice if the same words or phrases keep appearing.

A common mistake many students make when identifying the topic is picking a word or short phrase from the text that is either *too broad* or *general* or *too specific* or *detailed* to accurately describe the topic. Much like Goldilocks, you don’t want a topic that is “too big” or “too small”: You want to pinpoint the topic that is “just right.”

Say you are trying to rent an apartment and seek help from a realtor. You would neither tell the realtor you are looking for “a dwelling” (too broad/general), nor that you need “an apartment with 8.5’ ceilings, oak hardwood floors, and tan tiles in a diamond shape on the kitchen floor” (too specific/detailed); “a two-bedroom apartment” would suffice and get you the assistance you needed.

PRACTICE 2-4

Identifying the Topic

Directions: Read the following paragraphs to determine the topic of each by underlining key terms (or their synonyms) that are used more than once. Then look at the list of possible topics that follows each one and indicate which one is too broad (TB), too specific (TS), and just right (JR).

Here’s a model

In order to reconstruct human evolution, human paleontologists search for and study the buried, hardened remains or impressions—known as **fossils**—of humans, prehumans, and related animals. Paleontologists working in East Africa, for instance, have excavated the fossil remains of human-like beings who lived more than 3 million years ago. These findings have suggested the approximate dates when our ancestors began to develop two-legged walking, very flexible hands, and a larger brain.

From *Human Evolution and Culture* by Ember, Ember, and Peregrine

- TB a. Fossils
- JR b. Fossils of human-like beings
- TS c. East African fossils

Now you try

1. We all have had experience with acids and bases, whether we’ve called them by these names or not. Acidic substances tend to be a little more familiar: lemon juice, vinegar,

tomatoes. Substances that are strongly acidic have a well-deserved reputation for being dangerous: The word *acid* is often used to mean something that can sear human flesh. It might seem to follow that bases are benign, but ammonia is a strong base, as are many oven cleaners. The safe zone for living tissue in general lies with substances that are neither strongly acidic nor strongly basic. Science has developed a way of measuring the degree to which something is acidic or basic—the pH scale. So widespread is pH usage that it pops up from time to time in television advertising (‘It’s pH-balanced!’).

From *Biology: A Guide to the Natural World* by Krogh

- a. Acids and bases
 - b. pH-balanced
 - c. Substances
2. Another memory-enhancing option is to draw on special mental strategies called *mnemonics* (from the Greek word meaning ‘to remember’). **Mnemonics** are devices that encode a long series of facts by associating them with familiar and previously encoded information. Many mnemonics work by giving you ready-made retrieval cues that help organize otherwise arbitrary information.

From *Psychology and Life* by Gerrig and Zimbardo

- a. Memory
 - b. Mnemonics
 - c. Retrieval cues
3. Agreement with relative pronouns relies on identifying the relationship among a **relative pronoun** (a pronoun such as *that*, *which*, *who*, and *whom* that introduces a dependent clause), its **antecedent** (the word the pronoun refers to), and its verb. When a relative pronoun refers to a plural antecedent, it requires a plural verb. When a relative pronoun refers to a singular antecedent, it requires a singular verb. Note that relative pronouns signal a dependent clause. The antecedent for the relative pronoun is often found in the independent clause.

From *Writing for Life: Paragraph to Essay* by Henry

- a. Relative pronoun and antecedent agreement
 - b. Parts of speech
 - c. Plural and singular antecedents
4. In contrast with panic disorder, phobias involve a persistent and irrational fear of a specific object, activity, or situation—a response all out of proportion to the circumstances. (These are sometimes called *specific phobias*, as contrasted with the broader fears found in agoraphobia.) Many of us respond fearfully to certain stimuli, such as spiders or snakes—or perhaps to multiple-choice tests! But such emotional responses only qualify as full-fledged phobic disorders when they cause substantial disruption to our lives.

From *Psychology: Core Concepts* by Zimbardo, Johnson, and McCann

- a. Disorders
 - b. Phobias
 - c. Emotional responses
5. Usually, students treat the meanings of words as “subjective” and “mysterious.” I have my meanings of words, and you have your meanings of them. On this view, problems of meaning are settled by asking people for their personal definitions. What do *you*

mean by “love,” “hate,” “democracy,” “friendship,” etc.? Each of us is then expected to come forward with a “personal definition.” *My* definition of love is this . . . *My* definition of friendship is that. . .

From *Critical Thinking* by Paul

- a. Definitions of love and friendship
- b. Personal definitions
- c. Words

6. The only thing that flowed more than tea in those aisles was Afghan gossip. The flea market was where you sipped green tea with almond *kolchas*, and learned whose daughter had broken off an engagement and run off with her American boyfriend, who used to be *Parchami*—a communist—in Kabul, and who had bought a house with under-the-table money while still on welfare. Tea, Politics, and Scandal, the ingredients of an Afghan Sunday at the flea market.

From *The Kite Runner* by Hosseini

- a. Afghan gossip
- b. Afghan food and customs
- c. A broken engagement

7. Maycomb was an old town, but it was a tired old town when I first knew it. In rainy weather the streets turned to red slop; grass grew on the sidewalks, the courthouse sagged in the square. Somehow, it was hotter then: a black dog suffered on a summer’s day; bony mules hitched to Hoover carts flicked flies in the sweltering shade of the live oaks on the square. Men’s stiff collars wilted by nine in the morning. Ladies bathed before noon, after their three-o’clock naps, and by nightfall were like soft teacakes with frostings of sweat and sweet talcum.

From *To Kill a Mockingbird* by Lee

- a. Maycomb
- b. How heat affected people in Maycomb
- c. Maycomb as a hot and tired town

8. Wade Boggs was one of the most proficient hitters in the history of baseball. He won the batting title five times and had a lifetime batting average of .363. He is also highly superstitious. Early on in his career he formed the belief that he could hit better after eating chicken. For that reason, he ate chicken almost every day for twenty years when he played baseball. He is not alone in his superstitious behavior. Wayne Gretzky, the great hockey star, always tucked in the right side of his jersey behind his hip pads. Jim Kelly, the Buffalo Bills quarterback, forced himself to vomit before every game. Bjorn Borg did not shave after he began to play in a major tennis tournament. Bill Parcells would buy coffee from two different coffee shops before every game when he coached the New York Giants.

From *Don’t Believe Everything You Think* by Kida

- a. Superstitions
- b. Superstitions in sports
- c. Wade Boggs’ superstitions

9. Scientists have never been good about explaining what they do or how they do it. Like all human beings, though, they make mistakes, and sometimes abuse their power. The most cited of those abuses are the twins studies and other atrocities carried out by

Nazi doctors under the supervision of Josef Mengele. While not as purely evil (because almost nothing could be) the most notorious event in American medical history occurred not long ago: from 1932 to 1972, in what became known as the Tuskegee Experiment, U.S. Public Health Service researchers refused to treat hundreds of poor, mostly illiterate African American sharecroppers for syphilis in order to get a better understanding of their disease. Acts of purposeful malevolence like those have been rare; the most subtle scientific tyranny of the elite has not been.

From *Denialism* by Specter

- _____ a. Scientific experiments
- _____ b. The Tuskegee Experiment
- _____ c. Abuses of scientific power

10. As a society, we largely avoid political discussions in polite conversation, reserving them for relationships that can withstand a knock-down-drag-out fight—or with people whom we are actively working to alienate. If you're like us, you learned this lesson slowly and still forget it occasionally. You have also undoubtedly left an animated political “discussion” thinking two things about people at the other end of the political spectrum. The first is: Can they really believe that? The bad thinking behind others' beliefs often dismays us. How can they be so blind to the obvious? Their beliefs are clearly not rational, not logical, and perhaps not even sane.

From *The Time Paradox* by Zimbardo and Boyd

- _____ a. Beliefs in political discussions
- _____ b. Politics
- _____ c. Fighting in politics

Survey and Predict

Many students approach a textbook chapter or an academic article with one goal in mind: *to finish it*. Unfortunately, rushing through a chapter about skeletal muscle fibers or the medieval philosophies of Thomas Aquinas will not help you understand the material; complex ideas require and deserve more time and attention.

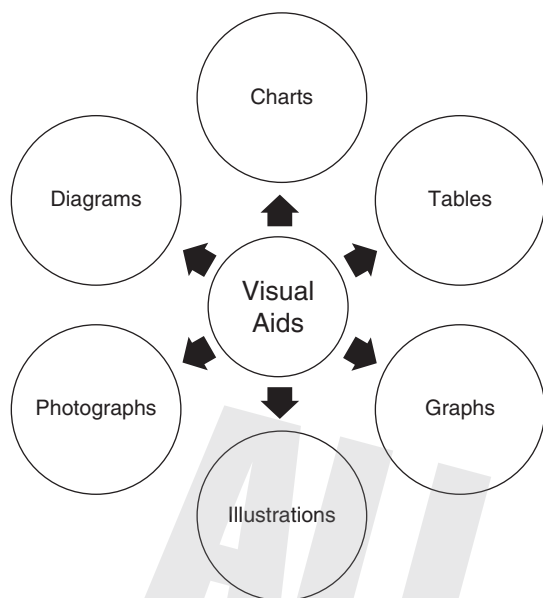
Think about other academic endeavors that require your concentration and inspire your intellectual curiosity, such as completing a chemistry lab, solving a math problem, or playing a musical composition. Do you just dive into the activity without any advance preparation? No, probably not. Rather, in chemistry, you read the lab directions and get the necessary equipment and materials; in math, you scan the problem and see if you can break it down into smaller parts; and in music, you tune your instrument and look over the notes, determine the key, and set the tempo. Taking steps to prepare for these tasks is similar to **surveying** and **predicting** during the reading process.

Surveying

Surveying, also known as **previewing**, is a strategy for getting an overview of a reading selection. It only takes a few moments, but surveying gives you a general idea of the material, sparks your curiosity about what you are going to read, and helps activate your **prior knowledge**, the information you already know through learning and experience.

If you take the time to survey, you can probably identify the topic before you start reading (since the topic often appears in the title or is mentioned several times throughout the passage). When you have a sense of the topic and the organization of the text, you

are more likely to anticipate what will be discussed and to make connections to what you already know about the subject. This will help you to understand and remember the content. Think back to the chemistry lab, math problem, and musical performance examples: Students who know that they will need to mix a solution, solve for x , or play an allegro mentally prepare for those steps.



Use Visual Clues

Textbook authors and publishers are aware of the benefits of surveying. As a result, you can expect that a good textbook will make it easy for you to survey by including visual cues that you should notice as you survey each chapter:

- Items in **bold**
- Items in *italics*
- Items in larger fonts
- Ideas in different colors
- Vocabulary in boxes, highlighted, or in a different font
- Bulleted or numbered lists
- Visual aids

Use Text Features

In addition to these visual cues, textbook authors often include textual features that are intended to help you make sense of the material.

Take advantage of these features by reading them prior to reading an entire chapter. Here is a list of what to look for when you are previewing.

What to Look for When Previewing

- **Title:** The title of the chapter almost always provides you with the topic
- **Subheadings:** Subheadings are printed in bold font larger than the rest of the text (although smaller than the title) and will give you the subtopic of each section
- **Introduction:** Authors may provide a section titled “Introduction;” if not, you can read the first paragraph of the chapter or article to get an overview of what the author plans on covering
- **Chapter objectives:** *Objectives* are the learning goals the author intends you to achieve by reading the chapter (usually found on the first page); looking over these objectives will tell you what the focus of your learning will be
- **Text boxes:** Authors often provide important supplemental information in boxes within the text or in the margins
- **Biographical notes:** Authors may give you a brief biography of a person who figures prominently in a chapter so that you will have a sense of the person’s life and accomplishments prior to reading the chapter; these notes are common in fields such as literature, philosophy, and history
- **Historical notes:** The author may need to give you a brief overview of a country, an event, or an era in history in order for you to understand the context of the new information you are about to read
- **Summaries:** A summary will tell you what information in the chapter the author considers to be significant and especially important to your comprehension; if there is not a summary, then you can read the last paragraph of the chapter
- **End-of-chapter questions:** Questions at the end of the chapter indicate how the author would “test” your understanding of the main points; reading end-of-chapter questions ahead of time will allow you to identify and formulate answers as you read the chapter itself

Ask Questions

Formulating your own questions will also help you comprehend a text. An excellent strategy for formulating questions is to take the items in bold, italics, and larger fonts and turn them into questions. For example, say your geology textbook has a subheading “Igneous Rocks.” You could draw on your prior knowledge about rocks by remembering that igneous rocks are a type of rock along with sedimentary and metamorphic rocks. With this in mind, you could come up with a few questions: What exactly are igneous rocks? How are they formed? How are they different from sedimentary and metamorphic rocks? Where can igneous rocks be found? If you take a few moments to ask questions while you survey, then you will have set a concrete goal for yourself to achieve while you read: You want to find the answers.

Tips for Reading Comprehension: Surveying

- Read the title to learn the topic of the text.
- Look at the subheadings to identify the subtopics of each section.
- Activate your prior knowledge by asking yourself, “What do I already know about this topic? How do the subtopics fit into the chapter?”
- Look at any visual aids.
- Read textual features provided by the author.
- If the author does not include an introduction or a summary, then read the first and last paragraphs of the chapter.
- Pay particular attention to items in bold, italics, and larger fonts and ask questions that you expect to be answered by the chapter’s contents; for example, if a heading in the chapter is “The Importance of Cloning,” your question might be “Why is cloning important?” Write these questions in the margin and, later, when you read, highlight or underline the answers.

Surveying the Chapter

PRACTICE 2-5

Directions: Go back to the beginning of this chapter and survey it. Use the Tips for Reading Comprehension: Surveying. Turn headings into questions; write down two questions that you expect will be answered in section two of this chapter.

1. _____
2. _____

Predicting

It is easier to acquire new knowledge when you are actively engaged with the information. When you apply critical thinking to a text, you can stay interested and engaged in the reading by predicting. *Predicting* is an active mental process that requires you to speculate and hypothesize about what might happen next in the reading. Even if some of your predictions are wrong, the act of predicting keeps your mind engaged with the reading. You can even start with the questions you posed while you surveyed the text; predict what some of the answers will be and see if you are right or not.

What you predict depends largely on what it is that you are reading. For example, if you are reading a novel for entertainment, you might make predictions about the plot or about relationships among characters. In a romance novel, you could predict what obstacles will prevent the main character from finding true love until the last few pages; in a war story, you can predict what tactics the desperate general will try next.

Prediction is a useful tool for studying. When you predict, you have to pay attention to what you are reading and begin seeing the information as a whole instead of separate parts. For example, suppose you are reading about cloning in your biology textbook. After starting with a definition of cloning (copying a single gene), you expect the text will elaborate on how cloning has advanced knowledge in the field of biology. As you read about early efforts to clone bacteria cells, you predict that the text will build up to reproductive cloning within more complex organisms, maybe even in animals and humans. You have some prior knowledge, so you predict that the text will cover some well-known cloning endeavors such as Dolly the sheep, cloned in 1997. Sure enough, the text does explain how Dolly the sheep was cloned, so you make further predictions about what other species have been useful in cloning research. You expected that other barnyard animals would be cloned after Dolly, and you find out that a dog has already been cloned and that people can pay large sums of money to have favorite pets cloned! Finally, you predict that the section will end with a discussion about human cloning, specifically the technical and ethical issues surrounding the concept. Through predicting, you can better recognize the connections among the topic (cloning) and subtopics (such as bacterial cloning, reproductive cloning, Dolly the sheep, and human cloning).

READ, WRITE, AND THINK CRITICALLY: SECTION ONE

Directions: Survey this selection from a study skills textbook and make predictions. Do not actually read the selection yet. Answer the five questions below in complete sentences.

1. What is the title? What does it suggest about the selection?

2. Are there any visual cues (bold, italics, larger font, charts, etc.)? What are they?

3. Read the first paragraph and make a prediction about what the authors want you to take away from this selection.

4. What is your prior knowledge about this topic?

5. Use one of the subheadings in the Abraham Maslow figure and formulate a question that you expect will be answered in the visual or text.

Interaction with Peers (Student–Student Interaction)

Studies of college students repeatedly point to the power of the peer group as a source of social and academic support (Pascarella, 2005). One study of more than 25,000 college students revealed that when peers interact with one another while learning they achieve higher levels of academic performance and are more likely to persist to degree completion (Astin, 1993). In another study that involved in-depth interviews with more than 1,600 college students, it was discovered that almost all students who struggled academically had one particular study habit in common: They always studied alone (Light, 2001).

Peer interaction is especially important during the first term of college. At this stage of the college experience, new students have a strong need for belongingness and social acceptance because many of them have just left the lifelong security of family and hometown friends. As a new student, it may be useful to view your early stage of the college experience and academic performance in terms of the classic hierarchy model of human needs, developed by American psychologist Abraham Maslow (See **Figure 2-1**).

According to Maslow's model, humans cannot reach their full potential and achieve peak performance until their more basic emotional and social needs have been met (e.g., their needs for personal safety, social acceptance, and self-esteem). Making early connections with your peers helps you meet these basic human needs, provides you with a base of social support to ease your integration into the college community, and prepares you to move up to higher levels of the need hierarchy (e.g., achieving educational excellence and fulfilling your potential).

Studies repeatedly show that students who become socially integrated or connected with other members of the college community are more likely to complete their first year of college and continue on to complete their college degree (Tinto, 1993). (See below effective ways to make these interpersonal connections).

Take Action!

Top Strategies: Making Connections with Key Members of Your College Community

Here is a list of 10 tips for making important interpersonal connections in college. Start making these connections now so that you can begin constructing a base of social support that will strengthen your performance during your first term and, perhaps, throughout your college experience.

1. Connect with a favorite peer or student development professional that you may have met during orientation.
2. Connect with peers who live near you or who commute to school from the same community in which you live. If your schedules are similar, consider carpooling together.

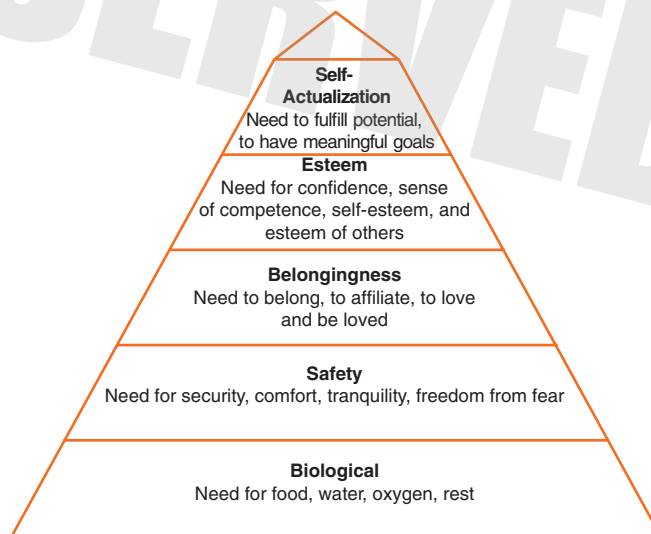


Figure 2-1 Abraham Maslow's Hierarchy of Needs Resembles a Pyramid

3. Join a college club, student organization, campus committee, intramural team, or volunteer-service group whose members may share the same personal or career interests as you.
4. Connect with a peer leader who has been trained to assist new students (e.g., peer tutor, peer mentor, or peer counselor) or with a peer who has more college experience than you (e.g., sophomore, junior, or senior).
5. Look for and connect with a motivated classmate in each of your classes and try working as a team to take notes, complete reading assignments, and study for exams. (Look especially to team up with a peer who may be in more than one class with you.)
6. Connect with faculty members in a field that you're considering as a major by visiting them during office hours, conversing briefly with them after class, or communicating with them via e-mail.
7. Connect with an academic support professional in your college's Learning Center for personalized academic assistance or tutoring related to any course in which you'd like to improve your performance.
8. Connect with an academic advisor to discuss and develop your educational plans.
9. Connect with a college librarian to get early assistance and a head start on any research project that you've been assigned.
10. Connect with a personal counselor or campus minister to discuss any college adjustment or personal-life issues that you may be experiencing.

Getting involved with campus organizations or activities is one way to connect you with other students. Also, try to interact with students who have more college experience than you. Sophomores, juniors, and seniors can be valuable social resources for a new student. You're likely to find that they are willing to share their experiences with you because you have shown an interest in hearing what they have to say. You may even be the first person who has bothered to ask them what their experiences have been like on your campus. You can learn from their experiences by asking them which courses and instructors they would recommend or what advisors they found to be most well informed and personable.

Remember

Your peers can be more than competitors or a source of negative peer pressure; they can also be collaborators, a source of positive social influence, and a resource for college success. Be on the lookout for classmates who are motivated to learn and willing to learn with you, and keep an eye out for advanced students who are willing to assist you. Start building your social-support network by surrounding yourself with success-seeking and success-achieving students. They can be a stimulating source of positive peer power that drives you to higher levels of academic performance and heightens your motivational drive to complete college.

Directions: Now, go back and read the selection and answer the following three questions, using the information you learned from surveying and predicting.

6. You made a prediction about what you would learn in this selection in question 3. Was your prediction correct? Yes/No
If not, then what did you learn instead?

7. Which of the strategies in the "Take Action!" box would you be willing to try?

8. What is the answer to the question you came up with in question 5?

SECTION TWO

Developing Vocabulary

In Section One you learned some helpful strategies for comprehension: identifying the topic, surveying, and predicting. When you read a passage, you will find it much easier to comprehend if you have a strong vocabulary, so Section Two focuses on ways to develop your vocabulary.

An important goal as a college student is to develop your vocabulary. While there is not a single, foolproof way to do this, the best advice is to *read*. Avid readers tend to have the best vocabularies. As college students, you are likely to have a heavy reading load, so if you have not been a voracious reader up to this point, that is probably about to change! Earlier you learned that sometimes there is no apparent reason to learn new information, but curious people want to learn it anyway. Vocabulary development is a good example of this: You might not use a new word today or tomorrow or even next semester, but intellectual curiosity prompts you to learn new definitions that might come in handy today or years down the road.

It is not enough to be exposed to new vocabulary words, learn the definitions for a quiz, relearn them for an exam, and then promptly forget them, as tempting as that may be. As you learned in Chapter 1, we are all susceptible to memory errors, so we need to put some extra effort into committing new vocabulary words to our memories. Try to make the new words part of your **working vocabulary**—the words that you are comfortable utilizing on a daily basis. To do this, make a concentrated effort to use new words when you speak and write; perhaps you can set a goal to practice the new words you encounter in your college courses by putting them on index cards. If you are reluctant to use a new word in conversation, you can become more comfortable using it by accessing an online dictionary that has audio, such as www.merriam-webster.com or www.dictionary.com, listening to how it is pronounced, and saying the word until it rolls off your tongue.

As you take more advanced courses within your chosen major, the vocabulary you need to know will become more specialized. Part of succeeding in your major is learning **jargon**, the vocabulary that will be part of your future career. Until this specialized vocabulary becomes second nature to you, there are several techniques you can use to decode unfamiliar words:

- **Use context clues:** Look for hints within the sentence a word appears in, or in surrounding sentences, that suggest its meaning
- **Use word parts:** Use the meanings of prefixes, roots, and suffixes to figure out the meaning of a word
- **Use the glossary:** Look for a list of key words and their definitions as they are used in the textbook or field of study at the back of the book
- **Use a dictionary** (hard copy or online): Consult a reference book or website that provides an alphabetical listing of words with their meanings and other useful information such as how to pronounce them, their part of speech, and origin
- **Use a subject area dictionary:** See, for example, *Taber's Medical Dictionary* and *Hawley's Condensed Chemical Dictionary*

Context Clues

Many students use context clues to figure out the meanings of words without being aware they are doing so. **Context clues** are the hints about meaning that exist within a sentence, usually close to the word in question. For example, when you read the first paragraph in this section, did you stop and tell yourself to use context clues? Probably not, yet you still got a sense of what the paragraph was all about. Reread these sentences:

Avid readers tend to have the best vocabularies. As college students, you are likely to have a heavy reading load, so if you have not been a voracious reader up to this point, that is probably about to change!

Did you get out your dictionary and look up the words *avid* and *voracious*? If not, how did you figure out the meaning of these sentences with those words? Chances are you unconsciously used context clues to figure out that *avid* and *voracious* mean being eager and enthusiastic readers; experience tells you that people who are willing to read a lot will have stronger vocabularies than those who shy away from reading.

Context clues give you the general idea of what new words mean. What is your mind doing when you use context clues? Your mind is making connections and filling in the blanks created by unknown vocabulary words with whatever fits to help the sentence make sense. Being aware of the cognitive process behind using context clues should help you build your working vocabulary. Try to slow down your thinking and become familiar with these common types of context clues: *definitions*, *synonyms*, *antonyms*, and *examples*.

Definitions

Definitions are the most obvious of the context clues because frequently an author will provide the definition close to the word in question. If the word being defined is not in bold, as it frequently is in textbooks, then the author might set it off with commas or dashes. Another method authors use to make a definition stand out is to introduce it with words such as *means*, *or*, *in other words*, and *that is* as in the following sentence:

An *anecdote*, that is, a short story used to entertain or to educate, is a clever way to start out a college essay.

A critical reader will recognize that the definition of *anecdote* is “a short story used to entertain or educate.” You would not need to consult a dictionary if you use the context clue within the sentence.

PRACTICE 2-6 Identifying Vocabulary Using Definitions

Directions: Read the following sentences and underline the word or phrase that defines the word in italics.

1. A sign that a person is not thinking critically is an *obstinate* clinging to an opinion that does not have good evidence to support it; in other words, exhibiting a stubborn adherence to beliefs lacking support.
2. *Altruism*, that is, a selfless devotion to the welfare of others, is an admirable quality.
3. While people may think the word *cupidity* has something to do with Valentine’s Day and love, in reality it means a strong, greedy desire, often for wealth.
4. Miranda was known for her *capricious* behavior, meaning she would often do impulsive and unpredictable things.
5. The formerly successful stockbroker never expected to be *destitute* or suffering from extreme poverty.
6. Ari’s professor told him that his research paper was *vacuous*; Ari thought it was a compliment until he looked up “vacuous” in the dictionary and learned that it meant stupid.
7. Seeing a shooting star on New Year’s Eve was, to Andrea, an *auspicious* beginning to the new year; in other words, she saw it as a favorable sign.
8. The *clandestine* meetings between the spy and his informant, held in secret for several months, came to an abrupt end when they were discovered by a counter-spy.

9. Many religious people say that they experience a feeling of *sanctity* or state of holiness within their place of worship.
10. The problem gambler was in a *quagmire*, meaning that he was in quite a predicament after losing all of his money on a risky bet.

Synonym Clues

Synonyms are words that have meanings identical or close to that of another word, for example, synonyms for the word *cold* include *arctic*, *frigid*, *below zero*, *frosty*, *frozen*, and so on. A synonym clue works by providing another, more familiar word with a similar definition in the same sentence as the new word. Often, the word *or* will signal that a synonym is being provided. Punctuation also signals synonyms; frequently, readers will encounter a new word or its synonym set off by commas such as in this example:

Garrett's suggestion that he save money by moving in with his brother was *preposterous*, ridiculous, in fact, because the two young men had not spoken in years.

Identifying Vocabulary Using Synonyms

PRACTICE 2-7

Directions: Read the following sentences and underline the word or phrase that is a synonym for the word in italics. Then define the word in italics using your own words. The first one is done for you as an example.

Even at a young age, Jonathan had the sense that life was *ephemeral* or short-lived; his baby sister's death was probably the cause of his understanding of mortality.

fleeting, not lasting

1. Upon reaching the *summit* of the mountain, Alaina triumphantly put the Italian flag on the top with other countries' flags.

2. Marita believed that it was pure *serendipity* that caused her to sleep through her alarm and miss the bus; by luck she wasn't on the bus when it was involved in an accident.

3. People who suffer from mental illness have the added challenge of overcoming the *stigma* or shame that some societies associate with illnesses such as depression, schizophrenia, and addiction.

4. Sheila marveled at the new student's brilliant, *luminous* eyes.

5. Danielle was a *precocious*, advanced child, and her parents worried that her behavior made people think she was much older than she was.

6. Sometimes criminals are ordered to pay *restitution* or repayment to their victims.

7. The *loquacious* host was upstaged by an even more talkative guest at the party.

8. Many people who lived through the Great Depression developed *frugal* or thrifty habits that lasted a lifetime.

9. The *brazen*, bold teenager sprayed graffiti on the overpass in the vicinity of the police station and didn't seem to care whether he got caught.

10. Typically Lynn was a careful skier who avoided *precipitous* slopes, but she decided to take a risk and try the steep run at the top of the mountain.

Antonym Clues

Antonyms are words that have the opposite meaning to another word. An example of an antonym exists in this sentence:

Angelo's willing *acquiescence* to his ex-wife's demands made her suspicious; it was in sharp contrast to his usual disagreeable resistance to every one of her requests.

How would you define *acquiescence*? Well, you could recognize the antonym clue later in the sentence: "it was in sharp contrast to his usual disagreeable resistance . . ." This phrase suggests the *opposite* of acquiescence, namely, *resistance*; therefore, you can work out that *acquiescence* means *not* being resistant, *going along with*. Words such as *unlike*, *opposed to*, *rather*, or *in contrast* can suggest an antonym clue is being provided.

PRACTICE 2-8

Identifying Vocabulary Using Antonyms

Directions: Read the following sentences and underline the word or phrase that is an antonym for the word in italics. Then define the word in italics in your own words (answers may vary slightly). The first one is done for you as an example.

A *novel* solution to the problem proved hard to find; the students kept coming up with the same old ideas.

Novel: new, fresh

1. Plants *flourished* in Dana's garden unlike the dying specimens in her neighbor's yard.
Flourished: _____
2. Once Rodrigo *ventured* his controversial opinion, he wondered if he should have held back and kept quiet instead.
Ventured: _____
3. When Danica finally admitted that she *loathed* Bart, he was relieved that she no longer pretended to like him.
Loathed: _____
4. Andrew's *candid* observations were in stark contrast to his brother's guarded and veiled opinions.
Candid: _____

5. The *profundity* of the graduation ceremony was quite unlike the shallow and silly antics that followed the formal ceremony.
Profundity: _____
6. Erin's logic was shown to be *erroneous*, and she was especially perturbed that her husband was praised for his correct reasoning.
Erroneous: _____
7. Strangers meeting each other on a deserted road should ask "Friend or *foe*" to judge whether the stranger might prove to be a threat.
Foe: _____
8. Mr. Chen's *acumen* in his business dealings was a welcome change from his predecessor's ignorance and lack of ability.
Acumen: _____
9. Barton's *churlish* behavior was in sharp contrast to his brother's gracious way of handling himself during social events.
Churlish: _____
10. The students thought their teacher was being serious when she said she was going to fail every student who neglected to bake a batch of chocolate chip cookies for her, but then she explained that she was just being *facetious*.
Facetious: _____

Example Clues

Example context clues provide you with an idea of what a word means by giving you examples of things that could fall into the class to which the word refers. Consider the following sentence:

Some *genres*, like comedy and action, are more popular with younger moviegoers.

When trying to figure out what the word *genres* means, you can use the examples provided in the sentence—*comedy* and *action*—to determine that it most likely means *categories* or *types of film*. Certain words or phrases in a sentence signal that examples are about to follow. *For instance*, *for example*, *like*, and *such as* are often used to indicate an example clue is being provided.

Identifying Vocabulary Using Examples

PRACTICE 2-9

Directions: Read the following sentences and underline the examples that help you determine the meaning of the word in italics. Then write a definition of the word in your own words. The first one is done for you as an example.

Some *eccentricities*, such as saving one's fingernail clippings or bodily waste, might well be viewed as signs of a developing mental disorder.

Definition: _____ unusual behaviors _____

1. Shakespeare and Jane Austen, among the most famous of the *literati* of Europe, have inspired and impressed other scholars for generations.
Definition: _____
2. *Invocations* like the Lord's Prayer and Psalm 23 have provided people with comfort for ages.
Definition: _____
3. The *epithets* "feminine" and "girlish" are now unfairly considered insults even when applied to women.
Definition: _____
4. The name Mark Twain is an example of a *pseudonym* that has become better known than the author's real name, which was Samuel Langhorne Clemens.
Definition: _____
5. Going on a budget means cutting back on *superfluous* expenses such as subscribing to hundreds of TV channels in addition to belonging to several movie services.
Definition: _____
6. CEOs who cut jobs and salaries to save the company money and then award themselves huge bonuses are perfect examples of *hypocrites*.
Definition: _____
7. Brandon was prone to *vehement* outbursts; for instance, he once screamed at a grocery store clerk for moving the mayonnaise.
Definition: _____
8. Tess was often described as being *diffident* because she could hardly shake hands with new people and she was unable to speak up in class.
Definition: _____
9. Jacqueline acted as a *liaison* between the teachers' union and her high school; for example, she was the person who would share important information and keep the lines of communication open between the two groups.
Definition: _____
10. Anthropologists study *indigenous* people such as Native Americans in the United States and the Inuit in Canada.
Definition: _____

Word Parts

Recognizing root words, prefixes, and suffixes can help you improve your vocabulary, which will improve your comprehension of everything you read. A **root word**, the most basic form of a word, can be modified by adding prefixes and suffixes. **Prefixes** are word parts put at the beginning of a root word to make a new word, and **suffixes** are the word parts added to the end of a root word to create a new word by changing its part of speech or tense.

For the sake of pronunciation, sometimes a combining vowel, *o*, joins the word parts. Also, a word can be formed by using more than one root word, prefix, or suffix, and some words can be built by combining prefixes and suffixes (without any root word). Some

words do not include a prefix or suffix, and sometimes a group of letters that spell a common prefix or suffix do not have the same meaning (such as *ped*, meaning either foot or child). See the appendix for some common word parts not listed below.

Identifying Word Parts

PRACTICE 2-10

Directions: Select the word in the word box below that best completes each of the following sentences. Refer to the partial tables of common root words, prefixes, and suffixes below to help you choose the correct words.

Common Root Words		
Root	Meaning(s)	Example(s)
<i>ben(e)</i>	Good	Benefit
<i>Bio</i>	Life	Biosphere
<i>Chron(o)</i>	Time	Chronological
<i>Fact</i>	make or do	Factory
<i>Log</i>	speech, words, or the study of	dialogue, terminology, psychology
<i>Viv</i>	Life	Viable

Common Prefixes		
Prefix	Meaning(s)	Example(s)
<i>De</i>	opposite of, away from; down	Decline
<i>Mal</i>	Bad	Malpractice
<i>Re</i>	back, again, anew	Revert

Common Suffixes			
Part of Speech	Suffix	Meaning(s)	Example(s)
Adjective	<i>ous</i>	having, full of, characterized by	Harmonious
Noun	<i>ation, tion, sion</i>	the act of	Subtraction
Noun	<i>er, or</i>	one who does	teacher, doctor
Noun	<i>ic</i>	the art or science of or actions or qualities of	Economics
Verb	<i>fy</i>	to make or cause	Horrrify

Source: *Building an Active College Vocabulary* by Licklider

- Jasmine was a lively and _____ addition to parties on campus.
- Advancements in technology have made it possible for _____ replacement parts to seem even more life-like.
- Seeming to enjoy causing pain and distress, Malcolm was arrested several times for his _____ behavior.
- At the end of religious services, pastors typically bestow a _____ on their congregations to wish them well.
- An interesting specialty within the field of science is _____, the study of the effects of time on biological rhythms.
- Soon after graduating from a prestigious business school, Armando was fortunate to secure a _____, a wealthy financier who wanted to give him a good start toward making an ambitious business plan a reality.

Benediction	Malefactor
Benefactor	Malicious
Bionic	Revive
Chronobiology	Vivacious
Deface	Vivify

7. Anyone in the medical field must know how to _____ an unconscious person.
8. A _____ is someone who makes or does evil.
9. After a long day at an amusement park, Aunt Wendee thought a nap and an ice cream cone would _____ three-year-old Caroline.
10. To _____ property means doing damage to it.

Glossaries

If you encounter a new word while you are reading a textbook, you are in luck. Most quality textbooks contain a **glossary**—a concise list of key words and their definitions in the back of the book. The advantage of using a glossary before turning to a dictionary is twofold: (1) It is convenient; and (2) it will define the word as it is being used in the field of study.

PRACTICE 2-11 Using a Glossary

Directions: Use the glossary provided at the back of this book to define the following terms introduced in this chapter.

1. **Comprehension:** _____

 2. **Surveying:** _____

 3. **Jargon:** _____
 4. **Context clues:** _____
-





Using a Dictionary

PRACTICE 2-12

Directions: Use the example dictionary entry to answer the following questions about the word *gap*, as it is used in the passage below.

Women received about three-fifths of what men received for similar work. However, as we mentioned previously, the **gap** is closing as more women attend college and abandon lower-paying professions (such as teaching) for more lucrative employment in business, engineering, and the sciences.

1. What part of speech is the word *gap*? _____
2. What is known about the etymology of the word *gap*?

3. How many meanings are given for the word *gap*? _____
4. Which definition of *gap* explains the meaning of the word as it is used in the example sentence? _____

Real-World Mistakes of Comprehension and Their Consequences

In Chapter 1, you read that failing to think critically could result in serious consequences. When people are unable to apply critical thinking skills to a reading, a misunderstanding or failure to comprehend could result. Most of us have heard of real-world consequences of poor comprehension. Perhaps you have gotten a question wrong on an important exam because you neglected to read the directions carefully. Or you got involved in a house project and had to stop in the middle to run out to a hardware store because you did not realize what tools were required to complete it. Some incidents involving people misunderstanding directions are more serious than others, and errors in comprehension can cost time and money and could put you or others in danger. Even the small amount of reading required to decipher the label on a medicine bottle can pose alarming challenges.

A study by Dr. Michael Wolf revealed that nearly half of the study participants did not understand at least one out of five prescription labels. Even more distressing were those with low literacy rates who were unable to comprehend instructions on four out of five labels on medication bottles. Wolf believes some patients mix up the numbers on the label

(reversing, for example, the number of doses per day with the number of days the medicine should be taken). The problem is significant: In July 2006, the Institute of Medicine stated that 1.5 million patients suffer some injury each year due to medication mistakes.

As might be expected, patients for whom English is a second language are especially vulnerable to these types of comprehension errors. A survey of 592 ESL speakers revealed some worrisome statistics: Almost 10 percent incorrectly gave medication to their children; one-third acknowledged confusion due to the language barrier that existed between themselves and their doctors; 17 percent performed an activity that should have been avoided while they were on medication; and 28 percent literally guessed at the dosage amount because they could not read the prescription label.

A well-meaning attempt to improve comprehension of pharmaceutical labels resulted in the creation of colorful warning labels consisting of both text and images. However, studies have shown that these, too, can be misunderstood. In *The New York Times*, Deborah Franklin writes, “You might see, for example, a red sticker depicting a gushing faucet, with a message in fine print that reads, ‘MEDICATION SHOULD BE TAKEN WITH PLENTY OF WATER.’ But, how much is plenty? Would a cup of coffee be acceptable instead?” The vague phrasing might not be enough to help patients who already have questions about administering medication. Yet another example mentioned in Franklin’s article refers to a common warning sticker: “The ‘FOR EXTERNAL USE ONLY’ sticker stumped 25 percent of even those who could read every word, and misled 90 percent of the adults in the lowest literacy group.”

Medication mistakes can occur during any step of the process (prescribing, dispensing, and administering). In other words, it is not just the patient who is to blame for comprehension errors; medical professionals, pharmacists, and caregivers, too, can misunderstand directions. These lapses in comprehension could, in part, be prevented through the use of some of the strategies mentioned in this chapter such as reading aloud and developing vocabulary, not to mention recalling that comprehension requires careful attention and time.

For Discussion

1. Explain how the mistakes discussed above qualify as a failure of comprehension.
2. What actions could doctors, pharmacists, patients, and caregivers take to minimize the likelihood of these mistakes?

*The topic of the paragraph below is *playing with a Barbie dollhouse*. Reread the paragraph and see if it now makes sense.

First, Anne tried moving the piano into the kitchen, but it did not fit. While she liked the look of the sofa in the master bedroom it was really better suited for the baby’s room, so she moved it as well. It was frustrating to her that the water in the sink and bathtub did not work, but she tried all of the faucets again anyway to no avail. The colors pink and purple were dominant in every room. In Anne’s humble opinion, the pink shutters did nothing for the exterior of the house, but that was nothing a little crayon couldn’t help.

Real World Successes of Critical Thinking

Helen Keller

You just read about a serious result of failing to think critically, but people who succeed at thinking critically can achieve great success. An example of a person who mastered comprehension despite seemingly insurmountable obstacles was Helen Keller (1880–1968), who was both blind and deaf.

Directions: Using the Internet or a library, research Helen Keller in depth. Prepare a detailed description of how Helen Keller achieved comprehension of the world around her and what she was able to accomplish as a result. Include an explanation of any skills, character traits, and standards of critical thinking that contributed to her success. Get ready to share your findings with the class.

Chapter Summary

- **Comprehension** is a knowledge and understanding of information. Grasping information is a vital step toward becoming a critical reader and thinker.
- The trait of **curiosity** is defined as inquisitiveness: the desire to learn more and to seek new learning opportunities.
- Becoming a better reader involves thinking about your reading experiences and figuring out what strategies work best for you.
- The **topic** is the subject or general idea of a book, story, conversation, article, movie, and so on. Typically, the topic can be stated in a word or short phrase; in a text, the topic is frequently identified in the title or in key terms that are repeated throughout the reading.
- The strategy of **surveying** aids comprehension by activating your prior knowledge and giving you an overview of what to expect in a reading. *Surveying* involves looking over the text for visual cues and textual aids, reading portions of the text such as introductions and summaries (if provided), and formulating questions that you expect the reading will answer. **Predicting** is a strategy that helps to ensure comprehension by keeping you engaged in the text; when you predict, you make guesses about what may come next in the text.
- There are several ways you can develop your vocabulary. Using **context clues**, **word parts**, **dictionaries**, and **glossaries**, you can learn new words which will help you become a more effective reader. Context clues include **definitions**, **synonyms**, **antonyms**, and **examples**; word parts include **roots**, **prefixes**, and **suffixes**.

READ, WRITE, AND THINK CRITICALLY: SECTION TWO

Directions: Survey this selection from a human development textbook. Do not read the selection yet. Instead, answer the questions below prior to reading the text.

1. What is the topic?

2. What is your prior knowledge about this topic?

3. Make a prediction about the content.

4. Read the first paragraph, and write a question that you expect will be answered in the text that follows.

Now, read the selection and be prepared to answer additional questions once you are done reading.

Use All of Your Senses

When studying, try to use as many different sensory channels as possible. Research shows that information that's perceived through multiple sensory modalities or channels is remembered better (Bjork, 1994; Schacter, 1992) because it forms more interconnections in long-term memory areas of the brain (Zull, 2002). When a memory is formed in the brain, different sensory aspects of it are stored in different areas. For example, when your brain receives visual, auditory (hearing), and motor (movement) stimulation that accompany with what you're learning, each of these associations is stored in a different part of the brain. See **Figure 2-2** for a map of the surface of the human brain; you can see how different parts of the brain are specialized to receive input from different sensory modalities. When you use all of these sensory modalities while learning, multiple "memory traces" of what you're studying are recorded in different parts of your brain, which leads to deeper learning and stronger memory (Education Commission of the States, 1996).

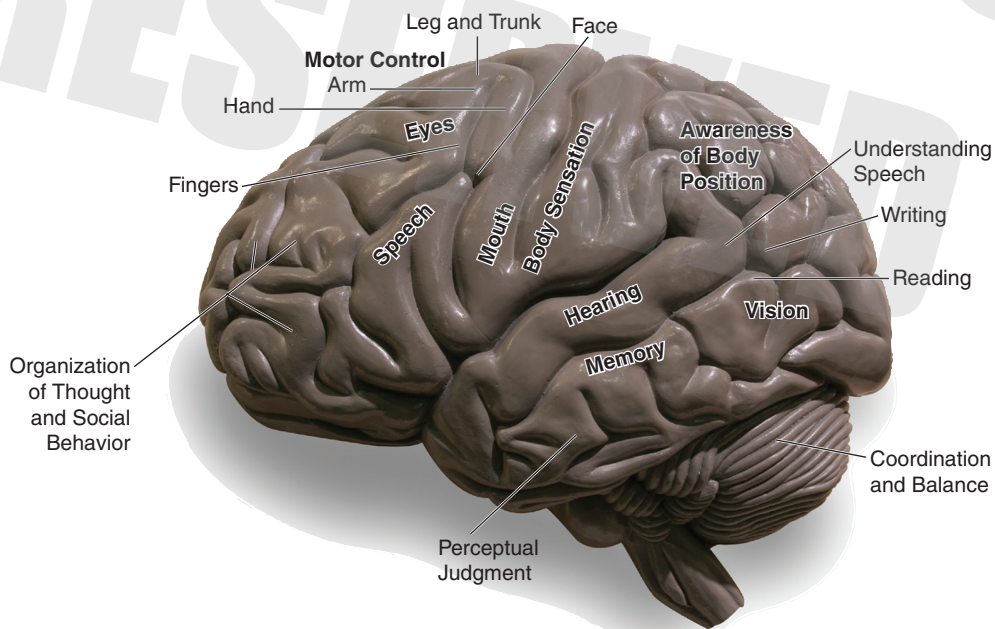
Listed here are some major channels through which learning occurs and memories are stored, along with specific strategies for using each of these channels while studying.

Visual Learning

The human brain consists of two hemispheres (half rounds): the left and the right hemispheres (See **Figure 2-3**).

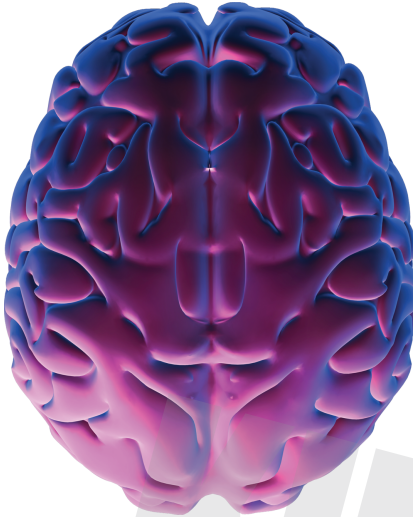
Each hemisphere of the brain specializes in different types of learning. In most people, the left hemisphere specializes in verbal learning, dealing primarily with words. In contrast, the right hemisphere specializes in visual-spatial learning, dealing primarily with images and objects that occupy physical space. If you use both hemispheres while studying, you lay down two different memory traces (tracks) in your brain: one in the left hemisphere, where words are stored, and one in the right hemisphere, where images are stored. This process of laying down a double memory trace (verbal and visual) is referred to as dual coding (Paivio, 1990). When this happens, memory for what you're learning is substantially strengthened, primarily because two memory traces are better than one.

To capitalize on the advantage of dual coding, use any visual aids that are available to you. Use the visual aids provided in your textbook and by your instructor, or create your own by drawing pictures, symbols, and concept maps, such as flowcharts or branching tree diagrams. See **Figure 2-4** for a concept map that could be used to help you remember the parts and functions of the human nervous system.

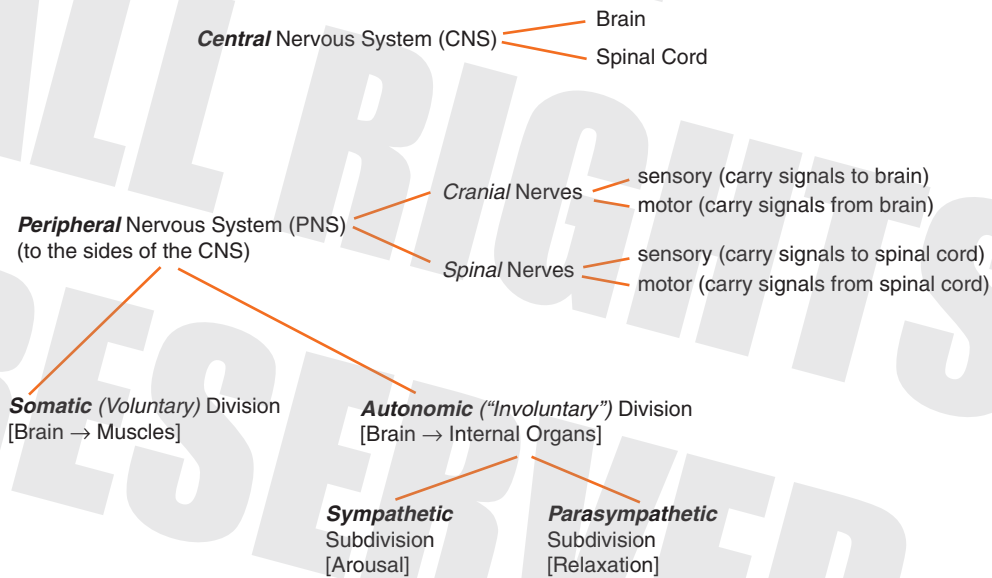


Brain image modified from ©David Huntley, 2013. Under license from Shutterstock, Inc.

■ **Figure 2-2** A "Map" of the Functions Performed by the Outer Surface of the Human Brain



■ **Figure 2-3** The Human Brain Consists of Two Halves, Known as the Left Hemisphere and the Right Hemisphere



■ **Figure 2-4** Concept Map for the Human Nervous System

Drawing and other forms of visual illustration are not just artistic exercises; they also can be powerful learning tools (i.e., you can draw to learn). Drawing keeps you actively involved with the material you're trying to learn. By representing the material in visual form, you're able to dual-code the information you're studying, thus doubling its number of memory traces in your brain. As the old saying goes, "A picture is worth a thousand words."

Directions: Answer the following questions, using information you learned from surveying and predicting.

5. You made a prediction about what you would learn in this selection in question 3. Was your prediction correct? _____ (yes/no) If not, then what did you learn instead?

6. What did you learn from the first visual aid (Figure 2-2)?

7. What is the answer to the question you came up with in question 4?

8. Define these words from the selection by using context clues or a dictionary.

Perceived (para. 1) _____

Stimulation (para. 1) _____

Modalities (para. 1) _____

Substantially (para. 3) _____

Capitalize (para. 4) _____

KH
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