

All these students were successful in the history class, although the final grades varied. Each student's reflection offers sincere and sound advice. Regardless of the way you organize material—by annotating, note taking, outlining, or mapping—your goal should be to make meaning by making connections.

Annotating

Which of the following would seem to indicate the most effective use of the textbook as a learning tool?

1. A text without a single mark—not even the owner's name has spoiled the sacred pages
2. A text ablaze with color—almost every line is adorned with a red, blue, yellow, or green colored marker
3. A text with a scattered variety of markings—highlighting, underlines, numbers, and stars are interspersed with circles, arrows, and short, written notes

Naturally, option three is the best. The rationale for the first is probably for a better book resale value, but usually used books resell for the same price whether they are marked or unmarked. The reason for the second is probably procrastination in decision making. Students who highlight everything—the “yellow book disease”—rely on coming back later to figure out what is *really* important. Although selective highlighting in a light color such as yellow is a helpful strategy, highlighting everything is inefficient. The variety of markings in the third strategy enables you to pinpoint ideas for later study.

Why Annotate?

The textbook is a learning tool and should be used as such; it should not be preserved as a treasure. A college professor requires a particular text because it contains information vital to your understanding of the course material. The text places a vast body of knowledge in your hands, much more material than the professor could possibly give in class. It is your job to cull through this information, make some sense out of it, and select the important points that need to be remembered.

Annotating is a method of highlighting main ideas, major supporting details, and key terms. The word *annotate* means “to add marks.” By using a system of symbols and notations rather than just colored stripes, you mark the text after the first reading so that a complete rereading will not be necessary. The markings indicate pertinent points to review for an exam. If your time is short, however, highlighting with a colored marker is better than not making any marks at all. The Reader's Tip on page 298 offers an example of annotation.

Marking in the textbook itself is frequently faster than summarizing, outlining, or note taking. In addition, since your choices and reactions are all in one place, you can view them at a glance for later study rather than referring to separate notebooks. Your textbook becomes a workbook.

Students who annotate, however, will probably want to make a list of key terms and ideas on their own paper to have a reduced form of the information for review and self-testing.

Reader's Tip How to Annotate

Develop a system of notations. Use circles, stars, numbers, and whatever else helps you put the material visually into perspective. *Anything that makes sense to you is a correct notation.* Here is an example of one student's marking system:

Main idea	()
Supporting material	_____
Major trend or possible essay exam question	*
Important smaller point to know for multiple-choice item	✓
Word that you must be able to define	○
Section of material to reread for review	{ }
Numbering of important details under a major issue	(1), (2), (3)
Didn't understand and must seek advice	?
Notes in the margin	Ex., Def., Topic
Questions in the margin	Why signif.?
Indicating relationships	~
Related issue or idea	← R

When to Annotate

Plan to annotate after a unit of thought has been presented and you can view the information as a whole. This may mean marking after a single paragraph or after three pages; your marking will vary with the material.

When you are first reading, every sentence seems of major importance as each new idea unfolds, and you may be tempted to annotate too much. Resist this tendency, as overmarking wastes both reading time and review time. Instead, be patient and read through a passage or section until the end, at which point the author's complete thought will have been fully developed; and the major points will emerge from a background of lesser details. With all the facts at your fingertips and in your consciousness, you can decide what you want to remember. At the end of the course, your textbook should have that worn but well-organized look.

EXAMPLE

The following passage is taken from a biology textbook. Notice how the annotations have been used to highlight main ideas and significant supporting details. This same passage will be used throughout this chapter to demonstrate each of the four methods of organizing textbook material.

Circulatory Systems

When we examine the systems by which blood reaches all the cells of an animal, we find two general types, known as open and closed circulatory systems.

Def. I Open Circulatory Systems

The essential feature of the **open circulatory system** is that the blood moves through a body cavity—such as the abdominal cavity—and bathes the cells directly. The open circulatory system is particularly characteristic of insects and other arthropods, although it is also found in some other organisms.

In most insects the blood does not take a major part in oxygen transport. Oxygen enters the animal's body through a separate network of branching tubes that open to the atmosphere on the outside of the animal. (This type of respiratory system will be discussed in more detail in the next chapter.) Blood in an open circulatory system moves somewhat more slowly than in the average closed system. The slower system is adequate for insects because it does not have to supply the cells with oxygen.

Def. II Closed Circulatory Systems

In a **closed circulatory system** the blood flows through a well-defined system of vessels with many branches. In the majority of closed systems the blood is responsible for oxygen transport. To supply all the body cells with sufficient oxygen, the blood must move quickly through the blood vessels. A closed circulatory system must therefore have an efficient pumping mechanism, or heart, to set the blood in motion and keep it moving briskly through the body.

All vertebrates possess closed circulatory systems. Simple closed systems are also found in some invertebrates, including annelid worms. A good example of such a simple closed circulatory system can be seen in the earthworm.

Ex. R. —→ regeneration?

workers. Temporary work agencies provide people to work part time for clients who need temporary help. Most come well trained for their jobs and work in skilled areas such as computer services, secretarial services, manufacturing, and accounting. Another view of the broad presence of temporary workers in the workforce is provided by the president of a temporary help firm that provides temporary employees to such employers as Sun Microsystems and Silicon Graphics: "There's not a single major company in the United States that doesn't have a substantial percentage of the work force as contingent workers."

Telecommuting allows a full- or part-time employee to work at home while remaining connected to the employer by telecommunications devices such as computers, e-mail, the Internet, and fax machines. Estimates of the number of telecommuters in the United States vary widely, with numbers ranging from 9 million to 24 million. More than half of the Fortune 500 companies reported that 1 to 5 percent of their employees are involved in telecommuting, and some companies have large numbers of telecommuters. For example, Merrill Lynch has 3,500 telecommuters. Nortel, one of the pioneers in this area, had 3,600 telecommuters at one point. In addition, AT&T has announced a telecommuting day, encouraging and making arrangements for any worker who can to telecommute. Telecommuters can increase their quality of life by living in geographic areas that are long distances from their offices and combining work at home with child care arrangements. In addition, major disasters quickly isolate people from their jobs and places of employment. The terrorist attack on the World Trade Center on September 11, 2001, earthquakes, floods, and hurricanes have highlighted the value of telecommuting—within hours, companies whose physical plants were in ruins were making alternative arrangements to meet their customers' needs, thanks to cellular communications.

—Charles R. Greer and W. Richard Plunkett,
Supervision: Diversity and Teams in the Workplace, 10th ed.

Review your annotations. Have you sufficiently highlighted the main idea and the significant supporting details?

Note Taking

Many students prefer **note taking**, or jotting down on their own paper brief sentence summaries of important textbook information. With this method, margin space to the left of the summaries can be used to identify topics. Thus, important topics and their explanations are side by side on notepaper for later study. To reduce notes for review and trigger thoughts for self-testing, highlight key terms with a yellow marker. The Reader's Tip on page 302 summarizes one note-taking method.

Why Take Textbook Notes?

Students who prefer note taking say that working with a pencil and paper while reading keeps them involved with the material and thus improves concentration. This method takes longer than annotating, but after annotating the text, you may at times feel an additional need—based on later testing demands, time, and the complexity of the material—to organize the information further into notes.


Reader's *Jip* How to Take Notes: The Cornell Method

One of the most popular systems of note taking is called the Cornell Method. The steps are as follows:

1. Draw a line down your paper two and one-half inches from the left side to create a two-and-one-half-inch margin for noting key words and a six-inch area on the right for sentence summaries.
2. After you have finished reading a section, tell yourself what you have read, and jot down sentence summaries in the six-inch area on the right side of your paper. Use your own words, and make sure you have included the main ideas and significant supporting details. Be brief, but use complete sentences.
3. Review your summary sentences and underline key words. Write these key words in the column on the left side of your paper. These words can be used to stimulate your memory of the material for later study.

You can use the Cornell Method to take notes on classroom lectures. The chart shown below, developed by Norman Stahl and James King, explains the procedure and gives a visual display of the results.

The example on pages 302–303 applies the Cornell Method of note taking to the biology passage on the circulatory system that you have already read (see page 299). Although the creators of this method recommend the writing of sentence summaries, you may find that short phrases can sometimes be as or more efficient and still adequately communicate the message for later study.

<i>Taking Class Notes: The Cornell Method</i>	
	
<p><i>REDUCE IDEAS TO CONCISE JOTTINGS AND SUMMARIES AS CUES FOR RECITING.</i></p>	<p><i>RECORD THE LECTURE AS FULLY AND AS MEANINGFULLY AS POSSIBLE.</i></p>
<p>Cornell Method</p>	<p>This sheet demonstrates the Cornell Method of taking classroom notes. It is recommended by experts from the Learning Center at Cornell University.</p>
<p>Line drawn down paper</p>	<p>You should draw a line down your notepage about 2½ inches from the left side. On the right side of the line simply record your classroom notes as you usually do. Be sure that you write legibly.</p>

After the lecture	<u>After the lecture</u> you should read the notes, fill in materials that you missed, make your writing legible, and underline any important materials. Ask another classmate for help if you missed something during the lecture.
Use the recall column for key phrases	The <u>recall column</u> on the left will help you when you study for your tests. Jot down any important words or <u>key phrases</u> in the recall column. This activity forces you to rethink and summarize your notes. The key words should stick in your mind.
Five Rs	The <u>Five Rs</u> will help you take better notes based on the Cornell Method.
Record	1. <u>Record</u> any information given during the lecture which you believe will be important.
Reduce	2. When you <u>reduce</u> your information you are summarizing and listing key words/phrases in the recall column.
Recite	3. Cover the notes you took for your class. Test yourself on the words in the recall section. This is what we mean by <u>recite</u> .
Reflect	4. You should <u>reflect</u> on the information you received during the lecture. Determine how your ideas fit in with the information.
Review	5. If you <u>review</u> your notes you will remember a great deal more when you take your midterm.
Binder & paper	Remember it is a good idea to keep your notes in a <u>standard-sized binder</u> . Also you should use only full-sized binder paper. You will be able to add photocopied materials easily to your binder.
Hints	Abbreviations and symbols should be used when possible. Abbrev. & sym. give you time when used automatically.

Circulatory System	
Two types Open and closed	There are <u>two types</u> , the <u>open</u> and the <u>closed</u> , by which blood reaches the cells of an animal.
Open	In the <u>open system</u> , found mostly in insects and other arthropods, <u>blood</u> moves through the body and <u>bathes the cells directly</u> . The blood moves slower than in the closed system, and <u>oxygen</u> is supplied from the <u>outside air</u> through tubes.
Bathes cells	
Oxygen from outside	

(continued)

<p>Closed Blood vessels Blood carries oxygen Heart pumps</p>	<p>In the <u>closed system</u>, <u>blood flows</u> <u>through a system of vessels</u>, <u>oxygen is</u> <u>carried</u> by the blood so it must move quickly, and the <u>heart</u> serves as a <u>pumping mechanism</u>. All vertebrates, as well as earthworms, have closed systems.</p>
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exercise 6.3 Note Taking

Using a variety of markings, annotate the following selection as if you were preparing for a quiz on the material. Remember, do not underscore as you read, but wait until you finish a paragraph or a section, and then mark the important points.

WHY THE FOOD PYRAMID HAS BEEN REVISED

The limitations of the USDA Food Guide Pyramid have resulted in serious criticisms about the effectiveness of the Pyramid as a tool and led nutrition experts to question its usefulness in designing a healthful diet. One major criticism is that it is overly simple and does not help consumers make appropriate food selections within each food group. For example, all the grains and cereals are grouped into one category with no distinction made between whole and refined grains or carbohydrates. A serving of Fruit Loops "counts" the same as a serving of oatmeal.

Yet nutritionists know that whole-grain foods contain important nutrients, such as fiber, vitamins, and minerals—nutrients that are typically lost when grains are refined. To help make up for this loss, some of these nutrients, but not all, are added back through a process called enrichment (or fortification). Whole grains are also high in fiber, increase the feeling of fullness, and are typically digested more slowly than refined grains, gradually releasing glucose into the blood. In contrast, refined-grain foods are low in fiber and typically high in simple sugars, causing a spike in blood glucose and contributing to increased hunger shortly after their consumption.

A second criticism is that the Pyramid makes a poor distinction between healthful and unhealthful fats. All the fats are lumped together at the tip of the Pyramid, and consumers are told to use them "sparingly." Not all fats have the same effect on health so they cannot be easily grouped together. We want to limit our intake of saturated and trans fats, while making sure our diets are adequate in the monounsaturated and polyunsaturated fats that are essential for good health and may protect against disease.

A third criticism is that the serving sizes suggested in the Food Guide Pyramid are unrealistic or do not coincide with typical serving sizes of foods listed on food