CHAPTER 2

Courtesy of Michael Wetzel/US Air Force JROTC

Personal Behavior

Chapter Outline

"With self-discipline most anything is possible."

Theodore Roosevelt, 26th President of the United States
and Lieutenant Colonel of the famed Rough Rider Regiment
during the Spanish-American War

LESSON 1

Note Taking and Study Skills

Quick Write

Write a short paragraph about one study habit that has helped you be successful on school exams.

Learn About

- note-taking strategies
- Thinking Maps®
- good study habits
- taking tests and exams
- how to do homework

"Education is the most powerful weapon which you can use to change the world."

Nelson Mandela, former President of South Africa and Nobel Peace Prize recipient

Note-Taking Strategies

There are many benefits for enrolling in the Junior ROTC program. One benefit of your experience is that you will be taught good study habits. This lesson will help you develop a study program that is orderly and efficient. The first step to any effective study program is learning how to take notes in class. If your notes are not well organized, the time you spend studying will not be used efficiently. In this section, we will cover basic concepts, or *the most basic understanding*, of good note taking.

Taking Notes

Taking notes helps you find and remember important ideas from your reading and from classroom presentations. It also gives you a way to look up these ideas quickly later if you didn't save an article or other published material you read. Notes are also important if you don't have time to read an entire article again or have trouble remembering points made by an instructor in class.

The temptation in taking notes is to try to write down every word said or read. Resist it! What is important is the idea or concept, not every piece of information.

Keep these rules in mind:

- Use your own words to make notes.
- Condense information.
- Always record the sources of your notes.

Hints for Good Notes

Start by assuming a position of mental and physical alertness. Prepare your mind and body. A good sitting posture and a mind that is alert and involved will help you avoid the temptation to wander into other thoughts or doodle in class.

There are other things to do to prepare for good note taking. For example:

- Develop a personal notehand. This is not the same as shorthand. Notehand is *something written down using an abbreviated form such as symbols*. You may wish you knew shorthand, but that could be a handicap because you would be tempted to take down everything. With notehand, you can take down only important things, faster and better. How do you use notehand? It is your own personal set of symbols for words: a plus sign for *and*, a check mark that means *for*, the letter C underlined for *with*. You can think of many others, especially if you use abbreviations and symbols when sending text messages. Englishman Samuel Pepys kept a now-famous diary from 1660 to 1669 about events in London, England, in a curious notehand of his own. President Woodrow Wilson developed a system of note taking when he was 14. Pope Pius XII left trunks full of notes taken in his own personal notehand.
- If given the opportunity, preview, which is *to review any notes or other material to help prepare for the day's assignment before you get to class*. Then you'll know what's in the text and be prepared for the day's lesson. You won't waste time during the class.
- Have plenty of notebook paper and a sharp pencil or working pen. If you have to stop to borrow supplies, you lose time and could miss something important.

Once class begins, instructors will often teach using key words or transition words like "because," "in addition," "later," "therefore," "also," "in spite of," "along with," and "on the other hand." They are keys to the relationships between the ideas the author or lecturer is presenting.

Vocabulary

- basic concepts
- notehand
- preview
- rule
- comprehension
- cause and effect
- context
- adjectives
- comparing and contrasting
- analogy
- metaphor
- test anxiety

Instructors often give a main point special emphasis by writing it on a blackboard, whiteboard, or Smartboard®, often repeating the same thought, so that may be a hint to put it in your notes. If an instructor uses words like "here are the main causes," "the point to remember is," "in conclusion," "in summary"—words that indicate the instructor is leading to or repeating the main point—you should take notes.

Always record the instructor's examples. Make a check by these and other key ideas the instructor emphasizes. Some students write "IMP" for "important" next to those key points. Do not hesitate to ask to have a point repeated during this time, or to raise questions in class when it is appropriate to do so.

Listen for clues—such as "the four causes were" or "to sum up." There may be something important to follow. In addition, note any major conclusion if the class gets into discussion.

Pay especially close attention to note taking in the last few minutes of class time. Often the instructor "saves the best for last."

Here are some other important hints for good note taking:

- Don't try to write down everything—only the main ideas. One page of good notes is worth ten pages of trivia.
- Write in outline form whenever possible. In outlining, you group ideas so that their relationships are clear. This means creating main categories under a general topic, then organizing the specific facts under them. Outlining can come in handy when reviewing for a test. Textbook chapter headings might serve as large categories for organizing what you've learned about each topic.

Taking notes helps you find and remember important ideas from your reading.
Courtesy of Scott A. Thornbloom/www.navy.mil

Cadets ask their instructor to explain an important topic after class.
Courtesy of Michael Wetzel/US Air Force JROTC

- Take notes in *your* words, not the instructor's. To do this, you must think, organize *your ideas*, and find your own words. If you don't understand the information well enough to express it in your own words, put a question mark in the margin and ask the instructor, after class, to explain it.
- Abbreviate words you know you will remember, try to use notehand, and remember to be consistent.
- Leave a blank line or two as you write. That gives you room to add a thought, key words, phrases, or ideas that are missed. Fill in these gaps later.
- Be sure your notes are readable. Don't scribble so fast that you can't read your notes the next day. Illegible handwriting costs businesses millions of dollars in delayed orders. Thousands of letters end up in the dead letter office because nobody can read the addresses. Students flunk exams because of unreadable notes.
- Copy *accurately* all formulas, rules, and assignments the instructor puts on the board. Do not be distracted by the speaker's mannerisms, method of delivery, or the quality of his or her voice. In other words, listen with the mind, not emotions.
- Include in your notes memos to yourself to dig deeper into subjects to find out more. For example, let's say you're studying exploring space. Should we have spent billions of dollars on problems here on earth, or have we gathered enough results from space trips to justify their cost? Get facts; seek different opinions. If you are studying African American history, find out what influence Gandhi had on Martin Luther King Jr. in the non-violent civil rights movement. What do the experts think?
- Many times, you will have to read material in the course of your studies. This material may be dull and boring; nonetheless, this is when taking the time to take good notes while reading becomes useful. It can heighten your attention by forcing you to actively engage with the material. It can also encourage you to put material into your own words and in a meaningful order.

Once you complete your notes, here are a few things to consider:

- If you have a clue column in your notes, this could be the key to higher marks. As soon as possible after taking notes, make time to read these over—not studying them, just reading them. Check now, while it is all still fresh, to see if anything important was left out or is incorrect, and then make changes. In the left-hand column, set down clue words near the topics in the notes. These clue words should not repeat information, but should designate or label the kind of information you find within the notes.
- Keep your notes well organized so you can quickly find what you need. These notes will make your papers clearer, your themes more interesting, and your exams better *illustrated*. Illustrated notes clarify or explain something by giving examples or making comparisons. Your class discussions will also become sharper and more relevant, all because you have become an expert taker of notes.

Now that we have covered how and what you should look for when taking notes, the next section will cover two methods of note-taking organization. The first method is the research-based 2-3-3-2 and 2-5-1 techniques, followed by a well-organized study system known as the Cornell method of note taking.

The 2-3-3-2 and 2-5-1 Techniques

If the course is one in which a presentation or lecture and text are closely related, use the 2-3-3-2 Technique. Start with a piece of $8^1/_2$ by 11-inch loose-leaf paper. Keep notes for each class on a single side of each page in a separate notebook, or section of a notebook. Put a topic heading on each page. Then take the time to rule the page, which is *drawing a line used to separate columns or create borders*:

- Make columns of 2 inches down the left-hand side for recall clues, 3 inches in the middle for lecture notes, and 3 inches on the right side for text notes. Leave a 2-inch space across the bottom of the page for observations and conclusions.

If it's a course where the presentation or lecture and the reading are not closely related, use separate pages for class notes and reading notes, following the 2-5-1 technique:

- Make columns of 2 inches at the left for clues, 5 in the middle for notes, and 1 inch at the right for observations. (After a while, drawing the actual lines will not be necessary.) In the center section or sections, take your regular notes in the form you've learned previously.

The Cornell Note-Taking System

Another widely used note-taking method is called the Cornell Note-Taking System. This system was developed Dr. Walter Pauk of Cornell University, New York, in the 1950s. The Cornell method is widely used in high schools, law schools, and universities, providing an excellent system for organizing and reviewing your notes, and increasing comprehension and critical thinking skills.

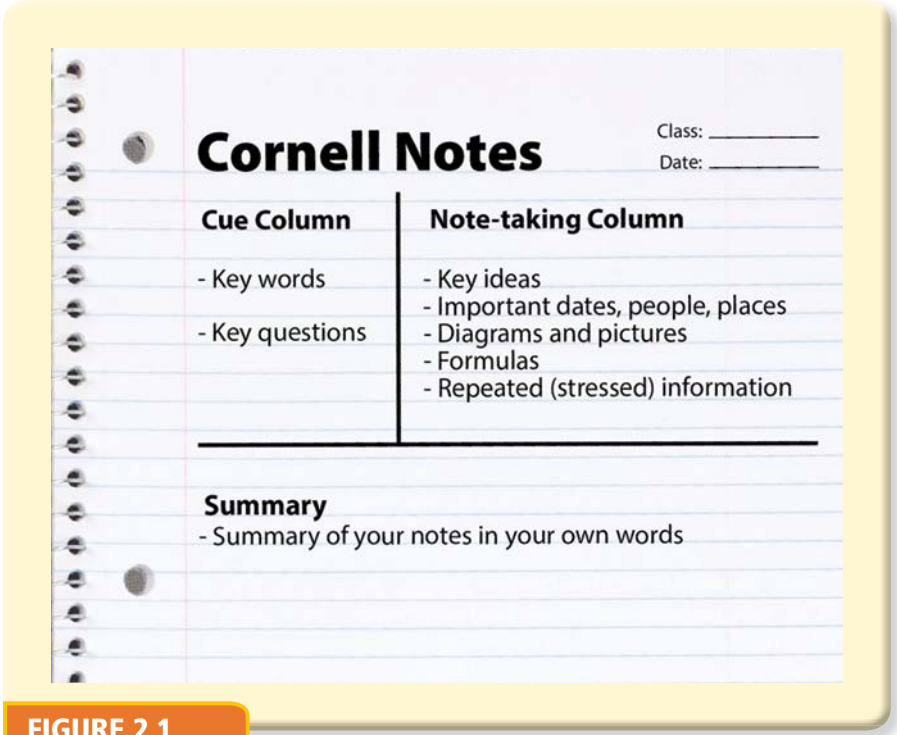


FIGURE 2.1

Cornell Note-Taking System

The Cornell method is designed to save time, yet be highly efficient when done correctly. This method uses five main strategies for taking, condensing, and organizing notes.

The first step in using Cornell Notes (see Figure 2.1) is preparation. Using a sheet of notebook paper, you will first divide the sheet into three sections. First, draw a horizontal line about 2–3 inches from the bottom across the entire sheet of paper. Second, draw a vertical line $2^1/_2$ inches from the left side of the sheet. Across the top of the sheet, write down information such as class name, date, and period.

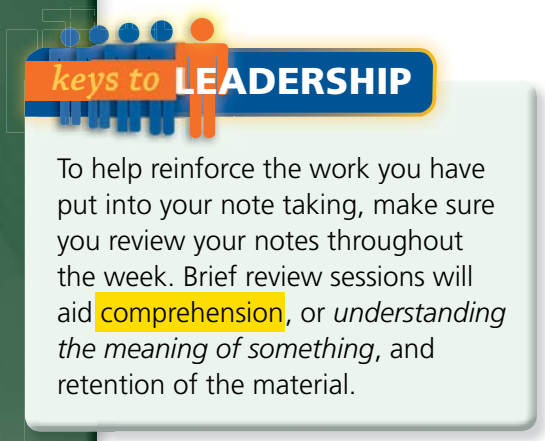
The second step is to capture your notes. Use the large box on the right side of the sheet to record your notes. Try to use notehand when taking your notes. Remember, do not try to write down every word spoken. Other useful techniques include:

- Make the notes brief.
- Put most notes in your own words.
- Skip lines to show the end of ideas or thoughts.
- Make sure you can read your own writing.
- Use graphic organizers or pictures when helpful.

The third step is to refine or reduce your notes using the narrow vertical box on the left side of the sheet of paper. Make sure you do this as soon as possible after the class ends. Use this section to write down the following:

- Questions about what you recorded
- Categories for topics covered
- Vocabulary words
- Review or test alerts; topics the instructor focused on
- Reminders such as checking dates, quotes, key points, or people

The fourth step is to recite your notes. Cover the large box on the right side of the paper. Now using the ideas, vocabulary words, and alerts you have recorded in the left column, try to recall or recite the notes you have taken in the box on the right side of the sheet. Then, by uncovering your notes on the right side, verify what you have recited. This helps transfer the information and ideas into your long-term memory.



The final step is to summarize or reflect on the material you have just covered. In the horizontal box at the bottom of the page, write down experiences, ideas, important points of the lesson, or just summarize your notes. The summary is not a word-for-word rewriting of the notes, but is for reflection on the notes taken in your own words.

Sometimes it is difficult to describe an idea or concept. It can be even trickier when asked to describe main or supporting ideas for a story, or the cause and effect, meaning *the producer and the result*, of a specific action. This is where the use of Thinking Maps® can help you.

Thinking Maps®

Thinking Maps® were created to help organize and improve critical thinking, so that you can construct knowledge much like a doctor uses a certain set of tools to conduct surgery, with each tool being used for a specific task related to what the doctor is trying to accomplish. Thinking Maps® are visual learning tools. Each map is based on a fundamental thinking process such as classifying, describing quality, sequencing, and comparing and contrasting, and can be used to show relationships.

This section will cover eight types of Thinking Maps®, each serving a specific purpose for thinking processes.

Circle Map

Circle Maps (see Figure 2.2) are used for brainstorming ideas. They can be used to define in context, or *the setting for an event, statement, or idea, in terms of which it can be fully understood*, and answer a question, such as defining "What is a drill competition?" In the center circle, use a word, number, picture, or other sign or symbol to represent an object, person, or idea you are trying to understand or define. For example, in the center circle you could write "drill competition," and in the outer circle you could write words that are related to that concept, such as "awards," "participants," "uniform," "equipment," and so on. You can write or draw any information that puts this object, person, or idea into context. Circle Maps depict the most random type of thinking.

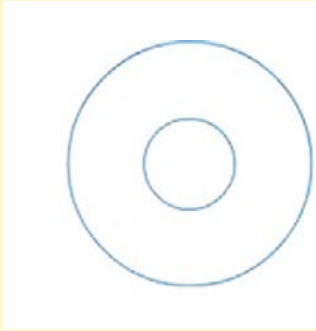


FIGURE 2.2
Circle Map

Bubble Map

Bubble Maps (see Figure 2.3) are used to describe qualities of a place, person, or thing. In the middle circle, you would write the name of the object you want to describe. For example, in the center circle you could write "JROTC," and in the surrounding circles you would write adjectives, *words that describe objects*, or an adjectival phrase. This answers the question, "Which adjective would best describe this object?" When you are done, your Bubble Map may look similar to a web or cluster. Bubble Maps are very useful for developing vocabulary, distinguishing between fact and fiction, or valuing/evaluating. Bubble Maps should not be used for brainstorming.

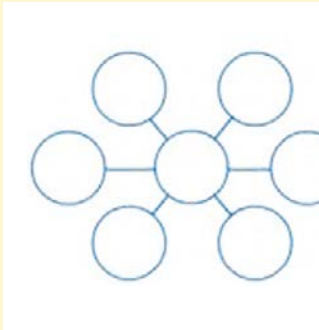


FIGURE 2.3
Bubble Map

Double Bubble Map

Double Bubble Maps (see Figure 2.4) are used for comparing and contrasting, which is *to examine two or more people, things, or ideas in order to discover similarities and differences between or among them*. In the center circles, write the words for two items or objects being investigated. In the middle bubbles, use *adjectives*, *adjectival phrases*, and other terms that show similarity between two objects and answer the question, "What are the similarities and differences?" In the outside bubbles connected respectively to the two objects, write the words that describe their different qualities.

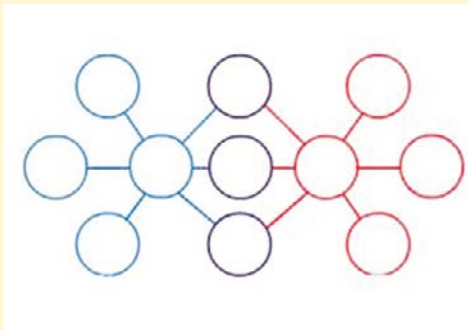


FIGURE 2.4
Double Bubble Map

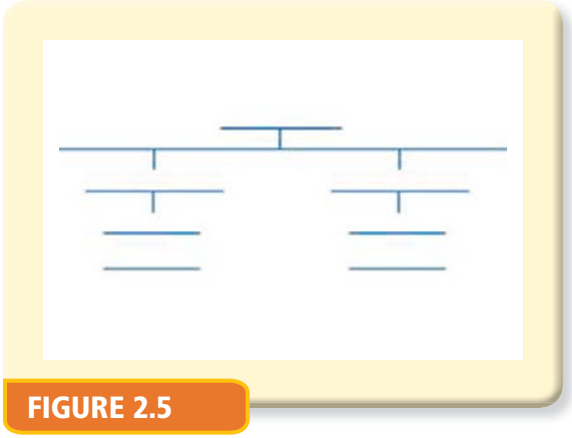


FIGURE 2.5

Tree Map

Tree Map

Tree Maps (see Figure 2.5) are used for classifying and categorizing objects and ideas according to common qualities and information about the category. A Tree Map answers the question, "What are the main ideas and supporting details of the topics?" On the top line, write a category name such as "animals." On the second level, list the subcategories such as "reptiles," "fish," "birds," and "mammals." On the next level, write the specific members of the subcategory; for example, for reptiles, write a subcategory list of frogs, lizards, etc. A Tree Map is an excellent tool for arranging objects in a formally ranked order as well as for informally grouping themes, concepts, and ideas.

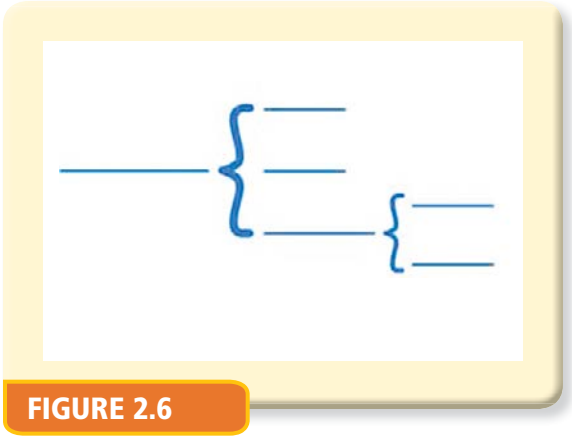


FIGURE 2.6

Brace Map

Brace Map

Brace Maps (see Figure 2.6) are used to analyze physical objects and part-whole relationships. A Brace Map answers the question, "What are the parts of the whole physical object?" On the line to the left, write the name of the whole object, such as "Air Force uniform." On the lines with the first brace to the right, write the major parts of the object, such as "shirt," "trousers," "shoes," "socks," "belt," and "hat." Then follow with the set of braces with the subparts of each major part. For example, the brace next to "shirt" would contain "name tag," "ribbons," "badges," and "rank insignia." Brace maps can also be used to identify the anatomy or physical structure of any object.

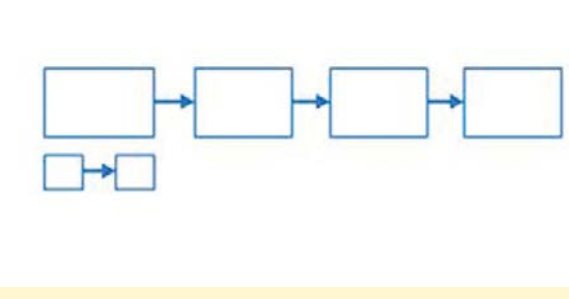


FIGURE 2.7

Flow Map

Flow Map

Flow Maps (see Figure 2.7) are used to sequence or order information. A Flow Map answers the question, "What happened?" In the outside rectangle, write the name for an event or sequence. In the larger rectangles, flowing from left to right, write in the major stages of the event. In the small rectangles below, write in the sub-stage of each major event. A Flow Map could be used to create a sequence of events needed to go on a school field trip.

Multi-Flow Map

Multi-Flow Maps (see Figure 2.8) are used for showing and analyzing cause-and-effect relationships. A Multi-Flow Map answers the question, "What are the causes and effects of an event?" In the center rectangle, write an important event that has occurred, such as "World War II." On the left side of the event, write the causes of the event such as "Japanese bombing Pearl Harbor" or "Germany attacking Great Britain." On the right side, write the effects of the event. For "World War II" this could be "millions of casualties," "war lasted 5 years," or "the atomic bomb was used." As you identify more causes and effects add them to the map. If you are studying a system, you will find that there are effects in the system that, in turn, influences initial causes. These circular cause-and-effect relationships are called *feedback loops*.

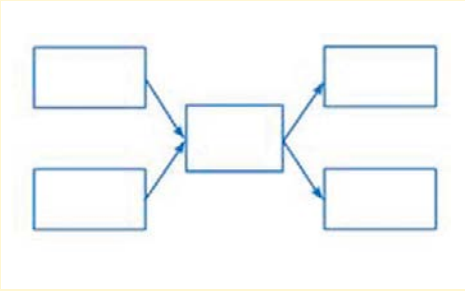


FIGURE 2.8

Multi-Flow Map

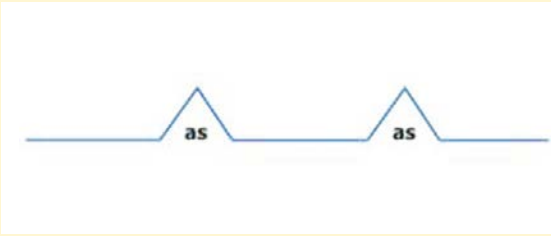


FIGURE 2.9

Bridge Map

Bridge Map

Bridge Maps (see Figure 2.9) gives you a tool for applying the process of seeing analogies. An analogy is *a comparison between two situations, processes, etc., that is intended to show that the two are similar.* It answers the question, "What is the guiding metaphor?" A metaphor is *a word or phrase that means one thing and is used for referring to another thing in order to emphasize their similar qualities*. On the line to the far left, write the relating factor. On the top and bottom of the left side of bridge, write the first pair of things that have this relationship. On the right side of the bridge, write the second pair of things that have the same relationship. This line of the bridge represents the relating factor that is "bridged over" from one side of the analogy to the other. An example of a Bridge Map is choosing two historical leaders and showing their relationship to important movements or conflicts.

Each Thinking Map® defined in this lesson was designed to help you develop a consistent way to process your thinking so you can learn effectively. Thinking Maps® are tools that can aid you in keeping your ideas organized and your research easy to read. Thinking Maps® are also excellent tools for stimulating critical thinking skills.

Thus far in this lesson, we have discussed two methods for effective note taking and how to use Thinking Maps® to improve critical thinking skills. However, for you to be successful on exams you will need an effective study routine. Studying doesn't have to be boring, dull, or difficult. It can be interesting, enjoyable, and useful.

Good Study Habits

Effective studying is the one element guaranteed to produce good grades in school. If you improve your study skills, studying will be more pleasant, learning will come faster and more easily, and grades will improve.

When to Study

A study schedule is very important to your academic success. It saves time and energy and keeps you from forgetting important things.

You should plan to study the same subject at the same time in the same place each day. Some students prefer evening for studying while others find studying right after class to be more suitable. When possible, you should study at the most productive time, such as reviewing notes right after class. If you know you will be called on to recite or to answer questions for a particular class, study your notes just before the class begins.

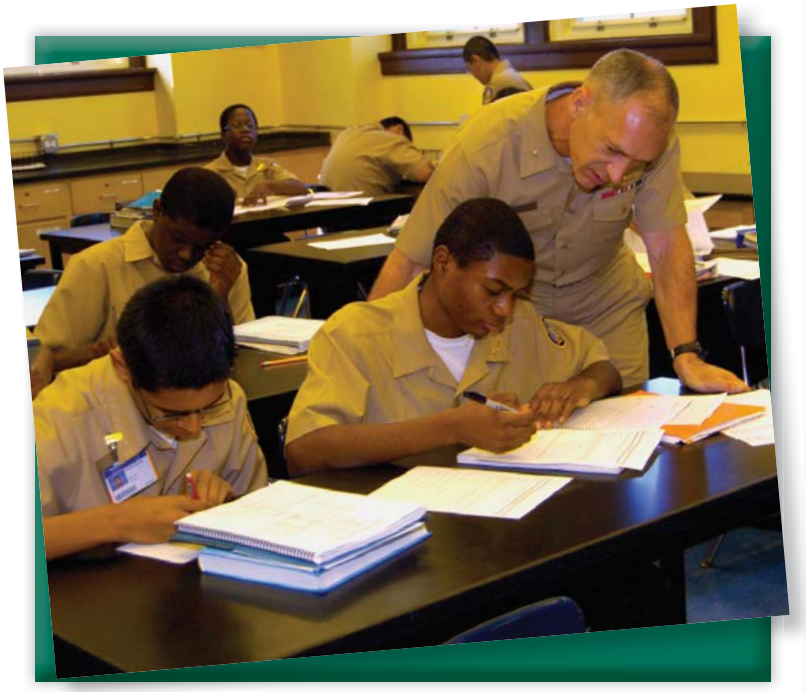
Big assignments like science projects and term papers require more time and concentration, so start those right away because you'll need time to gather materials, prepare assignments, and make corrections or revisions. Feel free to change your study schedule as necessary.

Here are a few things you can do to get the best use out of your study time:

- Avoid distractions during your scheduled study time such as computer games, text messaging, and Skyping® (unless used to form a study group), and other electronic distractions not being used directly for study.
- Make a chart for a full week. Block in all time that is committed, such as in-class hours, meetings, meals, regular chores at home, and work. Try to estimate how much time is needed each week to study for each subject and schedule those times.
- Use weekends for working on longer projects. Try to keep one afternoon open for work you can't finish on the weekend.
- Fit in health essentials—recreation, exercise, food, and sleep. They will help you get good results from studying.
- Take short breaks during long study sessions.
- Don't get stuck on one subject by spending too much time on it. Limit study time to approximately one hour per subject and only 20–30 minutes on memorizing.
- Begin with the most boring or hardest subject and work toward the easiest or the one that is most interesting.
- Study similar subjects at separate times to avoid confusion.
- Avoid studying when tired.

The OK4R Method

One way you can study effectively, as devised by Dr. Walter Pauk of Cornell University, is to employ the OK4R method. He is the same Dr. Pauk who developed the Cornell Note-Taking System.



The OK4R method is an effective strategy for studying.
Courtesy of Mike Miller/www.navy.mil

- **O** = **Overview**—Read the title, the introductory and summarizing paragraphs, and all the headings included in the reading material.
- **K** = **Key Ideas**—Go back and skim the text for the key ideas (usually found in the first sentence of each paragraph). Also read the italics and bold type, bulleted sections, itemizations, pictures, and tables.
- **R1** = **Read**—Read assignments from beginning to end.
- **R2** = **Recall**—Put aside the text and say or write, in a few key words or sentences, the major points of what was read.
- **R3** = **Reflect**—The previous step helps to fix the material in the mind. To keep it there, relate it to other knowledge.
- **R4** = **Review**—This step is not done until just before the next quiz or test.

The PQRST Method

A similar method of study is a technique devised by Dr. Robin West, associate professor at the University of Florida called the PQRST method—a way to read a textbook so that what you read becomes part of your long-term memory. In this method, you follow five steps—Preview, Question, Read, State, and Test.

The first and last steps apply to each chapter or lesson itself. The middle three steps apply to every section within a chapter or lesson. You may find that many textbooks are compiled in a way that makes this method easy to apply.

- **P** = **Preview**—First of all, preview the entire chapter or lesson—skim through it to see what is coming later. One way to do this is read the chapter or lesson introduction, look at the headings, read the section introductions, then read the summary at the end of the chapter or lesson.

- **Q = Question**—As you read through each section, ask yourself what you need to learn in this section. Start by looking for a list of questions that may be found at the end of a chapter or lesson or reading assignment. Write down the questions while reading and study them when preparing for a test. The more you try to find the answers to good, intelligent questions while studying, the more you will improve your critical thinking skills. The questions help concentration by focusing attention on main points. As you become skillful in making up questions while studying, you will notice that more and more of the questions appear on tests and exams. As you become familiar with the testing habits of individual instructors, it becomes easy to spot more and more of their test questions.
- **R = Read**—The key to effective reading is *reaction*, that is, employing critical thinking skills about what has been read. Now, you can actually read that section in detail. This will be a good time to underline or highlight key words and thoughts. This is also a good time to take notes, and apply one of the two note-taking methods covered. Read the whole section first, and then summarize it later.
- **S = State**—Once you have finished reading, say aloud what has been read. It is important to do this recalling verbally. Speak the words aloud or quietly. The only way that you can tell whether you have a topic clearly enough in mind is to put it into words. The State step helps you comprehend and be able to put to use what you've studied.
- **T = Test**—So now you have finished studying the chapter or lesson or major section. It's time to test yourself and review all the material. If you took notes, review them. Think of review in terms of testing how much you remember. If you feel you are weak in some areas of the reading material, reread chapter or lesson summaries and portions of sections where your recall is not strong, rather than merely looking over notes or materials. Even though you have only just read the chapter or lesson, now is the best time to test yourself.

In the PQRST method, it is important to state out loud what you have read.

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Every step in the PQRST method of study is a necessary link in a chain that leads to the most effective study process. It does not work miracles. Learning takes concentration, willingness to learn, and dedicated work.

In short, here's how you should think about the PQRST method:

- **Preview**—The lesson is about …
- **Question**—I'll need to learn …
- **Read**—Get the idea of …
- **State**—This paragraph says …
- **Test**—Monday's lesson and the reading said …

Memorizing

When an assignment calls for memorizing, try this method: memorize actively, not passively. Use as many senses as possible. Try to visualize in concrete terms and get a picture in the mind. Also use sound: say the words out loud and listen to the words being said. Use association: relate the fact to be learned to something personally significant, or find a logical tie-in. Ask questions in class until the lesson is understood. But don't detract from others who want to ask questions as well. If you don't understand the lesson, let the instructor know. If you dominate the entire class time with too many questions, the instructor may not have the opportunity to review the main points that will be on the test or exam.

Verbalizing some types of study may be helpful. Remember "S" for State. Repeat important dates and facts, and write them down. Each repetition makes it easier to recall the information. Write words, phrases, or formulas that must be memorized on individual 3-by-5-inch cards, and on the reverse side of each card, write the answer, meaning, etc. Study the cards until you know the material without hesitation.

Using Libraries

Learning to use the public or school library can make studying more interesting and effective. Most libraries have a reference section that has dictionaries, encyclopedias, atlases, and guides to magazines and newspaper articles. Short biographies of well-known people, medical and scientific dictionaries, bibliographies (list of books on various subjects), and yearbooks are also found in the reference section.

Libraries have become more technology-oriented so that when you are not studying, they are great places to browse. Computers help make searches for material much easier. You can also find such things as videotapes, records, microfilms, maps, filmstrips, and other visual materials that are helpful learning aids. Don't hesitate to ask the librarian for assistance. The librarian can help locate material and make suggestions on other things you might not know.

Many libraries and publicly accessible information search sites can now be found on the Internet. However, be very careful about who, where, and how this information was provided. More and more students are using the Internet to conduct research for assignments and studying. Usually, printed and online sources from public or university libraries have been thoroughly evaluated by subject matter experts to ensure material is accurate. However, when you are using an Internet search engine, recognize that there usually is no screening process or review of the material to ensure accuracy of information on websites; what seems to be fact may be just one person's point of view.

It is very important for you to know who is providing the information you are researching for an assignment or exam. Make sure to double-check the background of the author providing the information, and keep a record of trusted research websites in a "Bookmarks" or "Favorites" folder in your browser. It will not serve you well to learn inaccurate or wrong information.

Taking Tests and Exams

The best preparation for examinations is to keep up with assignments and study regularly. It's good to be concerned about taking a test, but it is not good to get test anxiety, *the excessive worry about doing well on a test*, which can mean disaster.

When reviewing, try to anticipate the questions the instructor might ask by checking in your notes for the main points the instructor seemed to emphasize in class discussions. Review the material under each heading and try to figure out what kinds of questions could be asked about it. Understand the information and relate it to what you already know.

If the test is objective (short answers), pay attention to details while you study. A more subjective essay test might emphasize relationships among different topics of the course material. You should pay attention to these relationships from your notes.

Above all, don't cram—that is, try to learn everything at one time the night before. It is very ineffective. Other things going on around you that cause you to lose sleep or place disorganization into your daily living habits may produce feelings of nervousness, tiredness, and confusion. These may tempt you to cram for your exams. However, cramming, at its worst, can cause you to lose the facts that you so frantically accumulated in a short time.

Once you sit down to take your exam, read directions carefully when the instructor hands out the test. If you don't understand the directions, ask the instructor to explain them.

You can take two important and effective steps to improve your grade, especially on a short-answer test.

1. **Survey the exam** for 30 seconds to see how many questions there are, how difficult each one is, and the grade value given to each question. If the number of right answers determines the score, guess at questions you do not know. Don't guess, however, if the wrong answers will be subtracted from the right answers. In this case, guessing will hurt your final score.
2. **Move along at a steady pace**—Skip difficult questions and come back to them later. Don't waste time worrying about them. If you have time at the end of the exam, return to any unanswered questions. Mark the questions you skipped so you can find them easily.

When your exam is returned, don't just look at the grade and the comments. Study in detail the questions missed and analyze the wrong answers. This will help you prepare more effectively for the next exam and improve your study habits.

Tips for Different Kinds of Tests

- **Completion**—Don't leave blanks. An answer thought to be wrong may be acceptable. Go back and check over the doubtful questions with a fresh viewpoint; this may eliminate a mental block.
- **True–False**—Guess if there is no heavy penalty on T–F questions.
- **Matching**—Answer the easy ones first to reduce the number of choices. Mark only one answer for each term.
- **Essay**—Keep these points in mind when preparing for an essay exam:
  - Read all the questions first and use the margin for noting phrases that relate to the answers. These phrases will help you write the essay answer.
  - Know the meaning of cue words such as these:
    Analyze—to examine critically to show essential features.
    Compare—to show differences or similarities between two or more things.
    Contrast—to show differences when compared.
    Define—to give a clear, not detailed, but precise meaning.
    Elaborate—to develop a theme or idea in greater detail.
    Evaluate—to appraise carefully, giving both the positive and negative aspects.
    Explain—to clarify and interpret the details of a problem, theory, etc.
    Illustrate—to explain or clarify by giving an example.
    List—to set down under each other a series of facts, dates, words, names, etc.
    Outline—to organize facts by arranging them in a series of headings and subheadings to show relationships.
  - Organize the answer; do not write haphazardly about the first idea that comes to mind.
  - Write legibly, writing what an instructor can't read may cause that instructor to mark the answer wrong.
  - Read and check what you wrote before you turn it in. Be sure to answer the questions that were asked.
- **Multiple Choice**—This is the most common method of administering assessments or exams; follow these tips:
  - If using a bubble sheet to record your answers, be sure your responses are numbered in the order of the questions, and be sure to fill in the bubbles completely.
  - Always cover up possible responses with a piece of paper or your hand while reading the question.
  - Have an answer in your head before looking at possible answers.
  - Read all the choices before choosing your answer.
  - Eliminate answers you know aren't correct.
  - Don't keep changing your answer; your first choice is usually the correct one.

- In a question with an "All of the above" choice, if you see at least two correct answers, then "All of the above" is probably the answer.
- Usually the correct answer is the one with the most information.
- Responses that use absolute words such as "always" or "never" are less likely to be correct.

Final Thoughts

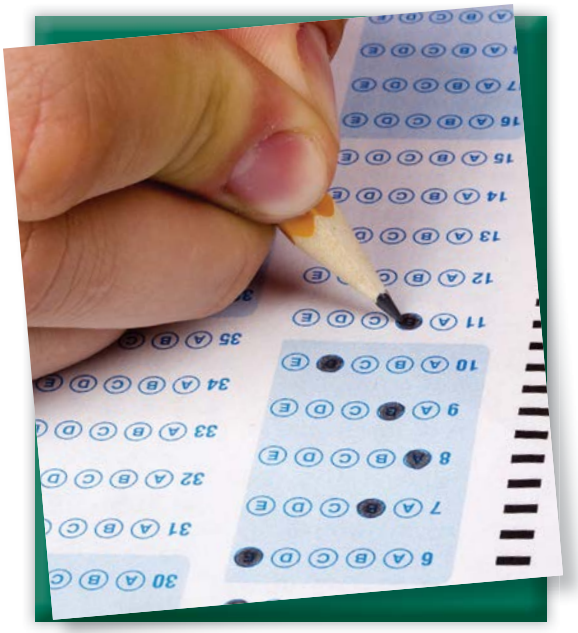
To get the most out of any class you take, start by developing a positive attitude toward taking good notes and developing good study habits. Set some goals and work toward achieving them. We'll talk about setting goals later in the textbook.

Remember that good grades start with paying attention in class. Complete assigned reading on time. Do the same for homework assignments and proofread all material handed to the instructor. This will make classroom work, note taking, and study preparation for tests easier and more effective.

For your note taking, remember to have a system and order to the notes no matter what method is used. Give adequate attention to all notes. Divide them into several sections. Review them often—not just before a test. Set aside adequate time daily for review. This repetition may seem boring, but it is an effective learning method.

Also remember not to spend too much time studying all at once, a form of cramming. Take frequent breaks while studying (about every 15 minutes). Clear your head, or use the time to think about what you have learned or what you may have missed.

Before a test, review your notes one more time in order to organize your thoughts. This is not only a way to reinforce the notes; it is a good way to commit the material to your long-term memory.



Your success as a student depends on studying that you do by yourself.

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How to Do Homework

Learning can be lonesome. Much of what you learn will come from the study you do in your own room. The homework assignments you complete, the required books you read, the TV documentaries you watch, the reports you work on, and the experiments you do—all of it is the heart and soul of your education.

You can cram with friends for an exam; however, as noted earlier, your success as a student depends on the steady, night after night, responsible effort you put in yourself. If the effort is not there, your work will show it.

Ignace Jan Paderewski, the great pianist, said, "If I miss one day's practice, I know; if I miss two days, other musicians know; if I miss three days, my audience knows."

There are always a few individuals around who brag that they didn't crack a book last night. However, when they want to get into a college, or get a good job, their ignorance will show.

Dr. James Conat, author, chemist, and former president of Harvard University, recommended each student do 15 hours of homework/study a week. That's three hours a night if you want your weekends free! Homework is your personal responsibility, not that of your parents or guardians. You don't learn the math if someone else works the problem. A science exhibit is not really yours if your brother did most of it.

A Homework Plan

If possible, have a regular time and place to study where you won't be interrupted. Study at the same place, same time, every night if possible. That conditions your mind to want to study as soon as you get there. It's best to have a room of your own. Your room should be physically comfortable. It should also be well lighted. Eyestrain brings on fatigue and nervous tension. Get glasses or contact lenses if you need them. Let fresh air circulate through the room to keep from getting drowsy. If needed, you can study at the kitchen table, as long as it's comfortable. The kitchen table may also be a good place to host your study group, as long as there are no distractions.

Get your tools: textbook, computer, notebook, sharpened pencil or pen, and everything else you need. A surgeon would not go into the operating room without his instruments "at the ready."

Using a computer could make your papers more readable and easier to do. Word processing programs will run spelling and grammar checks on your work for you, though they will not catch all errors. They also help you define words. However, if you do not have access to a computer, a good dictionary and encyclopedia are sound investments, too. Hearing the material over and over may be a good learning method for you. Reciting lessons on a recording device may help your memory of key lessons or homework material.

American novelist Sinclair Lewis, the first American writer to receive the Nobel Prize in Literature, believed that success in writing came largely from "applying the seat of the pants to the seat of the chair." The same applies for your homework. Have a comfortable chair, but don't slouch in it. Have a table to spread your work out on. Remove distracting objects from the area where you are doing homework or studying.

Maintain a personal bookshelf and a bulletin board to thumbtack clippings, pictures, memos, statistics, and anything that will add to your learning.

Turn off the radio and TV when it affects concentration. If your material is fascinating, it's possible to study even with radios, friends, or a marching band in the room. However, when the material is dull or difficult, a pin dropping could be distracting. Most learning takes everything you've got. So, concentrate!

If you are expected to discuss a topic or assignment in class the next day, do a trial run the night before. Watch yourself in the mirror while you speak. If you can, record it, then listen to see how you can improve it. During the next day's class, you will feel more comfortable when called on.

If you finish early, try to read something extra, just for pleasure, if for no other reason. Every bit of reading adds to your knowledge. When your homework is done, reward yourself with something you like!

Try to get your clothes and books laid out the night before. Be ready for a calm, unhurried start in the morning. Tomorrow is a brand new day and you're ready for it. You know more. You feel like a disciplined, organized person. You've done your homework!

CHECKPOINTS

Lesson 1 Review

Using complete sentences, answer the following questions on a sheet of paper.

1. What information should you be looking for when taking notes, resisting the temptation to write down every word said or read?
2. What are three rules to keep in mind for effective note taking?
3. List three things you can do to prepare for good note taking.
4. What is the advantage of taking notes during reading assignments?
5. What are the five main strategies in the Cornell Note-Taking System?
6. Name three thinking processes that Thinking Maps® are based on.
7. What type of thinking does a Circle Map depict?
8. What are Multi-Flow Maps used for?
9. Why is it so important to study effectively?
10. What are the five steps of the PQRST method of studying?
11. What are two important steps to improve your grade, especially on a short-answer test?
12. To get the most out of any class you take, what should you start with?
13. You should select a regular place and time for daily study. This will condition your mind to do what?
14. If you are expected to discuss a topic or assignment in class, what should you do the night before?

APPLYING YOUR LEARNING

15. Select one strategy from each of the five sections of this lesson to create a plan for improving your grades in a class in which you currently struggle.