

# LEARNING

*! Welcome and Congratulations !*

In just holding this guide you have made the first step to finding a way to learn better. It is never easy to start something or learn new skills. You will be successful and you will be able to do it.

If you have questions along the way just ask for some help—

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# STRATEGIES

# *Acknowledgements*

*In developing this I used many of the websites available to collect and copy different strategies in addition to ones I have used for years. When ever possible I have added or listed the website and encourage you to go and further review what they have.*

*Study skills are just that—SKILLS- and with any skill there are stages to developing it. You initially may find it difficult to work through steps listed, but with practice you will find that they can become second nature.*

*The best skill you can learn is Self-Advocacy. This is the ability to know yourself~ your strengths, weaknesses, needs, and gifts, and learn where and who to go to when you need assistance. This can be a teacher, counselor, tutor, professor, parent, sibling, or friend.*

*You can do this, but you do not have to do it alone.*

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# NOTE TAKING

## **Text Note taking**

Taking notes on assigned readings is not as common a practice as it should be among students. There are several advantages of text note taking. It improves attention and concentration, which in turn positively impacts registration of information in memory. Text note taking encourages students to identify the main ideas and supporting details of the reading in order to better understand relationships among ideas and the overall organization of the text. It results in a shortened version of the assignment with all the essential information needed for future exam review. Finally, text note taking reinforces learning of the material being read, and it makes reading a more active process.

The following paragraphs outline suggestions and strategies for text note taking from course books as well as research or reference sources. **Gleaning**, described elsewhere in this page, is another strategy for recording notes from written material.

- Finish reading before taking notes.
  - While it is not necessary for students to read the entire chapter before taking notes, you must finish titled sections or long paragraphs before selecting main ideas and paraphrasing. It is difficult to know what to record unless you have enough information from which to choose.
- Know what to record.
  - Identify major topics based on section headings. Try to pick out one major idea per paragraph along with a few supporting details. Look for words in bold print or italics. The instructor's lecture should provide additional clues as to what should be emphasized in the reading.
- Be selective in what you record.
  - Remember that the goal of note taking is to produce a shortened version of the reading. This means that you must be selective in what is recorded in the notes. This is a skill that improves with practice.
- Use your own words.
  - Information should be paraphrased before it is recorded in the notes. The time spent trying to understand a passage and recording the main ideas in your own words is the single most important investment of time you can make. The chances of remembering are greater if the work is in your own words. **Paraphrasing** is covered in more detail in the Citing, Quoting, Paraphrasing, and Summarizing section of the Writing and Proofreading page.
- Work quickly and efficiently.
  - Note taking need not be, and should not be, painful and time consuming. Read, think, write, and move on. The rewards will come at test time.
- Use an appropriate form of organization.
  - Select a form of organization that will permit quick and active recall of the main points of the assignment. The form of organization should also allow one to see associations among ideas. The method chosen will depend on the nature of the material as well as personal preferences.
  - The **Cornell method** of organization is strongly recommended. Refer to the **Forms of Organization** section of this page for details on Cornell and other formats.

## Cornell Method

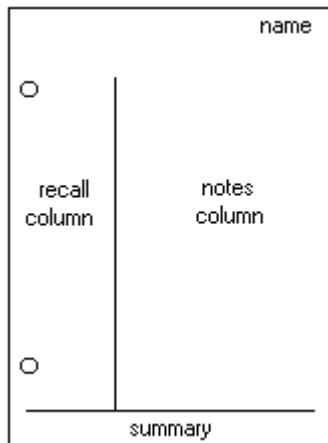
With the Cornell method, different parts of the notebook paper have different functions. Notes are recorded on one half, key words and concepts are recorded in another area called the recall column, and a summary is recorded at the bottom of the paper.

The Cornell method is similar to the [two-column method](#) and the [REAP strategy](#). More information related to the Cornell method is included in the [Reviewing Notes](#) section of this page.

The Cornell method of note taking offers several advantages. It results in more organized notes. It allows students to quickly and identify key words and key concepts from a lecture. The notes can easily be used as a [study guide](#) for exam preparation. The arrangement of information is aesthetically pleasing and easy to scan, making it easy to locate particular pieces of information. The strategy may be adapted to a number of presentation formats.

Directions for using the Cornell method are as follows.

- Divide the paper
- Use loose leaf notebook paper and write on one side of the page only.
- Divide the paper vertically by drawing a line from top to bottom about 2" from the left side of the page.



- Documentation
  - Write the following information at the top of each page: student name, course, date, and page number.
- Record Notes
  - During lecture, record the main ideas and concepts on the right side of the page. This is the notes column.
  - Rephrase the information in your own words before writing it down.
  - Skip one line between ideas and several lines between topics.
  - Avoid writing in complete sentences; use [symbols and abbreviations](#) instead.
  - The format or style of the notes can vary, but avoid using a formal [outline](#).  
Suggestions for organizing the notes are:
    - Paragraph Style: For unstructured information, record notes in paragraph style with short, telegraphic sentences and phrases.
    - Topic and Ideas Style: For expanded topic information, record topics and ideas.

- Sentence Style: For ideas and concepts, record notes in short sentences.
- Definition Style: For main topics and features, record definitions and explanations of words in short phrases.
- Review and Clarify
  - As soon after class as possible, review the notes in the right column and clarify any ambiguous information.
  - Compare the information with the book and/or other students' notes.
  - Then pull the main ideas, concepts, terms, places, dates, and people from the right column and record them in the left-hand recall column.
  - Summarize
- Prepare a summary of the lecture material and record it at the end of the notes.
  - The summary may be in sentences or short phrases. It should include only the main ideas from the lecture.
- Study
  - Use both sections of the notes to prepare for quizzes and exams.
  - Some reviewing strategies that are suited to the Cornell format are [NoteSHRINK](#), [NoteTALK](#), and [NoteTHINK](#).

An example of the Cornell method of note taking is provided below.

Amy Cohen The Near East	9/10/94 p. 4
<ul style="list-style-type: none"> <li>○ Jericho</li> <li>○ 3 req'ments for dev'ment of cities           <ul style="list-style-type: none"> <li>○ water</li> <li>○ agriculture</li> <li>○ protection</li> </ul> </li> <li>○</li> <li>○</li> </ul>	<p style="text-align: center;"><b>JERICHO</b></p> <ul style="list-style-type: none"> <li>- 1st city developed</li> <li>- before Jericho people were mobile</li> </ul> <p style="text-align: center;">Three req'ments for dev'ment of cities</p> <ol style="list-style-type: none"> <li>1. Water = 1st req'ment           <ul style="list-style-type: none"> <li>- cities built by lakes, rivers</li> </ul> </li> <li>2. Agriculture = 2nd req'ment           <ul style="list-style-type: none"> <li>- division of labor: women planted, men hunted</li> </ul> </li> <li>3. Protection = 3rd req'ment           <ul style="list-style-type: none"> <li>- walls of Jericho built to protect farms and water from invaders</li> <li>- walls built 7800 BC</li> <li>- city survived 800 yrs</li> </ul> </li> </ol>
<p><b>SUMMARY:</b> Jericho is significant as first city. Requirements for dev'ment of cities are water, agriculture, protection.</p>	

### NoteSHRINK Strategy

The NoteSHRINK strategy (Bragstad and Mueller Stumpf, 1987) is used to shrink presentation notes down to their essence. It assumes that notes are recorded in the [Cornell style](#), with a note column on the right and a recall or quiz column on the left.

- Survey the notes by reading the first sentence of every paragraph or block.
- For each paragraph, summarize in one or two words what the entire paragraph is about. Underline or highlight these topics.

- Examine all of the topics and determine what are the biggest "thought chunks" possible? Record those major concepts in the quiz column.
- 

### **NoteTALK Strategy**

The NoteTALK strategy (Bragstad and Mueller Stumpf, 1987) involves self-recitation in order to increase understanding of information and to commit information to memory. It is an extremely effective strategy for learning and remembering information. The strategy is used with the **Cornell** format of note taking.

- Cover the main column of notes.
- Look at each key word or phrase in the quiz (recall) column and recall all the relevant information from the notes related to that topic.
- Put the information in your own words, and recite the information aloud.
- Uncover the notes to check for accuracy.

## Two-Column Method

The two-column method of note taking involves dividing the paper into two columns and recording different types of information in each column. It is similar to the **Cornell method**. The main differences between the two methods are that, with the two-column method, key words and ideas are recorded while taking notes and are not repeated in both columns.

		Name
		Date
Key Words	Descriptions	

Like the Cornell method, the two-column method allows for easy scanning of notes to locate certain pieces of information. Notes taken using the two-column method may be used as **study guides** for exam or quiz preparation.

Directions for using the two-column format are as follows:

- Divide Paper
  - Use loose leaf notebook paper and write on one side of the page only.
  - Divide the paper vertically into two columns by drawing lines from top to bottom.
- Documentation
  - Write the following information at the top of each page: student name, course, date, and page number.
- Record Key Words or Ideas
  - Record all key words, ideas, people, or events in the left-hand column.
  - Information in this column must be very brief.
- Record Descriptions or Discussions
  - For each key word or idea, record the corresponding description or explanation next to it in the right-hand column.
- Review and Clarify
  - As soon after class as possible, review the notes in the right column and clarify any ambiguous information.
  - Compare the information with the book and/or other students' notes.
- Study
  - Use both columns of the notes to prepare for quizzes and exams.
- Modify
  - Add extra columns if necessary, depending on the material.
  - For example, you may want to add an extra column for recording relevant information from the textbook at a later date.

Two examples of the two-column method of note taking are provided below.



Shi Zhao Chem 111	3/18/94 page 3
ion	charged atom
cation	positively charged atom; gains proton or loses electron
anion	negatively charged atom; loses proton or gains electron

JR Miller Math 110	4/5/95 page 2
ADD FRACTIONS	
	$\frac{1}{3} + \frac{2}{5}$
find least common denominator	<b>15</b>
multiply fractions by one	$\frac{1}{3} \cdot \frac{5}{5} + \frac{2}{5} \cdot \frac{3}{3}$
simplify fractions	$\frac{5}{15} + \frac{6}{15}$
add numerators	$\frac{11}{15}$

<http://www.muskingum.edu/~cal/database/general/notetaking.html>

# WRITING AND BRAINSTORMING

## ORGANIZING IDEAS THROUGH MAPPING

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After locating, reading, and taking notes from references, the information must be arranged into a logical format. Mapping involves making a visual record of information by using key words and phrases, ideas, details, and facts. Maps show how ideas are connected or related. Three mapping strategies for organizing ideas are clustering, hierarchies, and listing. A fourth approach, [outlining](#), is covered separately in this page. Other mapping strategies are described in the [organization](#) page. The information in this section was compiled by K. Buchanan (CAL).

### *Clustering*

Clustering reveals relationships among ideas by dividing the topic into subparts. Write the topic (reduced to one word or a short phrase) in the center of the page and draw a circle around it. Write the main ideas or sub points (again in a word or short phrase) around the topic; circle each main idea and connect it to the center topic word. Around each main idea or sub point, cluster the specific details, facts, and examples related to them. An example of clustered information will be scanned in the near future.

When it is time to write the first draft of the paper, each of the main ideas or sub points will make up one section or one paragraph of the body of the paper. Each section or paragraph will contain the specific details related to each main idea or sub point in the cluster map.

### *Hierarchies*

Hierarchies allow the writer to arrange information from general (inclusive) to specific (exclusive). Write the topic at the top of the page. The main ideas or sub points of the topic are listed below the topic, with lines connecting each sub point to the topic. Specific details, examples, statistics, and facts related to each subtopic are written below and connected to the subtopic. An example of a completed hierarchy will be scanned in the near future.

When it is time to write the first draft, each subtopic and its supporting details will be arranged into a paragraph or a section of the paper.

### *Listing*

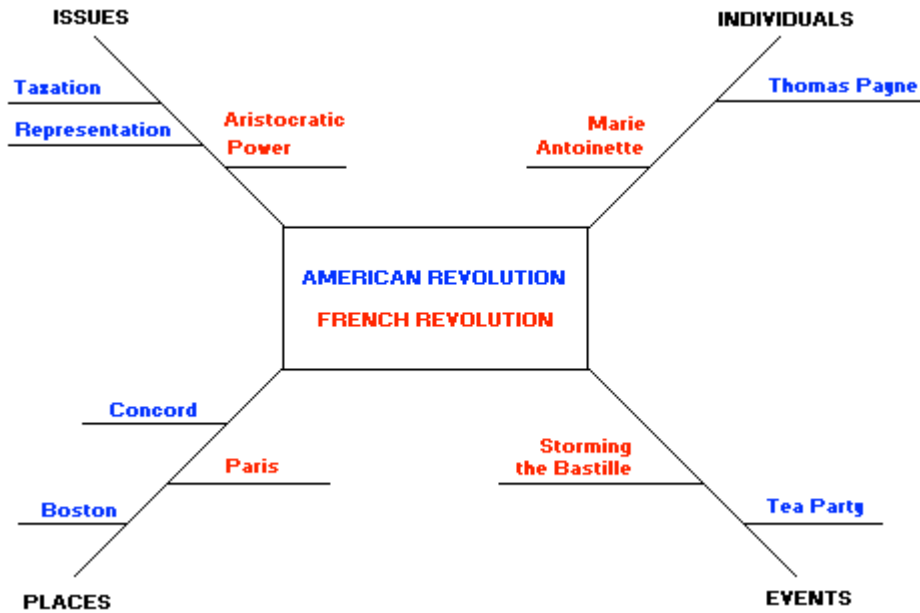
Listing allows one to quickly order ideas for a paper. Recall and list the information already known about the topic. Then consider gaps in the information; what additional information is needed to examine the topic completely? List these areas of needed research.

Using this list, place an asterik (\*) next to the most promising or most important items on the list. Rank and number the main items in order of importance. Using a different color for each main idea, highlight all items on the list that are related to main ideas. Cross-out items that are not promising or do not relate to the main ideas. As needed, add new items to the list and group them with the appropriate main ideas.

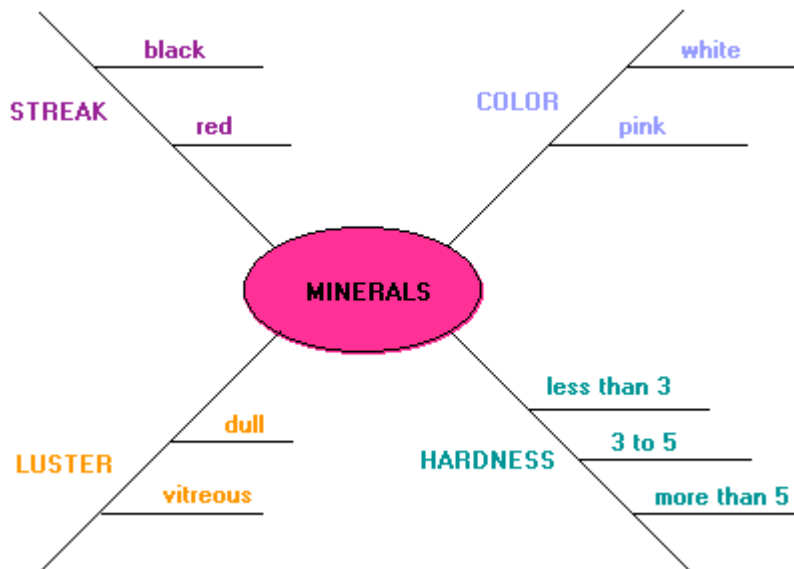
When it is time to write the first draft, each set of color-coded information will be arranged into a paragraph or a section of the paper.

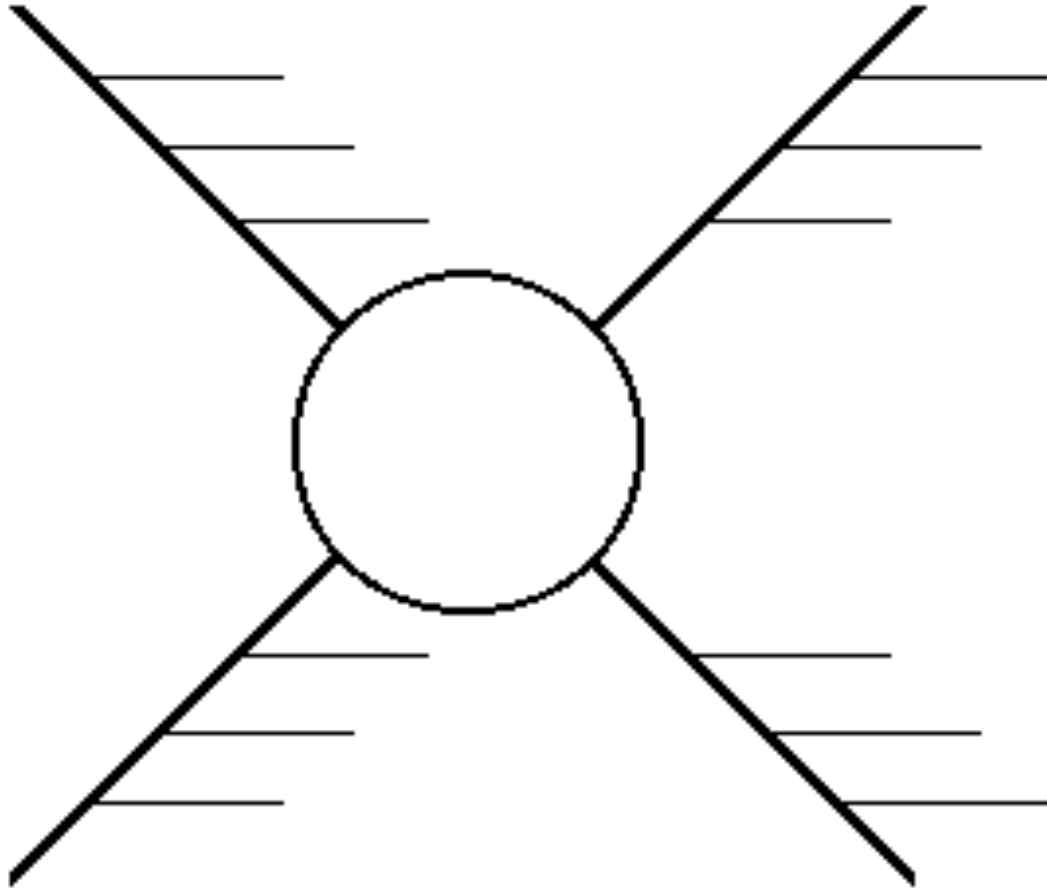
Examples of spider maps are given below. For complete descriptions and illustrations of these formats, refer to the [Information Organization](#) section of the Organization page.

### Example 1



### Example 2





<http://www.muskingum.edu/~cal/database/general/organization.html#Strategies>

<http://www.studygs.net/mapping/index.htm>

<http://www.studygs.net/writing/prewriting.htm>

[http://www.studygs.net/5paragraph\\_edit.htm](http://www.studygs.net/5paragraph_edit.htm)

## WRITING DRAFTS

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Once the writing assignment has been [mapped](#) or [outlined](#), you are ready to write the first draft of the paper or essay. When writing the first draft, focus on getting the ideas down quickly. Don't agonize over grammar or detailed references at this stage. You will be concerned with grammar, complete references, and style when writing the second or final drafts.

For longer papers, each main topic in the outline or map will be one section of the paper. Subtopics under the main topic will be the subjects of individual paragraphs in that section. Supporting details for each subtopic are used to write the paragraphs. For shorter papers, each main topic in the outline or map will be one (or more) paragraph of the paper's body. Subtopics and supporting details for that topic are included in that paragraph.

### *Guidelines for Writing Drafts*

- Make a time table
  - Develop a schedule for completing, proofing, and correcting the drafts of the paper.
  - Leave plenty of time to write several drafts and to have them proofed.
- Work in parts
  - It helps to maintain motivation and clarity of purpose if different parts of the paper are written one at a time.
  - Put all the notes related to one main topic in a folder, and use the notes and outline or map to transpose the information into written paragraphs.
  - Keep a separate folder for each section of the paper.
  - Reward yourself for completing each section.
  - When all the sections have been written, add transitions to tie them together.
- Start with the body
  - Write the body of the paper first, working in parts as indicated above.
  - Write the introduction and conclusion last.
  - Then compile the bibliography and compose a title page.
- Proofread each draft
  - Each draft of the paper should be proofed for grammatical errors, spelling mistakes, logical errors, organizational problems, and stylistic elements.
  - Seek professional help from the instructor, a tutor, or another person in that field. Or ask friends majoring in English.
  - More information on [Proofing strategies](#) is given elsewhere in this page.

## **The Five Paragraph Essay**

**Getting started means getting organized:**

**Analyze the assignment; determine what is required.**

With a highlighter, note important words that define the topic.

Then organize your plan

**For example, you have been given this writing prompt:**

You have a present that was really memorable. It could have been given for an important occasion or just for no reason at all. Tell us about the present and why it was memorable. Include the reason it was given, a description of it, and how you felt when you got it.

**The objective is to write a narrative essay about a present you were given**

The subject is a **memorable present**

The three main subtopics are:

- **the reason it was given**
- **a description of it**
- **and how you felt when you got it**

**Outline your five paragraph essay; include these elements:**

<p><b>Introductory Paragraph</b></p> <p>General Topic Sentence: <b>memorable present</b></p> <ol style="list-style-type: none"> <li>1. Subtopic One: <b>the reason it was given</b></li> <li>2. Subtopic Two: <b>a description of it</b></li> <li>3. Subtopic Three: <b>how you felt when you got it</b></li> </ol> <p>(Transition)</p>		
<p><b>First Supporting Paragraph</b></p> <p>Restate Subtopic One</p> <p>Supporting Details or Examples</p> <p>Transition</p>	<p><b>Second Supporting Paragraph</b></p> <p>Restate Subtopic Two</p> <p>Supporting Details or Examples</p> <p>Transition</p>	<p><b>Third Supporting Paragraph</b></p> <p>Restate Subtopic Three</p> <p>Supporting Details or Examples</p> <p>Transition</p>
<p><b>Closing or Summary Paragraph</b></p> <p>Synthesis and conclusion of the thesis rephrasing main topic and subtopics.</p>		

*Write the essay!*

Think small; build the full essay gradually.  
Divide your essay into sections and develop each piece separately and incrementally.

### **The Introductory Paragraph**

- **The opening paragraph sets the tone**  
It not only introduces the topic, but where you are going with it (the thesis). If you do a good job in the opening, you will draw your reader into your "experience." Put effort up front, and you will reap rewards.
- **Write in the active voice**  
It is much more powerful. Do that for each sentence in the introductory essay. Unless you are writing a personal narrative, do not use the pronoun "I."
- **Varying sentence structure**  
Review to avoid the same dull pattern of always starting with the subject of the sentence.
- **Brainstorm to find the best supporting ideas**  
The best supporting ideas are the ones about which you have some knowledge. If you do not know about them, you cannot do a good job writing about them. Don't weaken the essay with ineffective argument.
- **Practice writing introductory paragraphs on various topics**  
Even if you do not use them, they can be compared with the type of writing you are doing now. It is rewarding to see a pattern of progress.

### **Supporting Paragraphs**

- **Write a transition to establish the sub-topic**  
Each paragraph has to flow, one to the next.
- **Write the topic sentence**  
The transition can be included in the topic sentence.
- **Supporting ideas, examples, details must be specific** to the sub-topic  
The tendency in supporting paragraphs is to put in just about anything.  
Avoid this: the work you have made above with details and examples will help you keep focused.
- **Vary sentence structure**  
Avoid repetitious pronouns and lists  
Avoid beginning sentences the same way (subject + verb + direct object).

### **The Ending or Summary Paragraph**

This is a difficult paragraph to write effectively.  
You cannot assume that the reader sees your point

- **Restate the introductory thesis/paragraph** with originality  
Do not simply copy the first paragraph
- **Summarize your argument** with some degree of authority  
this paragraph should leave your reader with no doubt as to your position or conclusion of logic
- **Be powerful** as this is the last thought that you are leaving with the reader.

# READING COMPREHENSION

1. Read and review summary 1<sup>st</sup> for textbooks—for novels review cliff/spark notes for overview
2. Scan text for key vocabulary, headings, tables, charts or graphs that may impact fluid reading of the written information
3. Read the assigned reading
4. Looked back through areas read and use heading as questions—  
Historical Impact of Chicago Black Sox (paragraph title)  
“How did the incident of the Black Sox impact baseball today?”

## SQ3R STRATEGY

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SQ3R stands for survey, question, read, recite, and review (REFERENCE). The strategy is an independent study method that aids in student understanding of the organization and meaning of written texts. It is a five-step procedure for making reading more active and improving student understanding of reading assignments. By providing structure and a concrete plan of action, SQ3R empowers students and provides a sense of control over reading tasks. And by requiring that students look at the reading several times and process the information in several ways, SQ3R enhances the registration and recalling of new information in/from memory.

One advantage of SQ3R is it may be used for reading assignments in most academic disciplines, including social sciences, physical sciences, and arts and humanities. The method, however, does not lend itself to numerically-oriented subjects like math and statistics. Additionally, SQ3R can be used for reading a variety of reading materials, including textbooks and journal articles, as long as the structure or organization of the material is not too complex. SQ3R has proven to be an effective strategy for most college-level reading tasks. Another advantage is that SQ3R is relatively simple and straightforward. As such, modeling and feedback by a facilitator usually is not necessary. SQ3R makes reading a more active process, helping to maintain attention and improve remembering.

Recently, limitations of the SQ3R strategy have been examined. According to Neal and Langer (1992), SQ3R is not as broad in scope as some other reading comprehension strategies, like their [mediated instruction of text](#) (MIT) strategy. SQ3R represents only one strategy while MIT is a suite of strategies that may be applied in various combinations for an effective approach to reading comprehension. McCormick and Cooper (1991) report that several studies of high school students indicate SQ3R, which was designed for average students, is not an effective strategy for



improving literal comprehension by learning disabled students. They also note that LD students understood and remembered more information when reading shorter (e.g. 300 words) passages. So for learning disabled students, interspersing short passages with review questions is more effective than putting questions at the end of the reading.

Despite these alleged limitations, SQ3R offers an efficient approach to reading for most students. Of course, individual results in reading comprehension with SQ3R will vary. But all students should be exposed to the strategy, and it should become part of their "strategies arsenal" for use in appropriate situations.

Other reading comprehension strategies (PQ4R, RAP, SNIPS, PARTS, etc.) are very similar to SQ3R. They are described elsewhere in this page; refer to the [reading strategies](#) menu for a complete list.

### *Survey*

The first step of the SQ3R strategy is to survey the reading assignment. Surveying involves creating a mental map of the text and selective reading.

To begin surveying, look quickly over the material for textual markers or clues about the [manner of organization](#) of the text. These include table of contents, chapter titles, headings and subheadings, and numbering systems. The organizational clues are used to create a "mental map" to help the student move through the material.

The mental map encompasses the general structure of the reading and is used to guide the student as he/she reads. By mentally linking the textual clues, the student is better able to follow the flow of ideas in the reading and to detect the relationships among pieces of information.

If the text lacks headings and other textual markers, the student should pay attention to paragraph breaks and clue phrases like "most important" and "in summary." Use that information to identify the author's main ideas and to create one's own headings in the margin. In fact, accurate mental maps made by the student can be more effective than those based on the author's headings.

Some students chose to record the organizational map on paper rather than to commit it to memory. There are a variety of recording methods; see the [Organization](#) page for ideas.

Developing a mental map is important because "detailed information can be remembered only if it is learned in relation to more important ideas" (Bragstad and Stumpf, 1987, p. 251). The map may also be used later when reviewing the text.

The second aspect of surveying is selective reading of portions of text (Bragstad and Stumpf, 1987). First, reread the title and think about it. What previous knowledge do you have about the topic? Can you recall any past experiences with the subject? What do you anticipate learning based on the title? Then read the first paragraph of the chapter or the abstract of the article. They should describe the main topics to be covered in the chapter or paper as well as the author's purposes or goals. Sometimes the results or conclusions will be given in the abstract. Reread the headings to refresh one's memory of the main topics of the text and to check the mental map for accuracy. Read the first sentence of each paragraph, and then read the last paragraph or the summary to get a review of the main concepts or conclusions. Quickly scan the visual aids like figures, photos, and tables.

### *Question*

The second step of SQ3R involves predicting questions that may be answered by the material. The questions are elaborations of the mental map developed in the survey phase, and they serve as an individualized knowledge framework or template to which details may be added later.

By actively engaging one's attention and curiosity, questioning provides the reader with a purpose and makes important ideas more obvious. The student creates meaning for him/ herself. Comprehension is aided by finding the answers to predicted questions when reading as well as by locating important information not covered by the questions. Predicted questions may be used later to study for quizzes and exams.

To develop questions, turn major headings and subheadings into questions. Draw upon previous knowledge and experiences to develop questions that may be answered while reading. Questions that arise while surveying the assignment should be recorded as well. The predicted questions can be compared to those at the end of the chapter. Numbering questions makes it easy to organize the answers later while reading.

With the mental map and predicted questions, one has prepared his/her own knowledge framework to guide reading of the assignment.

### *Read*

With the knowledge structure in mind, read the assignment one section at a time for content. Instead of focusing on isolated details, search for relationships among the main ideas and their supporting details. Look for information that answers the predicted questions, and take note of unexpected ideas.

The reader is advised to refrain from highlighting the text while reading because it may distract him/ her from the content of the text. A better approach is to jot down brief notes in the margins or to indicate the question numbers next to the portions of text that provide the answers.

### *Recite*

After reading each section of text, take a few minutes to recall the important points. In order to actively make mental connections among main ideas and details, recite them aloud or write them down. Go over the answers to the predicted questions and/or summarize the section. Recitations should be done without consulting the book unless necessary. Paraphrasing aids in understanding. Immediate recall is essential for registering the information in long-term memory. Without recitation, almost half of what one reads is lost from memory after only one day!

### *Review*

After reading and reciting the text section by section, review the entire chapter or article to see how the information fits together. This total review allows the reader to evaluate his/her understanding of the text, to organize all of the main ideas and supporting details, and to reinforce them in memory.

When reviewing, refer back to the headings and subheadings as well as the predicted questions and answers. Look at notes written in the margins while reading. Information that was underlined or highlighted may also be reviewed. Flowcharts, outlines, and other visual aids may be used to organize the important information, and they provide study aids for future exam preparation. In a few sentences, summarize the purpose and main ideas of the reading; write the summary down or say it aloud. Or, the information generated during the review may be recorded on audio tape for future referral.

Repeating the review process every week greatly improves one's ability to remember the information. And, it cuts down on preparation time for exams later.

Return to [Organization Reading Strategies Menu](#)

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## PQ4R STRATEGY

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Like [SQ3R](#), the PQ4R strategy (REFERENCE) is an individualized method for improving reading comprehension. This six-step process involves previewing, questioning, reading, reflecting, reciting, and reviewing. Besides adding the additional step, PQ4R requires that the text be read in its entirety before reflecting, rather than section by section as with SQ3R.

The PQ4R strategy has many of the same advantages as the more popular SQ3R. It is easy to use and can be applied to readings in most academic subjects. Students can use PQ4R on their own, without the intervention of a facilitator.

Because PQ4R is so similar to SQ3R, the steps are outlined briefly here. For more details, refer to the [SQ3R](#) section of this page.

### *Preview*

The preview stage of PQ4R is essentially the same as the survey phase of SQ3R. To preview a reading, scan the title, section headings, and visual aids. Read the first and last paragraphs. This should give the reader a general idea of the purpose of the text and the major concepts to be covered. The information gleaned from the preview is used in the next step.

### *Question*

Again, the second phases of PQ4R and SQ3R are identical and involve predicting questions that may be answered in the text. Convert headings into questions or draw upon past experiences to form questions. Look for answers to the questions while reading in the next step.

### *Read*

Unlike SQ3R, the text is read in its entirety with the PQ4R strategy. Carefully read the complete text, recording notes in the margin or underlining important information that answers the predicted questions.

### *Reflect*

Information from the entire chapter or article is linked together in the reflection phase. The reader should attempt to develop insight into the topic and make associations among the important material noted while reading.

### *Recite*

Recitation involves summarizing the main points and supporting details of the complete text. To involve more senses and improve understanding, say the summary aloud or write it down using information organization tools like flowcharts and outlines.

### *Review*

The final review entails highlighting key points of the text. Make sure the predicted questions have been answered and that the author's purpose is fully understood

<http://www.muskingum.edu/~cal/database/general/reading.html#SQ3R>

<http://www.studygs.net/reading.htm>

<http://www.studygs.net/texred1.htm>

## Tips on How to Read with More Speed and Efficiency

What slows down reading?

- Skip-backs, re-reading
- Lip reading
- Subvocalization- pronouncing the words as you read

1. Determine your purpose before you read

- To understand Information--- Skim & Scan
- To determine Value or to read for enjoyment- read rapidly or slowly according to your feelings
- To read analytically- read at a moderate pace
- If you only need main ideas then allow yourself to skim the material.

2. Develop Flexibility according to type of material and level of difficulty.

3. Avoid looking at words separately and look at them in groups of 2 or 3

**For instance/ a sentence/ can be grouped/ in this manner.**

4. Look through vocabulary words that may stump you before you begin reading.

5. Reduce Skip-Back by using a pointer (hand, pencil, index card, etc...) to guide your eyes across the page without interruptions.

6. Practice. Spend a few minutes every day reading at a faster than comfortable rate using your hand or an index card as a guide.

7. Don't skip over illustrations and tables- they aid greatly in understanding.

8. To improve concentration- personalize the subject and create questions related to the material before reading the assignment.

9. Reading speed and comprehension will only improve when you include these 3 factors:

- Desire to improve
- Willingness to try new techniques
- Motivation to practice

10. PRACTICE

**<http://www.stthomas.edu/academicsupport/HowtoReadwithMoreSpeedandEfficiency.pdf>**

# TEST TAKING

## Organizing for tests

### **Begin reviewing early**

This will give your brain time to get comfortable with the information

### **Conduct short daily review sessions**

You can ease into a more intense review session prior to major exams

### **Read text assignments before lectures**

This will help you identify concepts that the professor considers important and that are already somewhat familiar

### **Review notes immediately after lectures**

This will help you identify information that you do not understand while the lecture is still fresh in your memory--and other students' memories as well. When you review immediately, you'll have time to clarify information with other students

### **Review with a group**

This will enable you to cover important material that you may overlook on your own

**Conduct a major review early enough** to allow for a visit to the instructor during their office hours if necessary

### **Break up the study tasks into manageable chunks**

especially during major reviews prior to exams.

Studying three hours in the morning and three in the evening will be more effective than studying at a six hour stretch. *Studying while you are mentally fatigued is usually a waste of time*

### **Study the most difficult material when you are alert**

## **Anticipating Test Content**

### **Pay particular attention to any study guides**

that the instructor hands out in class before the exam, or even at the beginning of the course! For example: key points, particular chapters or parts of chapters, handouts, etc.

### **Ask the instructor what to anticipate on the test**

if he/she does not volunteer the information

### **Pay particular attention--just prior to the exam--**

to points the instructor brings up during class lectures

### **Generate a list of possible questions**

you would ask if you were making the exam, then see if you can answer the questions

### **Review previous tests**

graded by the instructor

### **Confer with other students**

to predict what will be on the test

### **Pay particular attention to clues**

that indicate an instructor might test for a particular idea, as when an instructor:

says something more than once

writes material on the board

pauses to review notes

asks questions of the class

says, "This will be on the test!"

## Dealing with Test Anxiety

### Most students experience some level of anxiety during an exam

However, when anxiety affects exam performance it has become a problem.

### General preparation/building confidence:

Review your personal situation and skills

Academic counselors can help you in these areas, or refer to our Guides on the topic:

- Developing good [study habits and strategies](#) (a link to our directory)
- [Managing time](#)  
(dealing with procrastination, distractions, laziness)
- Organizing material to be studied and learned  
Take a step by step approach to build a strategy and not get overwhelmed
- Outside pressures  
success/failure consequences (grades, graduation), peer pressure, competitiveness, etc.
- Reviewing your past performance on tests  
to improve and learn from experience

### Test preparation to reduce anxiety:

- Approach the exam with confidence:  
Use whatever strategies you can to personalize success: visualization, logic, talking to your self, practice, team work, journaling, etc.  
View the exam as an opportunity to show how much you've studied and to receive a reward for the studying you've done
- Be prepared!  
Learn your material thoroughly and organize what materials you will need for the test. Use a checklist
- Choose a comfortable location for taking the test  
with good lighting and minimal distractions
- Allow yourself plenty of time,  
especially to do things you need to do before the test and still get there a little early
- Avoid thinking you need to cram just before
- Strive for a relaxed state of concentration  
Avoid speaking with any fellow students who have not prepared, who express negativity, who will distract your preparation
- A program of exercise  
is said to sharpen the mind
- Get a good night's sleep



- the night before the exam
- Don't go to the exam with an empty stomach  
Fresh fruits and vegetables are often recommended to reduce stress.  
Stressful foods can include processed foods, artificial sweeteners, carbonated soft drinks, chocolate, eggs, fried foods, junk foods, pork, red meat, sugar, white flour products, chips and similar snack foods, foods containing preservatives or heavy spices
  - Take a small snack, or some other nourishment to help take your mind off of your anxiety.  
Avoid high sugar content (candy) which may aggravate your condition<relaxation>

### **During the test:**

- Read the directions carefully
- Budget your test taking time
- Change positions to help you relax
- If you go blank, skip the question and go on
- If you're taking an essay test and you go blank on the whole test, pick a question and start writing. It may trigger the answer in your mind
- Don't panic when students start handing in their papers. There's no reward for being the first done

### **If you find yourself tensing and getting anxious during the test**

< relaxation>

- < relaxation>Relax; you are in control.  
Take slow, deep breaths
- Don't think about the fear  
Pause: think about the next step and keep on task, step by step
- < relaxation>Use positive reinforcement for yourself:  
Acknowledge that you have done, and are doing, your best
- Expect *some* anxiety  
It's a reminder that you want to do your best and can provide energy  
Just keep it manageable
- Realize that anxiety can be a "habit"  
and that it takes practice to use it as a tool to succeed

### **After the test, < relaxation> review how you did**

- List what worked, and hold onto these strategies  
It does not matter how small the items are: they are building blocks to success
- List what did not work for improvement

- Celebrate that you are on the road to overcoming this obstacle

**Check out local centers and resources in your school for assistance!**

**If you are aware that you have a problem with test anxiety,** be sure your teacher or instructor knows before any testing begins (and not the hour before!). There may be other options to evaluate your knowledge or performance within the subject matter.

**See also:**

[Test Anxiety](#), Counseling Services, University at Buffalo, State University of New York

[Test Anxiety](#), The Counseling Center, University of Missouri-Rolla

[Virtual Handouts: Test Anxiety](#), University Counseling Center, George Washington University

## Multiple Choice Strategies

Multiple-choice questions consist of 3 parts:

1. a stem, which asks a question, poses a problem, or presents an incomplete sentence.
2. the correct answers, which appears among
3. a number of “distracters” or alternatives.

1. Try to **answer the question in your own words first**. Read the question and try to answer it before looking at the choices. This may eliminate the distracters.
2. **Read all choices**- don't stop with 2<sup>nd</sup> or 3<sup>rd</sup> choices, even if you are certain that you have found the correct answer. Your job is to pick the best answer that is available.
3. You should be able to **eliminate** some of the answers. Crossing them out with your pencil helps you to eliminate distractions and focus on the best answers.
4. **Examine** closely items that are very similar. Circle the part that is different. Try to express each in your own words or picture them and then analyze how they differ.
5. It is possible for every alternative to be familiar. You must **understand the meaning** of each of the alternatives with respect to the context of the question. You can achieve this by studying for the test as though it will be a short answer or essay test.
6. When you have choices that are combinations of previously listed choices- treat each choice when combined with the stem, as a **true or false statement**. Select the choice that has all true statements.
7. Look for the level of **qualifying words**. Such words as *best, always, all, no, never, none, entirely, completely* suggest that a condition exists without exception. Items containing words that provide for some level of exception or qualification are: *often, usually, less, seldom, few, more, and most*.
8. **Avoid choosing answers that are unfamiliar** or that you do not understand. If you have studied carefully, a choice that is unfamiliar to you is probably incorrect. You are being tested to see if you know the difference between what “looks right” and what “is right.”
9. Make **educated guesses**. Never leave a question unanswered. If nothing looks familiar, pick the answer that seems most complete and contains the most information.
10. If you know that two or three of the options are correct, **“all of the above”** is a strong possibility.
11. If you cannot choose between two alternatives, try vividly **imagining** each one as the correct answer. If you are like most people, you will often feel that one of the answers is wrong. Trust this feeling—research suggests that feelings are frequently accessible even when recall is poor.
12. **Study Tips**- study alone at first and study with others afterward. When you feel confident with the material study with one or more classmates. This allows others to pick the material, thereby exposing the gaps in your knowledge (just as the exam does).

<http://www.stthomas.edu/academicsupport/MultipleChoiceStrategies.pdf>

## True/False Tests

### **Every part of a true sentence must be "true"**

If any one part of the sentence is false,  
the whole sentence is false despite many other true statements.

### **Pay close attention to**

negatives, qualifiers, absolutes, and long strings of statements

### **Negatives can be confusing.**

If the question contains negatives, as "no, not, cannot"

Drop the negative and read what remains.

Decide whether that sentence is true or false.

If it is true, its opposite, or negative, is usually false

### **Qualifiers are words that restrict or open up general statements.**

Words like "sometimes, often, frequently, ordinarily, generally" open up the possibilities of making accurate statements. They make more modest claims, are more likely to reflect reality, and usually indicate "true" answers.

### **Absolute words restrict possibilities.**

"No, never, none, always, every, entirely, only"

imply the statement must be true 100% of the time and usually indicate "false" answers

### **Long sentences often include** groups of words set off by punctuation.

Pay attention to the "truth" of each of these phrases.

If one is false, it usually indicates a "false" answer

Guessing:

**Often true/false tests contain more true answers than false answers.** You have more than 50% chance of being right with "true". However, your teacher may be the opposite. Review past tests for patterns...

<http://www.studygs.net/tsstak2.htm>

## Short Answer Tests

### **An instructor's primary purpose**

in giving a short-answer test is to cover the material.

Go over your notes and the assigned reading:

- **Prepare for the test**  
by studying off of summary sheets that are packed with information within condensed space. Try to categorize the material
- **Use grammatical clues**  
within a statement as hints for the correct answer
- **If you can think of several answers**  
for a blank or short answer question, let the instructor know. The instructor may give you a clue to the correct answer he/she's looking for
- **A guess made with common sense**  
could get you more test points than if you leave an answer blank.  
Don't be a smart aleck if you guess
- **Write your short answers in simple**, telegraphic sentences.  
Packing as much information as you can is more important than literary style.

<http://www.studygs.net/tsttak5.htm>

## The Essay Exam

### Organization and neatness have merit

#### Before writing out the exam:

#### Set up a time schedule

#### to answer each question and to review/edit all questions

- If six questions are to be answered in sixty minutes, allow yourself only seven minutes for each
- If questions are "weighted", prioritize that into your time allocation for each question
- When the time is up for one question, stop writing, leave space, and begin the next question. The incomplete answers can be completed during the review time
- Six incomplete answers will usually receive more credit than three, complete ones

#### Read through the questions once and note if you have any choice in answering questions

- Pay attention to how the question is phrased, or to the "directives", or words such as "compare", "contrast", "criticize", etc. See their definitions in "[Essay terms](#)"
- Answers will come to mind immediately for some questions

**Write down their key words**, listings, etc, as they are fresh in mind. Otherwise these ideas may be blocked (or be unavailable) when the time comes to write the later questions. This will reduce "clutching" or panic (anxiety, actually fear which disrupts thoughts).

#### Before attempting to answer a question, put it in your own words

- Now compare your version with the original.  
Do they mean the same thing? If they don't, you've misread the question. You'll be surprised how often they don't agree.

#### Think before you write:

#### Make a brief outline for each question

#### Number the items in the order you will discuss them

- **Get right to the point**  
State your main point in the first sentence  
Use your first paragraph to provide an overview of your essay.  
Use the rest of your essay to discuss these points in more detail.  
Back up your points with specific information, examples, or quotations from your readings and notes
- Teachers are influenced by compactness, completeness and clarity of an organized answer

- Writing in the hope that the right answer will somehow turn up is time-consuming and usually futile
- To know a little and to present that little well is, by and large, superior to knowing much and presenting it poorly--when judged by the grade received.

### **Writing & answering:**

#### **Begin with a strong first sentence**

that states the main idea of your essay.

Continue this first paragraph by presenting key points

#### **Develop your argument**

- **Begin each paragraph**  
with a key point from the introduction
- **Develop each point**  
in a complete paragraph
- **Use transitions,**  
or enumerate, to connect your points
- **Hold to your time**  
allocation and organization
- **Avoid very definite statements**  
when possible; a qualified statement connotes a philosophic attitude, the mark of an educated person
- **Qualify answers when in doubt.**  
It is better to say "toward the end of the 19th century" than to say "in 1894" when you can't remember, whether it's 1884 or 1894. In many cases, the approximate time is all that is wanted; unfortunately 1894, though approximate, may be incorrect, and will usually be marked accordingly.

#### **Summarize in your last paragraph**

Restate your central idea and indicate why it is important.

#### **Review:**

#### **Complete questions left incomplete,**

but allow time to review all questions

#### **Review, edit, correct**

misspellings, incomplete words and sentences, miswritten dates and numbers.

#### **Not enough time?**

#### **Outline your answers**

<http://www.studygs.net/tsttak4.htm>

# STUDYING

## Concentration: the ability to direct your thinking

**The art or practice of concentration,**  
no matter if studying biology or playing pool,  
is to focus on the task at hand and eliminate distraction

We all have the ability to concentrate -- sometimes. Think of the times when you were "lost" in something you enjoy: a sport, playing music, a good game, a movie. Total concentration.

**But at other times,**

- Your mind wanders from one thing to another
- Your worries distract you
- Outside distractions take you away before you know it
- The material is boring, difficult, and/or not interesting to you.

**These tips may help:** They involve

1. What you can control in your studies
2. Best practices

**What you can control in your studies:**

- **"Here I study"**  
Get a dedicated space, chair, table, lighting and environment  
Avoid your cellphone or telephone  
Put up a sign to avoid being disturbed or interrupted  
If you like music in the background, OK, but don't let it be a distraction.  
(Research on productivity with music versus without music is inconclusive)
- **Stick to a routine, efficient study schedule**  
Accommodate your day/nighttime energy levels  
See our Guide on [Setting goals and making a scheduling](#)
- **Focus**  
Before you begin studying, take a few minutes to summarize a few objectives, gather what you will need, and think of a general strategy of accomplishment
- **Incentives**  
Create an incentive if necessary for successfully completing a task-  
such as calling a friend, a food treat, a walk, etc.  
For special projects such as term papers, design projects, long book reviews,



- set up a special incentive
- **Change topics**  
Changing the subject you study every one to two hours for variety
- **Vary your study activities**  
Alternate reading with more active learning exercises  
If you have a lot of reading, try the [SQ3R method](#)  
Ask yourself how you could increase your activity level while studying?  
Perhaps a group will be best? Creating study questions?  
Ask your teacher for alternative strategies for learning. The more active your learning, the better.
- **Take regular, scheduled breaks that fit you**  
Do something different from what you've been doing (e.g., walk around if you've been sitting), and in a different area
- **Rewards**  
Give yourself a reward when you've completed a task

### Best Practices:

- **You should notice improvement in a few days**  
But like any practice, there will be ups, levels, and downs:
- **It will benefit other activities you do!**

[Be here now](#) | [Worry time](#) | [Tally Card](#) | [Energy level](#) | [Visualize](#)

#### **Be Here Now**

This deceptively simple strategy is probably the most effective.

When you notice your thoughts wandering astray, say to yourself

*"Be here now"*

and gently bring your attention back to where you want it.

#### **For example:**

You're studying and your attention strays to all the other homework you have, to a date, to the fact that you're hungry. Say to yourself

*"Be here now"*

Focus back on subject with questions, summarizing, outlining, [mapping](#), etc. and maintain your attention there as long as possible.

When it wanders again, repeat

*"Be here now"*

and gently bring your attention back, and continue this practice, repeatedly. It will work!

Do not try to keep particular thoughts out of your mind. For example, as you sit there, close your eyes and think about anything you want to for the next three minutes except cookies. Try not to think about cookies...When you try not to think about something, it keeps coming back. ("I'm not going to think about cookies. I'm not going to think about cookies.")

You might do this hundreds of times a week. Gradually, you'll find that the period of time between your straying thoughts gets a little longer every few days. So be patient and keep at it. You'll see some improvement!

Do not constantly judge your progress. Take it easy on yourself. Good practice is enough to say that you did it, and that you are on the road. The mind is always different and the practice unfolds over time with many ups and downs.

### **Worry or Think Time**

Research has proven that people who use a worry time find themselves worrying 35 percent less of the time within four weeks.

1. **Set aside a specific time each day to think about** the things that keep entering your mind and interfering with your concentration.
2. **When you become aware of a distracting thought,** remind yourself that you have a special time to think about them,
3. **Let the thought go,** perhaps with "Be here now,"
4. **Keep your appointment** to worry or think about those distracting issues

For example, set 4:30 to 5 p.m. as your worry/think time. When your mind is side-tracked into worrying during the day, remind yourself that you have a special time for worrying. Then, let the thought go for the present, and return your focus to your immediate activity.

### **Tallying your mental wanderings.**

Have a 3 x 5 inch card handy. Draw two lines dividing the card into three

Each time your mind wanders, make a tally in the appropriate section. Keep a card for each day. As your skills build, you'll see the number of tallies decrease

### **Maximize your energy level**

When is your energy level at its highest? When are your low energy times? Study your most difficult courses at your high energy times. Sharpest early in the evening? Study your most difficult course then. Later in the evening? Work on your easier courses or the ones you enjoy the most.

Most students put off the tough studies until later in the evening when they become tired, and it is more difficult to concentrate. Reverse that. Study hard subjects at peak energy times; easier ones later. This alone can help to improve your concentration.

### **Visualize**

As an exercise before you begin studying; think of those times when concentration is not a problem for you--no matter what situation. Now try to feel or image yourself in that situation.

Recapture that experience immediately before your studies by placing yourself in that moment.

Repeat before each study session.

<http://www.studygs.net/concen.htm>

# Group and Cooperative Learning

Group and cooperative learning offer alternatives to learning by the individual student. With these strategies, several students work together to complete a task. Such collaborative learning may be administered by the course instructor or may be instigated by a group of students on their own. The latter is often referred to as "study groups."

Small groups work best for collaborative learning. The optimum group size is three students, but effective groups may have two to five members. Larger groups work better as a forum for information exchange among smaller sub-groups.

"Each group operates as a team and the teammates are responsible for their own learning as well as that of their teammates. ... Everyone has a task and is actively involved. ... students must feel that they need each other in order to carry out the group's task" (Mickel, 1993, p. 659).

In order to be effective, groups must follow general operating procedures and rules of behavior. In addition, group members should be aware of their roles in cooperative sessions. Worksheets may be used to formalize these considerations.

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## General Operating Procedures

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All too often, study groups fail because members do not discuss the goals of the group or the manner in which those goals will be achieved. By following the general operating procedures explained below, students can head off disasters and make cooperative learning more effective and efficient. The rules given below, from Gomon and Guenzel (1987), may be altered or supplemented by members of the study group to fit their particular needs.

- Agree on the desired outcomes or goals of the group.
- Agree on group activities and roles to achieve outcomes.
- Agree on specific time allocations for the activities of each session.
- Operate under the control of the Time-keeper.
- Agree on next-meeting responsibilities and preparations.
- Evaluate group outcomes and meeting process.

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## Rules of Behavior

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Group members should agree on some rules of behavior for study sessions. The rules given below, from Gomon and Guenzel (1987), may be altered or supplemented by members of the study group to fit their particular needs.

- Group members will agree to adopt the **General Operating Procedures** set out by the group.
- Group members will make a personal commitment to contribute to the group by...

- bringing materials relevant to the task.
    - previewing topics to be covered by the group.
    - meeting due dates for activities.
    - notifying members of potential agenda changes prior to sessions.
  - In evaluating group outcomes and process, members will agree to use objective critique behaviors rather than personal attacks.
- 

## Group Member Roles

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Members of effective study groups have specific roles. Each group member may assume several roles at a given session; in fact, for smaller groups it will be necessary for each member to have more than one duty. Gomon and Guenzel's (1987) descriptions of seven group member roles are given below. A group activity that reinforces the differences between group member roles, **Mirroring**, is discussed elsewhere in this page.

- Chair or Leader
  - This person is the agenda-setting facilitator.
  - In other words, the chair or leader sets the agenda of the session, with input from the rest of the group.
- Time Keeper
  - This person is the agenda facilitator.
  - The time keeper keeps track of the amount of time spent on each activity in the session and makes sure pre-arranged time allocations in the agenda are followed.
- Room Scheduler
  - This person arranges the date, time and place of the study session with school administrators, if necessary.
  - The room scheduler may also be responsible for contacting study group members to remind them about sessions.
- Resource Arranger
  - This person arranges for supplies and resources for the session.
  - Resources may include reference books from the library, peer tutors, or overhead projectors.
- Group Process Evaluator
  - This person evaluates the effectiveness and efficiency of the session.
- Producer or Participant
  - This person takes part in the scheduled activities of the session.
  - In most cases, all members of the study group are participants.
- Resource Person
  - This person is not necessarily a constant member of the group.
  - The resource person is present when needed to provide additional resources to the group members.
  - The resource person may be a faculty member, a tutor, or another knowledgeable person.

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## Study Group Worksheets

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Worksheets are useful for helping students implement effective and efficient study groups. They provide the study group with a common sense of direction and purpose, and therefore should be completed for each group meeting or session. Worksheets combine the information described in the previous sections of this stack: operating procedures, rules of behavior, and roles. Specific activities and time limits are outlined on the worksheet.

A blank sample worksheet is shown below. It delineates the agenda of a future meeting and the amount of time to be spent on various activities in the next session. Two examples of completed worksheets for exam preparation and homework completion study groups are then given. All worksheets are from Gomon and Guenzel (1987).

Any of the worksheets can be tailored to meet the specific needs of the study group. It is a good idea to make Xerox copies of worksheets to distribute to all members of the study group.

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### GROUP AGENDA WORKSHEET

- Directions
  - Agree on role assignments.
  - State special rules.
  - Follow procedures.
  - Operate under the control of the time-keeper.
- Group Members and Role Assignments

NAME	ROLE
.	.
.	.
.	.
.	.
.	.

- Meeting Time, Place and Date

\_\_\_\_\_

- Rules

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- Procedures

PROCEDURES	SPECIFIC OUTCOMES AND ACTIVITIES
Agree on specific outcomes (2-5 minutes)	* * * * *
Agree on specific activities and time allocations for each (2-5 minutes)	* _____ (____ min.) * _____ (____ min.) * _____ (____ min.) * _____ (____ min.) * _____ (____ min.)  Total = ____ minutes
Complete specified activities (Total = ____ minutes)	Comments: * * * * *
Agree on next-meeting responsibilities and preparations (2-5 minutes)	* * * * *
Evaluate group outcomes and process (2-5 minutes)	* * * * *

## LONG-TERM EXAM PREPARATION

### Study Group Worksheet

Time: 60 minutes

- Directions
  - Agree on role assignments.
  - State special rules.
  - Follow procedures.
  - Operate under the control of the time-keeper.
- Group Members and Role Assignments

**EXAMPLE**

NAME	ROLE
Michael	Time keeper, participant, evaluator
Heather	Chair, participant, evaluator
John	Room scheduler, resource arranger, participant, evaluator

- Meeting Time, Place and Date
  - 9:30 - 10:30, Room 330, 11/6/95
- Rules
  - Members agree to contribute and to follow procedures.
- Procedures

PROCEDURES	SPECIFIC OUTCOMES AND ACTIVITIES
Agree on specific outcomes (3 minutes)	* Answers to questions from last meeting * Sets of lecture notes from last 3 classes * Set of unanswered questions
Agree on specific activities and time allocations for each (3 minutes)	* Report answers to questions (10 min.) * Compare lecture notes by paraphrasing and identifying critical topics (12 min. for each lecture) * List new questions and assign them to group members (2 min.)  Total = 48 minutes
Complete specified activities (Total = 48 minutes)	Comments: *May need additional work on first lecture *Ask instructor about two definitions
Agree on next-meeting responsibilities and preparations (3 minutes)	* John - report answers to questions * All - bring definitions for Chs. 7 and 8 * All - work on first lecture
Evaluate group outcomes and process (3 minutes)	* Great meeting * Finished on time * Little gossip * Excellent summary of answers to questions

**HOMEWORK COMPLETION**

Study Group Worksheet

Time: 60 minutes

- Directions
  - Agree on role assignments.
  - State special rules.
  - Follow procedures.
  - Operate under the control of the time-keeper.
- Group Members and Role Assignments



NAME	ROLE
Dave	Chair, participant, evaluator
Cassie	Room scheduler, resource arranger, participant, evaluator
Jamaal	Time keeper, participant, evaluator

- Meeting Time, Place and Date
  - 4:00 - 5:00, Room 137, 4/28/96
- Rules
  - Members agree to contribute and to follow procedures.
- Procedures

PROCEDURES	SPECIFIC OUTCOMES AND ACTIVITIES
Agree on specific outcomes (3 minutes)	* Solutions for 3 "easy" homework problems * Solutions for 2 "hard" homework problems
Agree on specific activities and time allocations for each (3 minutes)	* Each member "talks" solution to an "easy" problem with others' input (4 min. each) * Group works through "hard" problems using model problem-solving method and resource person (17 min. each)  Total = 46 minutes
Complete specified activities (Total = 46 minutes)	Comments: * Question about order of operations
Agree on next-meeting responsibilities and preparations (3 minutes)	* All - bring 2 problems for practice test * Jamaal - contact prof about solution to unsolved "hard" problem * All - see tutor
Evaluate group outcomes and process (3 minutes)	* Maintained time schedule * One "hard" problem unsolved

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## *Words of Caution*

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**Collaborative learning can be more successful if the following words of caution are considered.** Some of these suggestions apply to study groups arranged by students themselves, while others are more pertinent to instructors using cooperative activities.

- Choose members of your study group carefully.
- Be sure that your study group mutually decides on a way to check that all members contribute fairly and equally to the group.
- At your first meeting, decide on penalties for not contributing fairly.
- Stay on track at your study group sessions. The meetings are not appropriate times for chit-chat, gossip, or other nonproductive activities.

- Remember that study groups are not substitutes for learning all the required material yourself. In other words, the purpose is not only to split the work load but to make sure you understand all of the material.

# WEBSITE RESOURCES

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## The Massachusetts Division of Career Services

<http://masscis.intocareers.org/loginmain.aspx?ReturnUrl=%2fdefault.aspx&cookieTest=y>

## Learning Strategies Database

<http://www.muskingum.edu/~cal/database/general/>

<http://www.muskingum.edu/~cal/database/content/>

<http://www.stthomas.edu/academicsupport/HowToGetBackOnTrackWhenYouAreBehind.pdf>

<http://www.studygs.net/>

## Transition Strategies from High School to College

<http://www.muskingum.edu/~cal/database/tocollege/>

<http://www.collegeboard.com/ssd/student/index.html>

<http://www.collegeboard.com/student/plan/index.html>

## Learning Differences

<http://www.ldonline.org/indepth>

<http://www.webmath.com/index.html>