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## 2 ● Chapter 1 Strategies for Learning from Textbooks

Chapter 1 also emphasizes the importance of writing while reading as a way of improving both comprehension and remembering. It pays particular attention to **paraphrasing**, or translating someone else's words into your own. Because paraphrasing is a critical academic skill, you'll hear about it in several chapters. Chapter 1, however, gives you the basics.

Finally, Chapter 1 tells you how to use the Web to expand your background knowledge and improve your comprehension of textbook assignments.



### Introducing SQ3R: Survey, Question, Read, Recall, Review

If you are reading a bestseller by a writer like Dean Koontz<sup>1</sup> or Charlaine Harris,<sup>†</sup> you probably let your mind drift along with the story, almost like you were dreaming it. However, this dreamy, unfocused approach, perfect for leisure reading, isn't particularly effective with textbooks.

With textbooks, you need a systematic but flexible system that can take into account the difficulty of the material, the author's writing style, and the goals of your assignment. SQ3R is flexible enough to include all three elements. What follows are the steps in the system, all of which can and should be adapted to your needs.

#### S: Survey to Get a General Overview and Make Predictions

When you start a textbook assignment, don't just open your textbook and begin reading. Instead, **survey** or preview the material using the general sequence of steps described in the following box. The purpose of the survey is for you to develop expectations about the content. That way, when you start reading, you will have a **purpose**. You'll be reading to confirm or revise your expectations. Having a purpose improves both comprehension and remembering.

Although the steps in a survey may increase or decrease according to text difficulty and your knowledge of the material, these seven steps are almost always essential.

<sup>1</sup>Dean Koontz is the author of numerous thrillers like *Odd Thomas* and *Frankenstein*:

*The Dead Town*. If you like crime novels, you will love his.

\*Charlaine Harris is the author of *The Southern Vampire Mysteries* series of novels, on which the hit HBO series *True Blood* is based, and the books are as good as the HBO series.



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### Seven Basic Steps in a Survey



1. Read the title. Consider what it suggests about the chapter's contents.
2. Read all introductory material. That includes opening anecdotes, or stories, chapter outlines, lists of questions, goals, and objectives. These are all ways in which textbook authors identify a chapter's key concepts, or ideas.
3. Use the title and introduction to form a general question or two about what's covered in the chapter. Check your memory to see if you have any prior knowledge, or previous experience, with the topic discussed.<sup>†</sup>
4. Read the headings and opening sentence of chapter sections. **If the material is especially difficult or unfamiliar, expand this step:** Read the last sentence of every chapter section or even the first and last sentence of every paragraph. Use this material as the basis for focus questions that will guide your reading and help you maintain concentration.
5. Read the title and look closely at all visual aids. Visual aids include pictures, photos, maps, charts, boxes, icons, or visual symbols, and graphs. If captions, or explanations, accompany the visual aids, read them, too. Ask yourself what each visual aid suggests about the chapter's content. If specific icons, or symbols, are used consistently in the chapter, see if you can detect a pattern in the kinds of information they identify.
6. Pay attention to words printed in boldface or in the margin of the page. With particularly important or difficult courses, expand this step to include jotting boldface or italicized terms in the margins. As you read, add brief definitions to the terms noted in the margins.
7. Read end-of-chapter summaries and questions. If there is no end-of-chapter summary or list of questions, read the last page of the chapter.

<sup>†</sup>More on developing prior knowledge using the Web is found on pages 47–59.

## The Four Goals of a Survey

Whatever the length and depth of the survey, it should always give you the following: (1) a general overview of the content covered; (2) a feeling for the writer's style; (3) an idea or sense for what's important; and

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(4) a sense of the chapter's (or article's) natural breaks or divisions, which you can then use to decide the number and length of your study sessions. While most articles assigned for outside reading can be read and at least generally understood in a single study session, chapter assignments should be divided up so that you read in chunks, completing only ten or so pages in each study session.

#### Ten Questions to Consider During Your Survey



1. What does the title suggest about the author's emphasis or focus?
2. According to the heading and highlighted terms, what issues or topics will the author address?
3. Are any visual aids included? What do they suggest about the chapter's content and emphasis?
4. Do any chapter sections look especially difficult?
5. Does any of the material look familiar?
6. What method does the author consistently use for emphasis? Does the author favor **boldface** and marginal annotations? Or does she make heavy use of opening questions and boxed information? Textbook authors are likely to favor a particular method of presenting important information. Try to determine the author's preference.
7. How many pages should I plan to complete during each study session?
8. Do I have any background knowledge about the topics or issues addressed in this chapter?
9. Do the headings include any questions I can use to focus my attention while reading?
10. Is there a summary I can use to figure out what's central to the chapter?

## skip to page10

### The Importance of Reading Flexibility

*"A how-to-study program must be individualized to each*

**Reading flexibility** refers to a reader's willingness to change strategies depending on what he or she is reading and why. For example, if flex-

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### CHECK YOUR UNDERSTANDING

1. What are the four goals of a survey?

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2. What does the term *reading flexibility* mean?

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3. During a survey, what can visual aids frequently tell you about a chapter section?

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4. Bar graphs are useful for what purpose?

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### Q: Ask and Answer Questions While Reading

Many students struggle to maintain concentration while reading. This isn't unusual. We all struggle when we try to absorb new and difficult material for an extended length of time.

Still, the problem of failing concentration can be considerably reduced. One way to reduce it is to ask questions while reading. Raising and answering questions during a study session will help you remain mentally active throughout. Using questions to maintain your concentration can also alert you to key points addressed in the chapter. What

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follows are several methods you can use to develop questions that guide your attention and keep you focused.

### Use Opening Lists

Many textbook chapters open with a list of ready-made questions that the author or authors expect to answer in the chapter. Use these lists to focus your reading. Questions based on introductory lists of questions will keep you alert to especially important passages. Here, for instance, are three questions that could open a chapter of a psychology text:

- What Are the Basic Brain Structures and Their Functions?
- How Does the Nervous System Operate?
- How Does the Brain Change?

With questions like these to guide your reading, you are bound to be alert to passages that provide an answer. You are also more likely to stay alert because you won't be reading aimlessly and wondering what you should be looking for.

Some textbook chapters open with a list of specific objectives that tell you what you should know after reading the chapter. When that's the case, use words like *what*, *why*, and *how* to turn the objectives into focus questions. For an illustration, look at the list of objectives from a health textbook titled *An Invitation to Health* and compare the objectives on the list to the questions they evoke:

#### Objectives

**Define health and wellness**

**Name three ways in which gender impacts health**

**Describe the *Healthy People 2010–2020* initiative**

#### Questions

What does it mean to be healthy? What does it mean to be well?

How does gender affect health?

What is the *Healthy People 2010–2020* initiative?

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**List three to five attributes of credible medical information websites**

**What are three to five ways medical information websites indicate that they are trustworthy?**

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However you develop your questions, it pays to jot down an abbreviated version of the questions or objectives on a piece of paper *before* you begin reading. The list will make you more alert to places in the text where questions get answered or objectives are met.

Each time you find a passage that answers a question or meets an objective, put a check mark next to the passage. Then cross the question or objective off your list. That way you will have a record of what's really significant in the chapter.

Taking the time to check off the questions and objectives gives your brain extra time to mull over what you have read. That extra time will help anchor the information in your long-term memory.

### Turn Headings into Questions

Most textbook chapters are divided by major and minor headings. **Major headings** introduce the topics or issues addressed within the chapter. **Minor headings** further subdivide topics and issues introduced by the major headings. Here's an example of each:

The major heading introduces the topic under discussion.

It should also make readers pose the question, "What are the causes of violence?"

The minor heading suggests questions such as "Are the two causes always in combination?" "Can someone become violent due to psychological causes without there being a biological one?"

#### The Causes of Violence

What sets off a violent person? Criminologists have a variety of views on this subject. Some believe that violence is a function of human traits and makeup. Others point to improper socialization and upbringing.

#### Psychological/Biological Abnormality

On March 13, 1996, an ex-Boy Scout leader named Thomas Hamilton took four high-powered rifles into the primary school of the peaceful Scottish town of Dunblane and slaughtered 16 kindergarten children and their teacher. This horrific crime shocked the British Isles into implementing strict controls on all guns. Bizarre outbursts such as Hamilton's support a link between violence and some sort of mental and biological abnormality. (Siegel, *Criminology*, 10th ed., p. 302,

© Cengage Learning.)

Most textbook writers make use of major and minor headings to divide up chapters. You should make use of them too. Use them to help you make predictions about what will follow. Use them as well to create questions that will focus your attention on the text even when the mate-

rial is new and complex.



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Introducing *SQ3R*: Survey, Question, Read, Recall, Review ● 13

### Form Questions Based on Key Terms

Authors make it a point to highlight vocabulary words essential to their subject matter. They highlight the words using **boldface**, *italics*, **colored ink**, and marginal notes. Often they use a combination of visual devices to get your attention.

When you spot those highlighted terms during a survey, use them as the basis for questions. For example, the following words, *mnemonic* and *acronym*, appear as marginal notes in a chapter on memory. Together they provide the basis for the two questions listed below.

**Mnemonic**<sup>†</sup> a device for improving memory

**Acronym**<sup>†</sup> a word composed of the first letter of a series of words

- Questions:**
1. What are some examples of mnemonics that I already know? Are they useful for all kinds of remembering?
  2. What are some examples of acronyms, and how can they aid memory?

**stop and go to p. 17**

### Use Whatever's Available as the Basis for Questions

Some textbook chapters won't use headings, icons, marginal annotations, and so on, to highlight key points. This is particularly true of history books. When your textbook doesn't offer many visual clues to significance, be a flexible reader. Use whatever is available as the basis for your questions.

You could, for instance, read the first sentence and last sentence in each paragraph of a chapter section to see if they provide a basis for questions. Note the questions that can be derived from the opening and closing sentences of each paragraph in this excerpt from a

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### CHECK YOUR UNDERSTANDING

1. Why is posing questions while reading important?

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2. What are some of the sources readers can use as the basis for questions?

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### R1: Read in Sections or Chunks

Once you finish your survey and have a sense of what you need to look for, you are ready to start reading. But that doesn't mean you should sit down and read an entire chapter. Instead, assign yourself a specific number of pages or sections to cover during the time you have set aside for study.

Each time you return to the text to read the next part of your assignment, try to recall what was said in the previous one. These spaced reviews of the previous material *before* you process what's new will help you remember what you read.

How much you read per session should be determined by (1) how difficult the material is and (2) how much you already know about it. If you don't know anything about the subject under discussion, if the content is complex and the style difficult, consider reading only eight to ten pages per session. Just make sure you plan on at least three or four study sessions to get through the chapter.

Think about reading a whole chapter in one sitting *only* if the material is familiar and the style easy to read.

#### For Really Difficult Textbook Assignments, Consider the 10/5 Approach

When a textbook assignment is filled with new terms, concepts, and facts,

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reading can seem like torture. What can help is a variation on the technique productivity gurus like Alan Lakein call *The Swiss Cheese Method*.

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The principle behind the Swiss Cheese Method is to accomplish a large task by completing small pieces of it step by step. The name comes from the idea of poking holes into a cheese until the cheese disappears.

To apply this principle to reading, set a stop watch on your computer or your phone—if you don't have either, use a kitchen timer—for ten minutes. Read during every minute of the ten. No interruptions allowed, so turn off your cell phone.

But when the timer goes off, stop and take five minutes for a quick stroll from say your desk to the kitchen. While you stroll think about what you've read, mentally summing it up. You don't necessarily have to be right. All you have to do is to **paraphrase**, or put into your own words, what you think the author said. The more you read of the chapter, the more the pieces will fall into place, and you may well revise your first thoughts about the author's message. When the five minutes are up—time them too—go back to reading for another ten.

Follow this routine for at least an hour. If you can, push it to an hour and fifteen minutes. Do this every day until you finish the chapter. When you are done, you will be surprised at how much you know, and the process will be much less painful than laboring over a hard-to-read chapter for thirty-minute or hour-long stretches.

### Vary Your Assignments to Stay Sharp

If you've set aside an hour and a half to study, vary your assignments so that you aren't spending all your study time on one subject. Changing from assignment to assignment helps concentration and remembering. Each time you switch to new material, your brain will feel refreshed and more alert simply because it's working on something different.

For best results, alternate between related subjects so that one reinforces the other. If you are reading a psychology chapter on the parts and functions of the brain, follow it with a health chapter on injuries and diseases of the brain. If you have set aside an hour to study, spend thirty minutes on each subject. If you set aside two hours, give each subject an hour.

**READING TIP**

A willingness to re-read is critical to understanding a difficult textbook. But just as important is a willingness to re-read *in a different way*. If a first reading left you confused, do the second reading at a slower rate. You might also try reading aloud. If the text describes a physical event or process, try visualizing. Again be flexible and adapt to the material.

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*"I write all over the pages of every book I read. It helps me have a conversation with the author and allows me to keep track of my thinking while I am reading."*

—Teacher and blogger,  
John Howell

## Write While You Read

If I could personally give every student who reads this book one piece of advice, it would be this: Keep a pen or pencil in hand while you read, and use it—a lot. For somewhat familiar material written in an easy-to-absorb style, underline key words and jot brief notes in the margins of pages. With more complicated texts, especially those essential to your college career, do both—take brief marginal notes and make a more detailed set of notes in a separate notebook.

If you are reading a print text, keep a highlighter close by. Use the highlighter for sentences that seem especially significant—for example, ideas that might turn up on exams or prove useful for term papers. Because writing while reading is critical to academic success, you'll hear more on this subject later on in the chapter.

## E-Books Are No Exception

If you are using an e-book, it probably allows you to highlight, attach sticky notes, jot your own notes in pop-up boxes, and so on. Use every single one of the features available to you. Whether print or digital, writing in a book is a way of personalizing the information and making it your own. The more you personalize new information, the better you will understand and remember it.

## Writing and the Brain

In addition, more recent research on the brain shows how truly specialized it is. Different parts of the brain respond to different language activities. When you read new material and write about it at the same time, your brain is absorbing the information via two separate pathways, one devoted to reading, the other to writing. The dual processing involved in reading and writing about the same passage makes the material in that passage more memorable.

**Stop and go to**

## Personal Experience Counts **p. 23**

The more you know about a subject, the more informed your marginal notes are going to be. Take a government and an economics course, and you might be able to jot a note that compares Supply Side and Keynesian solutions<sup>7</sup> to an economic crisis. But initially, college textbooks introduce

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### SUMMING UP THE KEY POINTS

1. Unless the material is really easy to learn, don't think you have to read entire chapters in one sitting. Break the chapter up into sections with a limited number of pages that you can read in about an hour.
2. Varying your assignments during a study session is a good way to maintain concentration.
3. Whether your textbook is print or digital, write while you read. Writing while reading gives your brain a chance to process the new material, making it easier to remember.
4. Vary your reading rate according to the difficulty of the material and your knowledge of the subject. Slow down when a text is difficult and unfamiliar. Speed up when you are dealing with material that is familiar or uncomplicated.

## R2: Recall<sup>+</sup> Right After Reading

When an author's words are right in front of us, we usually think we understand them. Yet if we look away from the page and try to recall what we've read, we often discover that our understanding is muddled or incomplete. That's what makes the recall step of SQ3R so important. It's a way of monitoring your understanding before going on to the next section of a chapter or an article.

### Slowing Down Forgetting

There's another reason why recalling immediately after reading is critical: Most people are inclined to forget new information right after reading it. But with the passage of time, the rate of forgetting slows down, and we forget less as time goes by. That means anything we do to fix newly absorbed information into long-term memory *right after reading*—when the rate of forgetting is highest—improves our chances of remembering it, weeks or even months later.



Francis Robinson used the word *recite*, but he included under that term “mentally reviewing the answer or writing it out,” which is another way of saying “recall.”

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As always with SQ3R, there are different ways to complete this step. The one you choose depends on the kind of material you are reading and the depth of understanding you want to achieve. Here again, flexibility is key. Here are just some of the ways you can fulfill this key step in SQ3R.

### 1. Recite the Answers to Your Questions

With material that's not too difficult or too unfamiliar, try mentally reciting answers to the following questions: What topic, or subject, was discussed? What point did the author make about the topic? How did the author illustrate or argue the point? The last question of the three is usually the toughest to answer. If you can think of one illustration or reason after a first reading, you are doing just fine.

You might also consider reciting the answers aloud. That would give your brain an external and internal repetition of key material. The more pathways your brain uses to receive information, the greater your chances of remembering it.

### 2. Write Out the Answers to Your Questions

Robinson believed that readers were inclined to fool themselves if they only recited answers to their questions. In his opinion, it was too easy to accept a vague and confused answer. Posing questions about the material and writing out the answers was, from Robinson's perspective, a better comprehension check.

### 3. Make an Informal Outline

Some students panic when they hear the word *outline*. They panic because they think they have to create formal outlines in which every *a* is followed by a *b*, and strict rules dictate how the outline has to be completed. But the outlines you use for the recall step of SQ3R don't have to be formal ones. They just have to provide a quick review of the content covered and show the relationship between ideas.

Start your outline by looking only at the heading of the chapter sec-

Start your outline by looking only at the heading of the chapter section and asking yourself, "What was the main idea or central message of this section?" Write the heading and your answer down at the top of the page. Then indented underneath the main idea, in your own words, list any reasons, illustrations, studies, facts, or figures that the author used to explain or prove that overall point.

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Here to illustrate is a brief textbook excerpt about “Convenience Products” followed by an outline. Read the text first. Then look over the outline to see how it matches up.

**Convenience products** are goods and services consumers want to purchase frequently, often immediately, and with minimal effort. Milk, bread, and toothpaste are convenience products. Convenience services include 24-hour quick-stop stores, walk-in hair or nail salons, copy shops, and dry cleaners.

Marketers further subdivide the convenience category into impulse items, staples, or emergency services. **Impulse goods and services** are purchased on the spur of the moment—for example, visit a car wash or buy a pack of gum while at the super market register. . . . **Staples** are convenience goods and services consumers constantly replenish to maintain a ready supply: gasoline, shampoo, and dry cleaning are good examples. **Emergency goods and services** are bought in response to unexpected and urgent needs. A snow blower purchased during a snowstorm and a visit to a hospital emergency room to treat a broken ankle are examples. (Adapted from Boone and Kurtz, *Contemporary Marketing*, 15th ed., pp. 348–49, © Cengage Learning.)

Convenience Products: Marketers divide into three categories.

1. impulse buys like grabbing a candy bar when you reach the cash register
2. staples like gas
3. emergency purchases like batteries during a tornado

Informal outlines are a great way to figure out just how much you have understood of what you’ve read. They will also serve you well when you want to review for exams. Just make sure to leave plenty of space between the items in your outline so you can add to it during early reviews.

#### 4. Draw Rough Diagrams and Pictures

If you think you are a **visual learner**, that is, you remember what you see even better than what you hear, consider translating words into pictures

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### R3: Review Right After Completing the Assignment

Robinson's suggestion to review right after reading is a good one. But it needs some modification and clarification. Perhaps because he assumed students were also outlining chapters while they read, Robinson allotted only five minutes for review. Actually, you need at least fifteen to make this step productive.

Robinson also didn't always make it clear that the third *R* in his system represented only *the first* of several reviews. Trained as an educational psychologist, Robinson knew full well that *mastery of new material occurs with repeated reviews that extend over time*. He never assumed that the first review would be the reader's last.

#### The Goal of the First Review: See the Big Picture

The first goal of a review is to understand how the individual parts of the chapter fit together. For example, in a chapter titled "The Professional Sports Business," you would need to determine the author's overall intention or objective. Is the author trying to give you a historical overview of how sports have become more about making money than a celebration of athletic prowess? Or perhaps the chapter focuses on the various elements that make up the business of sports, such as scouts, agents, contracts, owners, trainers, and endorsements. Once you have the larger chapter objective in mind, it becomes easier to see what each chapter section contributes to that objective.

#### Pick a Review Method That Suits You and Your Assignment

For some assignments and some readers, outlining is an ideal learning strategy. But there are other ways to complete a first review. The following are some suggestions.

**Draw Diagrams and Charts.** If you remember pictures or images more readily than words, you might consider reviewing with diagrams. One popular diagram used for study purposes is called a **concept map**.

With a concept map, you put the overall point of the chapter or article in the middle of the page or top of the page and enclose it in a circle or box. Then using arrows and indentation, you can show how ideas relate to one another. Here, for instance, is a concept map that gives visual

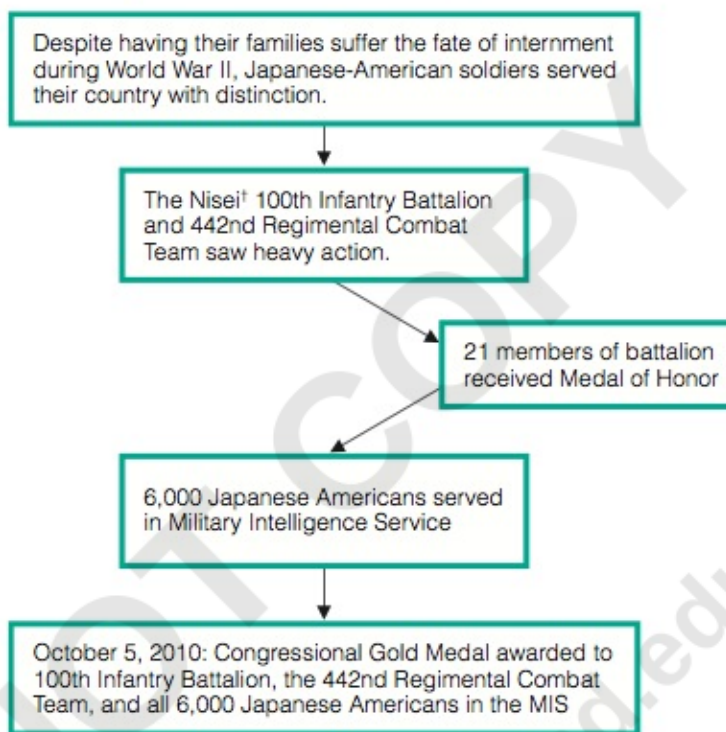
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form to the ideas and relationships introduced in a chapter about the internment of Japanese Americans during World War II:



\*Nisei: refers to children born of Japanese parents who immigrated to other countries and raised their children in those countries, rather than in Japan.

Don't think, however, that you are restricted to concept maps. If another format suits the text and your purpose, use it. Here, for instance, is part of a chart created for a chapter on disorders of the digestive system. Note how the reader has tried to fill in some of the details about the headings and left question marks under headings about which she recalled little or nothing.

Common Disorders of the Digestive System

stomatitis	hiatal hernia	pyloric stenosis	gastritis	enteritis	peptic ulcers	IBD <sup>†</sup>
inflammation	stomach	?	chronic	?	lesion in	Crohn's

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of soft tissue in mouth	protrudes above dia- phragm into esophagus opening		inflammation of stomach lining		stomach lining, most bacterial caused	disease and ?
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**\*IBD: inflammatory bowel disease.**

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**Look at All the Major Headings.** Go through the chapter page by page or screen by screen. Look at each major heading and then look away to see how much you remember about what's included under that heading. Give yourself just a few seconds to respond. If nothing comes to mind at the end of ten or fifteen seconds, mark the chapter or article section for another reading.

While being able to recall the main point introduced under each heading is wonderful, recognizing that you can't recall much of anything is also useful. Your lack of recall tells you that the chapter section needs a second reading.

**Work with a Classmate.** Here again, think about working with someone in your class. Ask him or her to say the major headings aloud. Then respond by reciting what you remember about each one. Any time you draw a blank or remember very little, your partner should mark the passage for another reading.

### Whittle Recall Cues Down to Size

Reviews done right after reading and the follow-up reviews you do for exam preparation have slightly different goals. Your first review should tell you what the chapter covers and how the different parts fit together. Are they ordered, for instance, according to sequence in time? Or do they tell you how different parts of the United States reacted to the same key event? It should also help you determine what you do and don't know about the material you've just finished reading.

However, the reviews you do in preparation for exams should focus on creating **recall cues**, words or phrases that call up the information you have learned. Although you may well start out reviewing with notes or diagrams based on complete sentences—"Gender identity refers to our sense of being male or female" or "Delegation involves three basic steps"—you should end up with notes that include only a few key words and phrases, for example, "gender identity," or "steps in delegation." You can tell you are prepared for exams when just glancing at those key words and phrases triggers the explanations they represent.



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## 32 ● Chapter 1 Strategies for Learning from Textbooks

### SUMMING UP THE KEY POINTS

1. The third *R* in SQ3R refers to the review that takes place after a chapter is completed. However, Robinson knew that several reviews over an extended period of time were essential to mastery of new material. He never assumed that one review right after finishing a chapter would be enough.
2. The first goal of a review is to get a sense of how the parts of a chapter connect. Are they all effects of one cause, for instance, or do they describe a progression of events? Like the first step of SQ3R, the survey, use the review step to establish a sense of the chapter's general, or overall, goal.
3. Robinson suggested readers should review by looking over their informal outlines, but other methods can be used as well. You can look at all the major headings and then look away to see how much information you recall about each heading. You can make a concept map, which shows the chapter's central point in the center along with the sub-topics or issues used to explain it. Or you can go over the chapter with a classmate who asks you what each major heading contributes to the overall point of the chapter.



## Writing and Reading

*"Your memory is not a product of what you want to remember or what you try to remember; it's a product of what you think about."*

—Daniel T. Willingham, *Why Don't Students*

Whether you are reading a print or digital book, writing while reading will help you understand and remember what you read. When you underline or jot notes, you analyze the text, trying to decide what's important and what's not. It's the thought involved that deepens your understanding and anchors new facts and ideas in long-term memory.

What follows are suggestions about how you can write and read at

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