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TABLE OF CONTENTS

INTRODUCTION

1	ART	A1
2	BIOLOGY	B1
3	CHEMISTRY	C1
4	COMPUTERS	D1
5	EARTH AND SPACE SCIENCE	E1
6	ECONOMICS AND BUSINESS	F1
7	GOVERNMENT	G1
8	HISTORY—UNITED STATES	H1
	The Presidents	H82
	The Constitution	H90
	American History at a Glance	H106
9	HISTORY—WORLD	I1
	World History at a Glance	I144
10	LANGUAGE ARTS	J1
11	LAW	K1
12	LITERATURE	L1
13	LIVING INDEPENDENTLY	M1
	Diet and Nutrition	M2
	First Aid	M24
	Physical Fitness	M41
	Mental Health	M43
	Drugs	M47
	Checking Accounts	M49
	Financial Aid	M52
	Traveling Abroad	M57
14	MATHEMATICS	N1
	Mathematics Tables	
15	MEDICAL TERMS	O1
16	MUSIC	P1
17	MYTHOLOGY	Q1
18	PHILOSOPHY	R1
19	PHYSICS	S1
20	PSYCHOLOGY	T1
21	RELIGION	U1
22	STUDY AND LEARNING AIDS	V1
23	TECHNOLOGY	W1
24	WORLD AT A GLANCE	X1
25	USEFUL TABLES	Y1
	ACKNOWLEDGMENTS	Y30
	INDEX	Z1

HOW TO STUDY AND TAKE TESTS

THE STUDY PROCESS

An average beginning college student has spent over 22,000 hours studying from the time he or she began school until the twelfth grade. This enormous amount of time could have been reduced considerably through dynamic study skills. But most students are never really taught *how* to study. It's a process they are expected to learn on their own.

Efficient studying does not simply consist of reading, underlining, and rereading. Your new study process will consist of reading, writing, thinking, and recalling. It is based on the layered learning process and actually takes less time than your old method of study. It may seem longer at first, but each step takes less time, and because it is so well structured, you will have better recall at test time.

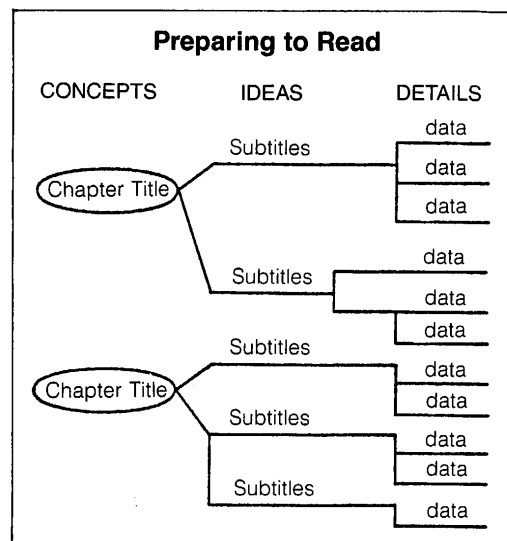
Time and time again students have proved that reading and recalling is much more effective than spending all their time reading and highlighting. The only way to learn the material is to become actively involved in absorbing and integrating it. Study reading is an active process, not a passive one.

Prepare by Browsing Through Texts

Survey to get an overview of the book, turning pages quickly so that you spend about two minutes to gather the information that answers the following questions:

- How is the book organized?
- What are the main subject areas?
- What do I already know about these areas?
- How difficult is the material, and how difficult is its presentation?

Begin to structure your notes around the design of the book. Decide how much material you wish to learn. Draw a chart that will help organize the material. Place the more important information to the left, details to the right. Leave more room under topics and titles that involve more pages. Draw these maps and lines before reading to help your mind organize and store the data better. Here is an illustration of how you would set up your paper:



Preview Assigned Chapter

Move quickly, skimming through the chapter much faster than your usual reading rate. Your purpose here is to find out what is important and how it is presented, not to read it. Check all bold-faced headings, turning each into a question you will answer later. Also check copy under the chapter titles, each of the subtitles, and the main ideas. This will only take a few seconds a page, but it will give you important clues to the material and help you later to read it faster, because you will be prepared for new ideas. Look over the visual aids, such as maps, charts, diagrams, illustrations, and pictures to help you grasp each point more quickly. Then read any summaries or questions included at the end of the chapter. Summaries are usually helpful because they include the points the author thought were most important.

Before proceeding with your study, set two goals. Set a comprehension goal: decide how well you need to know the material. Will you be tested? If so, how thoroughly? Set a time goal for your particular section or chapter based upon how well you need to know it. In easy or familiar material, your goal may be fifteen pages an hour. But whatever your goal, make sure that it is only for one chapter or section—setting lengthy or unrealistic goals only leads to discouragement and failure. By achieving both these goals, you will speed your study time greatly.

At this stage you should have in your notes the chapter title, subtitles, and all major ideas. You should already know a lot about the material.

Understand, Don't Memorize

Now is the time to read the chapter as quickly as you can to understand the ideas. After each page

or major idea, go back to your notes and add the supporting details to them. Do not proceed more than a page without writing something down. This is an important key to textbook comprehension and retention. Respond to the material by continually summarizing it in your notes, using your own words. The old way of studying was to read and forget. Get into the habit of reading and responding. You will find even the most boring books become interesting.

Reduce the use of underlining seemingly important thoughts; do not use highlighter, Magic-marker, or felt-tip pens. Such a study method is premature; you are not in a position to judge what is most important until you've read the entire chapter. It postpones learning; you may simply color the material, rather than understand it. It is permanent; have you ever tried to erase it? It gives all material equal weight. It distracts; have you ever tried to read a used book marked with highlighter? It devalues the book; it ruins the appearance and resale value of the book.

Instead, use a pencil to mark important ideas. Whenever something looks valuable, put a check mark in the margin, just to the side of the passage. This marks what is important, but is not permanent. Later, during a review you can reevaluate your marks and leave them in place, erase them, or add a second mark for emphasis. This system is one of the most valuable tools you can use. Not only is it flexible, but it is quite inexpensive. Continue reading each chapter, marking what is important with a check and adding to your notes until you are finished.

Review Material

Go back through the chapter and reread it quickly to refresh your memory. Answer the chapter questions, see relationships, and complete your notes. Look at your notes. Do you now have details to support each main idea? Can you study that chapter from your notes? The answers should be yes. Your goal has been to get the material out of the text into your notes, then into your mind. Textbooks are often wordy and difficult to understand. Put the ideas in your own words and you will learn the material much more quickly.

The following questions can help you evaluate textbooks and other nonfiction works:

- Do you clearly understand the author's goal? If not, check the preface, foreword, and introduction.
- Do you understand how the author has presented his or her material? What do you think is the general method of presentation? What are the main ideas? Minor ones? Check the table of contents for these answers.
- What are the conclusions drawn by the author? Do you agree with them? Why did the author come to those conclusions? If you do not agree, in what areas was the author weak? Were the author's premises weak, or only his or her conclusions?

- How would you compare the author with anyone else you may have read? Is the book up-to-date? What else have you read that either reaffirmed or conflicted with it? In what ways?
- Can you now relate the text material to class lecture notes?

Think and Recall Notes

Spend time to integrate and remember your material because this is as important as reading it. If your notes are unclear, try rewriting them, basing your organization around the main ideas. Think about the concepts presented in the chapter, and try to explain them in your own words. Practice recalling information with and without your notes. Try to study as much as possible from your notes. They are bound to be more understandable than the text. Do not spend your time reading and rereading your texts. Your exams are a test of your thinking and recalling abilities, not usually your reading skills. So practice thinking and recalling your notes and the text material.

The Study Process

Use this procedure to provide a plan of attack for study.

BROWSE:

Entire book
Note vocabulary, degree of difficulty, style, organization

PREVIEW:

Assigned section
Note main ideas, charts, diagrams, maps, illustrations, formulas, topic sentences, summaries, questions

Write main ideas

READ:

To understand, not to memorize
Respond as you read; write after each section, depending on material

REVIEW AND CHECK:

Notes on chapter; fill in gaps—refresh memory.
Make sure text and notes agree

RECALL:

Chapter or section, first from memory, then double-check from notes; think about your material

READING FOR RESULTS

As important as reading is to success in school, many students dislike it. Those who do like to read are usually good at it. A conclusion one might reach is that people like to do things they're good at. This section is designed to help you improve your reading so that even if you still dislike some of your texts, at least you'll be able to dislike them for less time. First we discuss rapid reading—an essential for success in school.

No Limit to Reading Speed

Would it help you if you could read twice as fast as you read now? How about twenty times as fast,

and with better comprehension? If that sounds impossible, it's not. The human mind is capable of seeing and understanding material as fast as one can turn pages, and some people do read that fast. John Stuart Mill, Theodore Roosevelt, and John F. Kennedy were all naturally fast readers, as have been many others. They were what are known as gifted readers: those who read very fast with excellent comprehension. Gifted readers come from every walk of life, for reading is a skill not related to age, occupation, heredity, or intelligence. The only reason that you may not read fast now is because your natural gifts may have been smothered in school.

The way reading is taught in most public schools is the same technique used a century ago. Curiously, the average American reads at about the same rate today as 100 years ago. Most people read between 100 and 400 words per minute, the national average. But slow readers are severely penalized throughout life and are simply unable to keep up because of the tremendous volume of reading required today. It is hoped that schools will change their methods of reading instruction so that someday all students will be rapid readers. In theory, the only things that should decide reading rate are the student's background in the subject, the purpose for reading the particular material, and the ability to turn pages. Some readers, tested in difficult textbook material, have read thousands of words per minute with excellent comprehension. That's over a dozen pages per minute. Yet some of these same superreaders used to read at rates of only 200 words per minute. So it is certainly possible for the average reader to increase his or her reading speed considerably.

What limits your reading rate? Poor habits, such as subvocalization (pronouncing words to yourself), regression (going back to reread material already covered), prolonged fixation (stopping and staring at one word), and inefficient eye movement (losing your place and wandering between lines). These poor habits cause tired eyes, boredom, low speeds, and low comprehension. It is not ability that you lack, it is training. Because we are taught to read at 100-400 words per minute, we are led to believe this is our "normal rate." But these rates are no more normal than 10 or 10,000 words per minute. Improving your rate only takes proper training and time.

A book cannot give the kind of help necessary to make a dramatic increase in your reading skills. But, until you can get some professional help from a well-trained, rapid reading instructor, there are some positive steps you can take.

Hand Reading

As children, we were generally taught not to underline words with our fingertips. But this method actually helps increase speed and comprehension. It builds speed in reading because it prevents unnecessary backing up and rereading, which consumes about one-sixth of your reading time. It also prevents unneeded, prolonged fixations—the habit of staring at one word or phrase for a long

period. Reading with your hand on the page improves your comprehension because it directs your attention to a spot instead of allowing your eyes and mind to wander. Simply place your fingertip under the first word and move it along at a comfortable rate, underlining each word. Be sure to pick up your finger at the end of each line, lifting it to begin the next one. Read directly above your fingertip, and watch your rate soar.

How to Adjust Speed

Do not read everything at the same rate. You should read light fiction quickly and technical texts at about one-half that rate. When you read easy material, speed up and you will enjoy reading more. A common misconception is that reading faster ruins enjoyment. This is not true. When you were in first grade, you probably read at a rate of 10-50 words per minute. Now you may read 100-500 words per minute, a full ten times faster! Did you lose any enjoyment from books? Of course not, and, in fact, you may enjoy books more now than when you read slowly. Decide upon your purpose and read to seek the level of comprehension you require. When your purpose in reading is entertainment, read faster than usual. If you are responsible for retaining the material, take notes often, reread difficult passages, and read at your maximum rate of comprehension, not to memorize.

See Yourself as a Good Reader

Do you see yourself as a slow reader or as a fast reader? Your actions are consistent with your conception of yourself. Always push yourself, being aware of what you need to get out of the material. Believe you can get what you want, when you want it and you will have no problem achieving your goal. Seeing yourself as a fast reader can become a self-fulfilling prophecy.

Sit back, close your eyes, and picture yourself sitting down at a desk reading rapidly with excellent comprehension. Imagine yourself at a desk or table you know well, moving down the page, not only comprehending what you have read, but quickly recalling it from your notes. Practice this once or twice a day for about two minutes each time. Within several weeks you should see a notable improvement in your reading speed.

Range of Vision

One reason you might read slowly is that you read with a narrow, constricted, "hard focus;" you have disciplined your eyes to see only a couple of words at a time. This severely limits your speed. Your reading focus is different from your usual vision. The difference is easy to explain. What do you see when you look outside your window? Do your eyes focus only on a spot three-quarters of an inch by five-eighths of an inch? What you see is an entire panorama with everything in focus. You should see a page in the same way.

In order to regain your usual range of vision for reading, you will need some practice. This will require the use of both hands and a large book. Flip through the pages of the book quickly, turning them from the top with your left hand and pulling your eyes down the page by brushing down each page with the edge of your right hand. Your fingers should be extended and relaxed. Follow your hand down each page with your eyes, trying to see as many words as possible. Start by brushing each page in two or three seconds, gradually reducing the time spent on each page until you can go as fast as you can turn pages. Pace yourself, starting at twenty pages a minute, slowly increasing to one hundred pages a minute within one to two months. This practice work helps your eyes see more words at a time by preventing zooming in or focusing only on individual words. Practice for five minutes a day for several weeks. Remember that it is unlikely that you'll read faster without practicing. Reading is a skill, and as with any other skill, all the instruction in the world won't help you unless you actually practice what you learn.

Some students are afraid that if they go faster, they'll miss words. But they already know most of the words they are about to see. There are over 600,000 words in our language, but 400 of them compromise sixty-five percent of printed material. These are structure words that have no meaning, but they tie the sentence together. For example, in the second sentence of this paragraph, the structure words are *but, of the, about, to*. Remove those words and the sentence is choppy, but still readable: "They already know most words they are see." Since you've read those 400 words many times, don't let them slow down your reading by dwelling on them.

A famous psychologist, James Cattell, determined through research that our untrained visual capacity is about four words in one-hundredth of a second. That is 400 words a second or 24,000 words per minute that we're capable of seeing and understanding. Australian psychologist John Ross has reported that the human mind can process depth information in 0.0002 seconds. He defines depth information as nonfiction technical material. Some students may wonder whether or not they can comprehend material by reading at a faster rate. You can. Just practice and you'll see results immediately.

Do not worry about understanding everything when you read fast. You can see and understand everything, but merely reading something does not ensure retention. You will retain information by practicing recall, not by reading more slowly. Usually the more slowly you read, the more the mind wanders, with little comprehension and recall.

The ideal level on which to read is a purely mental or intellectual plane: Do not clog or block information in your mind by negative emotions, such as anxiety, worrying, and fear of "not getting it." If you develop an open, positive, "go-for-it" attitude, you'll read much better.

At higher rates of speed it's also helpful to talk to yourself. Discuss aloud the topic of each para-

graph for additional clarity and reinforcement. Conceptual vocalization, the skill of thinking out loud, enables you to better process ideas and concepts.

In order to get the comprehension you need at faster speeds, it helps to have an adequate background in the material. You can get background information in several ways: (1) from reading other material on that subject, (2) from personal experience, and (3) from prereading. The purpose of prereading is to become familiar with the main ideas and to organize those ideas into a pattern. This organizing step is crucial to developing speed in reading textbook material.

One other hint that will help you read faster is often overlooked: Hold your book four to six inches farther away from your eyes than usual. Your eyes won't have to work so hard because the farther objects are from your eyes, the less movement it takes to see them all. So be sure your material is at least fifteen inches from your eyes; you'll enjoy increased speed and comprehension, and reduce fatigue.

Improving Concentration

Readers with the best comprehension are usually fast readers. The more slowly you read, the more chances there are for you to daydream and lose concentration and hence, comprehension. Comprehending well is a process and a habit, not a mystery. Actually, comprehension is a twofold process: (1) perceiving and organizing information, and (2) relating that information to what you already know. Several factors determine the degree of comprehension you'll get from the material you read. Those factors are your background in that subject, your reading skills, and the organization and presentation of that material.

There is virtually no comprehension when the reader does not have the necessary vocabulary and background. Comprehension is largely dependent on how well the reader already knows the subject. Because background increases the vocabulary and subject familiarity, get the most amount of prior knowledge you can. Then processing becomes almost subliminal, it happens so fast. When the reader has an extensive background, there is even a point at which material can be read prior to conscious awareness. Background is the reason a beginning law student might read at 70-200 words per minute, yet a practicing attorney can read the same material much faster. Therefore, the first habit to get into that will build comprehension is to gain the necessary background for that subject. Two excellent ways to accomplish this are listening to lectures and reading other, easier material on the same subject.

Greater Meaning

Reading is an active process, not passive. Anticipate ideas and read for a purpose—to answer your questions—by actively searching for the information you want. Have questions in mind before you read, not afterward. If you begin reading a book

with questions, you'll complete your reading with the answers. Think about the important points and read to understand them. Be confident that you can get what you want, and you will. Do not argue with the author while reading. Save critical analysis for later, so you will not slow yourself down, lose concentration, and miss the flow of the material. Put pencil checks in the margins of the sections you would like to go back to.

Understanding, Not Memorizing

In order to have a smooth, continuous flow of information in your mind, don't stop to memorize facts. Save that process for later when you study your notes, and then continue. At all times you should read as rapidly as you can understand the ideas.

Cultivate a Positive Attitude

You must care about what you are reading or studying. If you don't, create a need to care. Use positive reinforcement. You might say to yourself, "Once I get this reading done, I'll be able to do something I enjoy more." Don't use negative reinforcement or a self-threat, such as, "If I don't get an A in this class, I'll lose my scholarship." If you maintain a strong, receptive attitude, you will find comprehension will be easier because you are not fighting yourself. Fighting reading is much like panicking while swimming. The secret is to relax.

Upgrade Poor Habits

It's difficult to comprehend what you read when you are tired, sleepy, depressed, or in pain. Some students complain that their comprehension is poor while doing their reading at three in the morning. At that hour, many couldn't comprehend the morning newspaper. It is critical to be not only alert, but relaxed. Be comfortable and in tune with the subject of the book. Reading posture definitely affects comprehension. Sit at a desk when possible. Study in an upright position with the book flat on the table, fifteen inches or more away. The more stretched out and relaxed your study position, the more you will encourage its usual result—drowsiness, poor concentration, or sleep. If you want comprehension, speed, and retention, sit up alertly and act like you are serious about accomplishing the task.

Layered Learning Process

The study procedure described in the previous section is an extremely useful tool for comprehension. Basically it involves approaching the material on several levels, and taking notes after each. As a review, here are the steps:

- Browse through the material, becoming aware of its structure, complexity, and organization.
- Prepare and preview the material more slowly, noting bold-faced headings, summaries, subtitles, visual aids, and topic sentences. Add main ideas to your notes. Set your purpose: Exactly

what level of comprehension do you need? How far away is the exam? With your purpose in mind, set a realistic chapter or section goal.

- Read the material, a chapter at a time, moving as quickly as you can understand the ideas. Stop after each page and add details to your main ideas.
- Review your notes and text, filling in gaps, viewing the overall content and organization, and refreshing your memory.
- Think about and recall the information.

Organize

Your mind seeks organization, logical sequences, and order. Give it a chance to comprehend the material by grouping ideas and details into meaningful blocks. Restructure the material into easy-to-picture thoughts. Use every possible combination of thought pictures that will work. When you perceive the unity and structure of the material you are studying, you will grasp its meaning much faster. Strive toward understanding the structure as well as the details.

Write as You Read

Get in the habit of immediately recalling on paper what you have read. Because you will understand each point better, the following point will be that much clearer. Comprehension depends upon understanding each preceding idea. The better you understand and recall one idea, the more likely you will understand the next. Stick to each part of the study process, and you will find comprehension becoming a habit.

Reading Points to Remember

Read for speed

1. Realize that there is no limit to your speed.
2. Read with your hand.
3. Learn to adjust your rates according to material and purpose.
4. See yourself as a good reader.
5. See more words at a time.

Read for comprehension

1. Read quickly to improve concentration.
2. Read actively for greater meaning.
3. Read to understand, not to memorize.
4. Maintain a positive attitude.
5. Upgrade poor physical habits.
6. Use the layered learning process:
 - Browse
 - Preview
 - Read
 - Review
 - Recall
7. Organize what you read.
8. Write as you read.

TAKING NOTES

Efficient notes are vital to straight As. Most of your studying should be done from notes taken in class and from the text. Your notes show how well you understand material presented. Students are not usually taught how to take concise, creative notes. Most have to learn from others or through trial and error. Learn the following basics and then use your creativity to develop the formats that work best for you and the subjects in which you are interested.

Summarize, Don't Duplicate

Your notes should not be a re-creation, but rather a synopsis, a synthesis. Accuracy is your first consideration. But beyond that, try to reconstruct the material in your own words. This is the beauty of good notes: They are more understandable and interesting than a text or lecture. Include as many examples as time or necessity permits.

Shorthand

It is time consuming to spell out each word you choose to include in your notes. You can phonetically abbreviate by using the consonants of a word to create a phonetic representation that you will be able to write rapidly and interpret easily for review. Look at the following sentence from a lecture given in a literature class:

Jean-Paul Sartre is a French existentialist who was born in Paris in 1905.

Your notes might read as follows:

Sartre, exis, Paris 1905.

Use as many symbols and abbreviations from math as you can. The following table shows some symbols that can be used for shortcuts in notetaking.

Notetaking Symbols

SYMBOL	EXPLANATION
>	Greater than, more than
<	Less than
=	The same, equals
≠	Not the same, different
X	Times, cross, trans
↑	Toward, going
↓	From
∴	Therefore, because
∞	Infinity, a great deal
(+)	Positive, good
(-)	Negative, against
c,w/	With
w/o	Without
↓	Down, under, decreasing
↑	Above, up, increasing
\$	Dollars, money
Q	Question
A	Answer

Titles and Headings

The thoughts and ideas you record will not all be of the same importance. With some practice, you

will begin to automatically write more important ideas in larger size print and details in a much smaller size. Such variations will help you remember your notes more easily and make them more fun to take down. Another helpful method is the use of geometric shapes to identify and categorize ideas. The following table shows some examples.

Geometric Key for Use in Notetaking

GEOMETRIC SYMBOL	EXPLANATION
□	Main Ideas: Inserted in square
✓	Main Ideas: Marked with check
✓✓	Important Concepts or Facts to Remember: Marked with two checks
○	Names of People: Circled
▭	Minor Ideas or Details: Inserted in rectangle
△	Reasons, Why, How: Inserted in triangle
→	Relationships or Connecting Ideas: Indicated by arrows and letter size to show subordinate ideas

Format of Subject

Each subject group has basic characteristics that help you organize your information and thoughts on that particular subject. Notetaking stumps many students because in some textbooks the information on each page is not well organized. Some books may go for a dozen pages without bold-faced headings or changes in organization. Difficulty in studying and taking notes often arises from such textbooks. Fortunately, most textbooks are better written today than they were years ago. Many have chapter summaries, bold-faced headings, and questions to answer. But when you use a book that does not indicate what is important by its format, use the information in the table that follows to help organize your notes and study procedure. It includes the basic formats for three main subject areas.

In order to take notes well, you must be proficient at sorting information. To understand an idea, you need to see its parts as well as its whole. Depending on the subject, the parts are quite predictable. First, find the main idea; it is often in the first two sentences of each paragraph. To do that, look for phrases like "most importantly," "first of all," "it must be emphasized that . . ." Any similar phrase is the author's way of telling you that something important is being said.

Second, find supporting details and examples to explain the main ideas. These usually follow the

Basic Subject Formats for Use in Notetaking

SUBJECT AREA FORMAT AND STRUCTURE

Social Sciences	
Law	Issues and principles
Political Science	Background information
Sociology	Problems, conflicts
Psychology	Reasoning, procedure
History	Decisions, results Conclusions, alternatives
Exact Sciences	
Math	Background, idea description
Biology	Laws, theorems, axioms
Physics	Supportive examples, approach
Chemistry	New problems to solve Solutions, other applications
Literature	
Novels	Background on author, topic
Plays	Characters
Poetry	Problems, issues defined Events, complications Crises, problem solved

main idea and often include stories or data, such as names and dates.

Next, isolate the information you need by sorting actual facts from filler data, such as the author's personal experiences and opinions. This is easy because the facts are often proper names, places, or numbers. Once isolated from the facts, the remaining material can often be identified as filler.

Texts often follow a sequence. For example, math texts might follow this sequence: Background information, statement of laws, axioms, or theorems, examples, problems presented to be solved. When you take notes for a math class, don't simply copy an important theorem. Ensure comprehension by examining the other parts of the sequence of information.

Creative Approach

The more unusual and eye-catching your notes are, the more you will enjoy studying them and the easier it will be for you to recall the information contained in them. Don't use a standard outline form. Its two major drawbacks are inflexibility and difficulty in recalling. Use pictures, cartoons, arrows, different colored pens, and different size headings. Helpful, creative notes take very little practice, but if you need some ideas, refer to the samples that follow.

Sample Notes for Chemistry

These notes, based on the format for exact sciences, include subject description, laws, examples, problems to solve, and solutions.

Notes, p. 114

Activation Energy
amt. needed for change
from pot. to kin. energy
see →

Heat of Reaction
application to chem.
problems—only 2 of 3
sources needed →

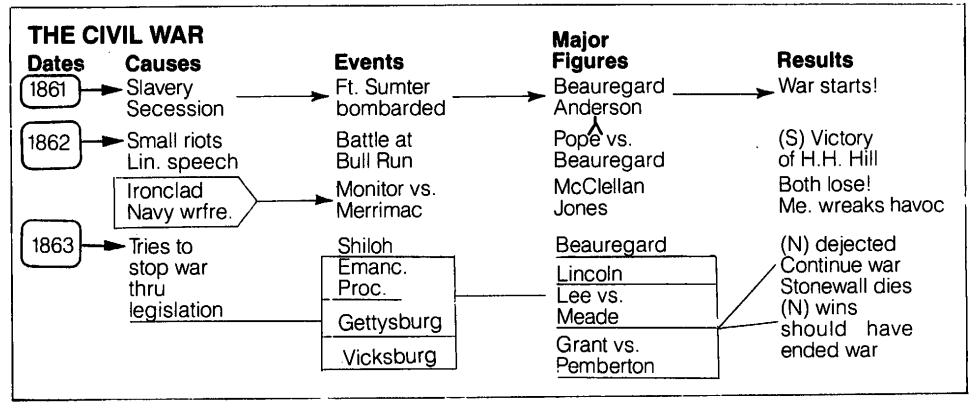
Catalysts
no chem. change. speeds
reac. + more E per reac.
as H + ions in →

$CO + NO_2 \longrightarrow CO_2 + NO$
 if $NO_2 = 32$
 $CO_2 = 86$
 then $32 = 86 + (-54)$
 $\therefore \Delta H = (-54)$

$HCOOH \longleftrightarrow HO_2 + CO$

Sample Notes for History

Categorize your information so that you will follow the flow of events better. This format allows a better understanding of details as well as major events.



Sample Notes for Novels

This format includes background on author, characters, settings, problems, events, crises, and solutions.

THE STRANGER, by Albert Camus
 AUTHOR 1913–60, Fr. exis., Nobel Prize '57.
 Works, inc., THE FALL, THE PLAGUE, THE REBEL.
 Believed in decisions, you are what you do, action, commitment, responsibility, true to self.

CHARACTERS	CONFLICTS
Major Meursault Marie Raymond	Man vs. man Concern & decision vs. apathy Meursault vs. normal world Arabs vs. Raymond Prosecutors vs. Meursault
Minor Old Perez Mother Celeste Salamano Masson Judge Prosecutor Chaplin Arabs	EVENTS Mer. Mom's death Meur. & Marie, Raymond Conflicts w/girlfriend & Arabs, beach scene
SETTINGS	CRISIS
General Algiers Early 1900s Very hot	Meursault kills Arab, imprisoned, trial is farce, Meursault adjusts to jail life, found guilty, Chaplin and God rejected, to be decapitated
Specific Beach Office Marengo Jail Courtroom	SOLUTION Meursault is reborn, good feelings at end, a spiritual rejuvenation
MOODS Methodical Tension Frustration	Unresponsive Lunacy Registration

Sample Notes for Philosophy

In these notes, the left-hand side was prepared in advance, from the texts. Then the page of notes is taken to the class lecture so that additional comments can be made on the right-hand side.

Aristotle's Critique of Spartan Constitution

<p>BACKGROUND ON ARTIST Current society is? Scien-philos-astron- "A is A," concretes, the realistic, specifics</p> <p>A's ANALYSIS OF S.C. (-) pop. mngmnt. (-) laws property laws bribe \$ no election of ovrsrs (-) treasury low on \$ (+) excess lifetime offcrs (+) must add soldiers</p> <p>(Q's FOR CLASS) implications of his crit. justified? Compr/contr w/US Constit. define: "polis" "Ephoralty"</p>	
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Keep Notes Together

An ingenious way to learn a subject quickly and with better understanding is to take notes in tandem. Take class lecture notes on a page opposite the notes you took while studying the text.

Ideally, you should read the text and take notes prior to the class lecture. Put your notes on the left-hand side of your paper, leaving the right half for class work. Then when the professor lectures, you will not only understand his or her comments better, but you won't have to write as much. If you keep class and study notes on the same topic together on a page, you will take fewer notes and understand more. Other students in class may be writing frantically while you relax and jot down only an occasional supporting detail. Even if you can't take text notes in advance, bring your lecture notes home and reverse the process.

STEPS TO BETTER RECALL

Pay Attention

Being aware is the first step to developing better recall. Begin to notice the part of the page on which information is located. Notice how it's presented, and take an extra look at visual aids. Surprisingly, many people do not even know what color their walls and curtains are, what their license plate number is, or even their Social Security

number. Knowing these things may not be very important, but learning to be more aware of your surroundings can be very helpful in developing memory skills.

Get Information Right

Make sure that you correctly understand the data. This sounds like a simple rule, but particularly in the case of remembering statistics, people rarely focus on the numbers themselves. They pay attention to the significance of the numbers. At gatherings where new people are introduced, make sure you understand a person's name and its spelling. Then repeat it for clarification and reinforcement.

Develop a Positive Attitude

Telling yourself you can remember is part of developing a healthy self-image. Faith in yourself relaxes and encourages stronger mental processes through opening previously closed thought channels. We can only do what we believe we can.

The Need to Remember

Most of the time, the incentive to remember information is already there. But every object of memory is made much stronger when you intensify your desire to recall. If you met someone at a party who interested you, your desire to remember

Lecture Note-taking Responsibilities

Responsibility	Objective	Procedure
Listen	Anticipate your purpose	Decide if you need to remember everything in the lecture or only main ideas
		Determine what material you will be responsible for on a test
		Determine if the lecture is a compliment to your reading assignment or new material
Take Notes	Spend most of your time listening not taking notes	Listen to understand
		Listen for entire ideas
		Summarize ideas
Take Notes	Think and concentrate as you listen	Determine the main points
		Decide how the main points are being made
		Note examples given
Take Notes	Be brief	Decide if you agree with the main points
		Determine if your previous knowledge allows you to interpret the information differently from presentation
		Try to recall the lecture so that you could present the information covered to someone else
Take Notes	Use key words	Write main ideas first Write details if time allows
		Write down key words that allow recall of additional information presented
		Take notes using symbols, underlining pictures, cartoons and arrows
Take Notes	Use symbols	Carry spare pens, pencils, and paper
		Go over notes; rewrite or add extra information while the material is fresh in your mind

the right name and phone number would be strong. Similarly, when you know you'll be tested on a book, your efforts increase appreciably.

Understand

Although it may sound obvious, make sure you thoroughly understand what you want to remember. This rule applies equally to poetry, mathematics, history, sciences, and related fields. If something makes sense, it's much easier to recall.

Be Creative

One of the most powerful ways to recall is to unleash your imagination. Turn your text material into pictures, change names into pictures, exaggerate, and be artistic. Try to put some color into the data; associate the information with sight, sound, taste, and smell.

Use Repetition

Immediately after a learning activity, preferably within an hour, refresh your memory through a review. We use both long-term and short-term memory, and most of what we take in goes into our short-term memory. For example, when you look up a number in the phone book, you remember it just long enough to dial it. Then you promptly forget it. This is, of course, short-term memory. To transfer memory data to long-term recall, we need to repeat it and use it for reinforcement. The ideal way to study and memorize is to spend six sessions, each lasting one hour, on a subject, rather than six hours straight. In this way data are reinforced sufficiently to be filed in long-term memory.

Create Mental Pictures

Often called the key to memorizing, mental pictures enable your mind to work in its more natural

state. Usually, your mind stores images and pictures, not words. When you think of milk, do you picture the four letters *m-i-l-k*? Most people picture a glass or carton of milk. By the normal storage system, by creating mental pictures, you can remember data much more easily. Change words and ideas into pictures and simply study the pictures, not the words.

Your memory skills will improve if you practice creating mental pictures about what you want to recall. The more unusual and absurd the mental picture you create, the more likely you will be to recall the word or information associated with it.

Use the following ideas to create vivid mental pictures:

1. Imagine some kind of *action* taking place.
2. Form an image that is *out of proportion*.
3. Create in your mind an *exaggerated version* of the subject.
4. Substitute and *reverse* a normal role. For example, in order to remember to mail a letter, imagine the letter carrying *you* out to the mailbox and stuffing *you* inside.

Memory Skills by Association

Probably the simplest method of remembering is by association, the process of recalling one item because another reminded you of it. This system requires no more than some awareness and a quick mental picture. For example, if you wanted to remember to bring a pen to class, simply imagine black, gooey ink all over the door knob where you live. Make a quick but strong mental picture of it. Then when you leave for class, reaching for the door knob will trigger the mental picture of ink, and you'll remember your pen.

Improve your memory skills by practicing word associations using mental pictures. For example, in associating the words *table* and *dance*, first form a clear picture of a table in your mind. Visualize a table that you use frequently, one familiar to you. In order to associate *table* with *dance*, imagine the table, standing up on two legs, dancing wildly, with the other two legs spinning in the air. Because it is such an absurd picture, it will stick in your mind. Each time you think *table*, you will also think *dance*.

Linking words can continue in a similar manner. If you wished to next link the word *dance* to *duck*, for example, you might create a mental picture of a huge, six-foot-tall, all white, overfed, pot-bellied duck dancing and whirling, with feathers flying.

Using the method of linking through mental pictures, you have created a chain of associations: *table* to *dance*, *dance* to *duck*. In this way, you never try to memorize more than one word at a time. The process is all done with mental pictures. The system of forming associations by using the link method will help you to memorize lists of names, places, events, items, or almost anything.

Contrasting Subjects

Apparently our subconscious needs time to sort and categorize information for long-term storage

and retrieval. To facilitate this process, do not study two similar subjects back to back. Instead, work on a dissimilar subject in the interval. For example, do not follow the study of algebra with calculus, or Spanish with Italian.

Interference

Cut down on distractions that might ordinarily follow a study session. It is best to study before a restful, quiet time or even before bed. Then your mind will have time to relax, sort, and store the necessary information.

Study Wholes

Whether the subject is a Shakespearean play or an assignment in anatomy, your mind functions best with complete pictures to remember. Even if you have to memorize only one part of a chapter, become familiar with all of it. For example, if you had to explain to someone why a local beach has low and high tides, it would be much easier if you also discussed how our tides are simply opposite from those on the other side of the world. For some reason our recall varies even within the whole picture we are learning. Use the BEM concept for better recall: We remember material best from the beginning, second best from the end, and our recall is weakest on the middle. Therefore, spend more time on the middle to allow for that tendency.

Practice Material

Frequently review, repeat, recite, and use the material you wish to remember. Almost any information learned becomes familiar, and even second nature, through usage. Try to integrate the data into daily usage. There is no substitute for practice.

Practice Under All Conditions

If you practice recalling only under "prime" conditions, information may elude you during test time. When you have critical information to remember, create flash cards on 3 x 5 inch index cards to take with you. Then whenever you have a break, at mealtime, while relaxing, or in the library, study the cards and practice recalling.

PREPARING FOR TESTS

The first and most obvious preparation for taking tests is to study beforehand. But an effective study procedure that will help ensure success is one that is planned from the beginning of the course and carried on, step by step, throughout the school term.

First Few Weeks

To ace your tests, start the first week of school. Find out about your instructor. What is his or her favorite topic or author? Is student creativity en-

couraged, or is the class run by the rules? What kind of classwork is expected? Exactly what will your studying entail? Try to read ahead in your texts. Take notes before you go to class; it saves time and increases your understanding. As you read, ask questions of yourself or bring them to class. Add class lecture notes to your home text notes, always trying to consolidate and unify them.

Middle of Course

Try to study a little every day. This is a lot more effective and less stressful than cramming. Ask questions when you don't understand course material. Don't put them off, or you will forget about them. See your professor for extra help early in the term, not the day before a test. This shows a genuine interest on your part, and the extra contact will pay off at test time. Most important, be sure to introduce yourself and make the most favorable impression you can. In your particular fields of interest, it's also helpful to ask your professor if he or she has any suggested reading material outside of assigned class texts. The secret is to show some genuine interest in your class subject. You'll find that if you approach most subjects with an open mind and a positive attitude, there will be a wealth of material to stimulate and interest you. Allow your interest to extend to your professor. He or she is like anyone else and appreciates the personal touch.

Read as much background material as possible. The more you read about a topic, the greater your understanding of it, and the faster you will be able to read it. Gaining a wide background in a subject area will give you a big edge at test time. Another student may read the text and be able to recall most of it, but you will have the advantage even if you can recall only part of the additional reading you have done. You should also check your notes occasionally to make sure they are familiar and understandable.

Last Week Before Exam

Find out what kind of exam will be given, and alter your studying accordingly. If an objective test is scheduled, use memory techniques and concentrate on details. For a subjective or essay exam, the best approach is to get a wide background in that subject, stressing ideas rather than details. Concentrate on knowing something about almost everything. Rework your notes into a new format, trying to see the material from new angles. Review sessions are helpful, but only get together with others if they are good students. Otherwise, you will be really "soaked" for information, and learn nothing yourself. A C student usually doesn't enlighten an honor student.

Last Few Days

At this point, start identifying what you don't know. Many students review by going over material they already know well. Often, parts they

don't know are ignored, making their study process ineffective. Don't pat yourself on the back for what you do know: Find out what you don't know. Remember this secret about how to study for tests: If your test is a final, turn to the index of your textbook and start with the first entry. Ask yourself if you understand that term, and continue until you come across an unfamiliar term. Look it up in the text, read about it, then take notes on it so you won't forget again. This system allows you to check yourself on every term, idea, person, and detail in the entire textbook. If your test is only on chapters seven and eight, turn to the table of contents and find out which pages those chapters cover. Suppose those chapters include pages 77-102. Turn to the index again, and start at the beginning again. But this time look down the right side, noting only the terms on pages 77-102. That way you will only study the chapters you will be tested on.

Turn to the end of your text chapters and review the summary or listing of the author's questions.

This can be helpful in directing your study efforts. At many colleges and universities, tests used during previous terms are kept on file in the library. These can be a gold mine because many professors don't rewrite a test each term. Often the tests used may just be scrambled questions from old tests. The prepared student has an easy A.

Many students find the use of homemade flash cards ideal, because they are portable and often fun to use. You might put a possible test question on one side and the answer on the other. Make notes on any data you seem to forget easily. Certain things appear very easy to remember, and others seem easy to forget. But remember, if you forget it once, you will forget it again unless you write it down.

A positive attitude is crucial the few days prior to an exam. The upcoming test is not an execution: It is a chance to show what you have learned. Your instructors want you to get good grades because it reflects on their teaching success. Most instructors feel badly when students do poorly because that mirrors their failure to communicate important concepts. Look at the exam as a challenge and an opportunity to show what you have learned. If you admit to yourself that you probably won't know the answer to every question you won't get discouraged when you can't find the correct response.

Last Hours

You have already run the hardest part of the race. If you have kept up during the term, you have already passed the exam; now it is the difference between an A and a B. Others may have exam fever, but you can relax a bit. Get a full night's sleep and be sure to eat and get some exercise the day of the exam. That encourages better blood circulation and hence a better supply of oxygen to your brain during exam time. You will be able to think more clearly. It is best to exercise in moderation so that you are invigorated rather than exhausted. A brisk walk before the test is a good way

to get exercise. Eat good foods, but eat lightly or not at all within an hour of your test. If you do eat, your body's energy and blood supply will be drawn toward your stomach for digestion instead of toward your brain, where it is needed during test time.

Be sure to review all notes and texts. Browse through each chapter, making certain to expose your mind to as much information as possible. If you have kept up, this will be a review and cramming won't be necessary. Your confidence and calm mental attitude will encourage recall at test time. A review on the night before the test should only take two to three hours. On the day of the exam, arrive five to ten minutes early at your class. The best way to relax is to prepare mentally. Get the seat you want in class and practice recalling.

Exam

Now you can cash in your efforts. First, look over the entire exam. This will help you allot your time wisely. Note the types of questions, which are given the most point value, and which are most difficult. Do not pick up your pen for a few minutes. Stop to think about your attack plan. Be relaxed and calm while you plan your approach. A good test taker doesn't fight tests; the secret is to relax.

Interpret and rephrase questions several ways to be sure you understand them. Then, start with the easiest problems first, and work quickly and neatly. Be sure to keep in mind the test directions as you answer. Don't overread questions by assuming they are more complex than they appear at first. Read them for what you believe is the intent of the question. Notice critical or key words in each question, such as "show," "contrast," "define," and other similar directions. Try to answer every question unless you have absolutely no idea of the answer; points are often subtracted from your grade for wrong answers.

TAKING OBJECTIVE TESTS

Objective tests are those that include questions in a true-false, multiple-choice, matching, or fill-in format. The answer is usually provided, but the student must decide among several possibilities.

True-False

True-false questions are the easiest test questions for the obvious reason that you have at least a fifty-fifty chance of getting the right answer. First, be sure you have read the question correctly. Look for such words as *always* or *never*: These words often indicate a false answer. Such words as *often*, *usually*, *rarely* and *sometimes* can indicate a true answer. Decide if the statement is totally true before you mark it true. Answer what the tester intended, not what you read into the question. For example, the statement, "General Motors produces compact cars," is true. If the question had read, "General Motors *alone* produces compact

cars," then it would have been false. On true-false questions, stick with your first impression. Studies have shown over and over that your first impression is usually right, so be slow to change your answer, if at all. Remember, a statement is more likely to be true if it is a fairly long statement; it takes more qualifiers to make a true statement than a false one.

Multiple-Choice

An important rule to remember when answering multiple-choice questions: Read the answers first. This way, you'll view each answer separately and equally, without "jumping" on the first and easiest one. Look for an answer that not only seems right on its own, but completes the question smoothly. If the question asks why something occurs, then your answer must be a cause. Try to eliminate any obviously poor answers. Suspect as a possible right answer such phrases as "all of the above," "none of the above," or "two of the above." Check the wording of questions to notice qualifying phrases, such as "all of the following are true *except*" or "which two of the below are *not*." Statistically, the least likely correct answer on a multiple-choice question is the first choice. When in doubt, pick the longer of two answers. But, just as in true-false sections, always put something down. Even an educated guess is better than leaving the question blank and getting it wrong for sure.

Sentence Completion

These generally ask for an exact word from memory. They don't allow for much error, so make sure your answer is a logical part of the sentence as a whole. Use the length and number of blanks given as a hint. Make sure the grammar is consistent. When in doubt, guess. Even if it's a generalized guess, you may get partial credit. If you are unsure of two possibilities, include both and hope for half-credit.

Essay Tests

When answering questions on an essay test, begin by making an outline. Assemble and organize the main points. Check the wording of the question to make sure you are interpreting the question correctly. For example, if the question asks you to compare and contrast, do not give a description or a discussion. Begin your essay by using the same words in your answer that are in the question. Keep your answer to the point. Always write something in answer to a question, even if you don't have much to say.

Think and write by using this format:

1. Introduction—Introduce your topic.
2. Background—Give historical or philosophical background data to orient the reader to the topic.
3. Thesis and Arguments—State the main points, including causes, effects, methods used, dates, places and results.

4. Conclusion—Include the significance of each event, and finish up with a summary.

When totally stumped for an answer on an essay, think about book titles, famous names, places, dates, wars, economics, and politics. Usually something will trigger ideas. If you know nothing about the essay question, invent your own question on the subject and answer it. You'll usually get at least partial credit. That's better than nothing.

Aftermath

When you complete a test, be sure to reread all your answers. Check the wording of the questions again. Eliminate careless errors, and you can save a lot of disappointment later. Take as much time as you need. When you think you have finished the test, turn it upside down on your desk. Think about it for a few minutes, giving your mind some time to relax and come up with some answers. If you still agree with what you have written, then turn it in. But sometimes those few moments spent just thinking about the questions will help you recall the answer that gets an *A*.

Once your corrected test is returned, look it over. Check your errors, and find out not what they were, but what *kinds* of errors they were. Were they from answering questions too quickly, poor organization, a missed assignment, or incorrect notes? Understand why you made errors, and avoid the problem on the next test.

Review These Points

Taking Objective Tests

1. True-false:
 - Look for key words.
 - Trust your first impression.
2. Multiple choice:
 - Read answers first.
 - Eliminate poor choices.
 - Check wording of question.
3. Sentence completion or fill-in:
 - Make sure answer is logical.
 - Make sure grammar is consistent.
 - When in doubt, guess.

Taking Essay Tests

1. Outline.
2. Assemble and organize.
3. Write your introduction, background, thesis and conclusion.
4. Reread.

Review These Points

Preparing for Tests

1. First few weeks of classes:
 - Find out about your instructor.
 - Read ahead.
 - Take notes before class.
2. Midcourse:
 - Study every day.
 - Ask questions.
 - See your teacher.
 - Read background material.
3. The last week before the test:
 - Find out about exam format.
 - Rework notes.
4. Last few days before test:
 - Brush up on your weak areas.
 - Think positively.
5. Hours before the exam:
 - Sleep well.
 - Exercise.
 - Eat lightly.
 - Review your notes.
6. Exam time:
 - Read thoroughly.
 - Budget your time.
 - Interpret questions.

TERM PAPERS: STEPS TO SUCCESS

What Is a Term Paper?

A term paper or research paper is an opportunity for you to show several things: (1) that you can examine a topic in detail, (2) that you know research methods, (3) that you know your way around a library, (4) that you can organize a bulk of information in a proper way, and (5) that you can write clearly. So remember that a research paper is an opportunity to show how good a student you are. Do not approach the task of writing one as a terrible burden, a task to be avoided as long as possible.

When you are preparing a research paper, you will be reading books and articles written by others about your topic. You will be tempted to use their knowledge as if it were your own. If you do, you may be guilty of plagiarism.

It is inevitable, however, that you use the ideas that others have thought about your topic. The way to do so honestly, avoiding plagiarism, is to tell your readers who created the ideas you are using. The way to tell your readers is to write footnotes or end notes, giving the name of the work and the author whose ideas you have used. Later in this chapter you will find information about the form such notes should take.