Muskingum College

Center for Advancement of Learning

Learning Strategies Database

General-Purpose Learning Strategies

Reading Comprehension

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BACKGROUND INFORMATION ON READING COMPREHENSION

Reading comprehension refers to the ability to understand information presented in written form. While this process usually entails understanding textbook assignments, reading comprehension skills also may affect one's interpretation of directions on exams, labs, and homework assignments and completion of job applications or questionnaires.

The following paragraphs consider several basic topics related to reading comprehension.

- Metacognitive Behaviors of Good and Poor Readers
- Reasons for Lack of Comprehension
- Troubleshooting

METACOGNITIVE BEHAVIORS OF GOOD AND POOR READERS

Students with good versus poor reading skills demonstrate distinct cognitive behaviors before, during, and after reading an assignment. The following chart from Cook (1989) summarizes these behaviors.

	GOOD OR MATURE READERS	POOR OR IMMATURE READERS
BEFORE READING	• Activate prior knowledge • Understand task and set purpose • Choose appropriate strategies	• Start reading without preparation • Read without knowing why • Read without considering how to approach the material

DURING READING	• Focus attention
	• Anticipate and predict
	• Use fix-up strategies when lack of understanding occurs
	• Use contextual analysis to understand new terms
	• Use text structure to assist comprehension
	• Organize and integrate new information
	• Self-monitor comprehension by ...
	  ◦ knowing comprehension is occurring
	  ◦ knowing what is being understood
		• Are easily distracted
		• Read to get done
		• Do not know what to do when lack of understanding occurs
		• Do not recognize important vocabulary
		• Do not see any organization
		• Add on, rather than integrate, new information
		• Do not realize they do not understand

AFTER READING	• Reflect on what was read • Feel success is a result of effort • Summarize major ideas • Seek additional information from outside sources	• Stop reading and thinking • Feel success is a result of luck

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REASONS FOR LACK OF COMPREHENSION

Reading comprehension fails for a number of reasons. Students, with the help of a facilitator if necessary, should attempt to identify the cause(s) of lack of comprehension and then identify appropriate reading strategies to compensate for the deficit(s).

Five reasons for lack of reading comprehension are listed below (the first four are from Twining, 1991).

- Failure to understand a word
- Failure to understand a sentence
- Failure to understand how sentences relate to one another
- Failure to understand how the information fits together in a meaningful way (organization)
- Lack of interest or concentration

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TROUBLESHOOTING

The following tips are intended to help students and facilitators identify reasons for lack of reading comprehension. Learners may find that the reasons for lack of understanding are situational, depending on the type of reading matter, the subject of the material, and one's mental or physical state. Not all failures in all contexts will be attributable to the same factor. For example, lack of understanding of a biology text may be due to vocabulary problems, while lack of comprehension of a history text may be attributed to organizational failures. Therefore, it is helpful for students to be familiar with a number of reading comprehension strategies in order to deal effectively with different situations.

- Read a variety of materials. Do not limit yourself to text books.
- Read a fairly long portion of the material. It would be difficult to assess reading comprehension based on one or two paragraphs. Try to read an entire section or chapter instead.
- Circle unknown or unfamiliar words as you read.
- After reading, recall as much of the information as possible. Then check the accuracy and completeness of your recollections. If the main ideas are presented in a particular order, see if you can recall that organization.
- Consider how interesting the subject matter is and how much you already know about the subject.
- Answer questions about the material after reading it. The questions may come from the book itself, from instructors or tutors, or may be made up by the student.

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PURPOSES OF READING COMPREHENSION STRATEGIES

Reading is one of the most important academic tasks faced by students. Strategies designed to improve reading comprehension may have any number of purposes.

- To enhance understanding of the content information presented in a text
- To improve understanding of the organization of information in a text
- To improve attention and concentration while reading
- To make reading a more active process
- To increase personal involvement in the reading material
- To promote critical thinking and evaluation of reading material
- To enhance registration and recall of text information in memory

ADVANTAGES OF READING COMPREHENSION STRATEGIES

Improved reading comprehension skills can positively impact many facets of student academic performance. Students who have effectively read and understood reading assignments are better prepared for class, leading to improved class participation and more accurate and complete notes. Performance on exams and quizzes may be greatly improved as students become more proficient and effective readers. Student interest and motivation in a subject is often fostered when one understands the reading assignments. In addition, as students gain proficiency in reading, self-esteem improves.

SPECIFIC READING COMPREHENSION STRATEGIES

As indicated previously, failures in reading comprehension are usually attributable to one or more factors: lack of interest, lack of concentration, failure to understand a word, a sentence, or relationships among sentences, or failure to understand how information fits together. Most of the strategies discussed here are arranged according to these factors.

Some of the reading strategies may be used by students themselves, while others require intervention by a facilitator either initially to introduce the strategy or constantly to reinforce key ideas. Most of the strategies are designed for use by students, but a few are intended to be used by instructors only.

- Miscellaneous Strategies
    - General Fix-up Strategies
    - Increasing Reading Rate
    - Challenging Reading Material
    - Books on Tape
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    - Reading Preparation for Standardized Tests
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    - Teaching Vocabulary - Do's and Don'ts

- Strategies Related to Organization

    - Text Book Organization
    - Text Skimming
    - Creative Mapping for Content Reading
    - Mediated Instruction of Text (MIT) for Content Reading
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    - PQ4R Strategy
    - RAP Strategy
    - SNIPS Strategy
    - PARTS: A Text Perusal Strategy
    - REAP Strategy
    - MultiPass Strategy
    - PRSR Strategy
    - PROR Strategy
    - Text Book Reading Guides
    - Exercises in Meaningful Organization
    - KWL Strategy
    - Directed Reading Activity (DRA)
    - Directed Reading-Thinking Activity (DRTA)
    - Story Star / Story Map Frameworks
    - Gleaning

GENERAL FIX-UP STRATEGIES

When failures in reading comprehension occur, several general options are available to the reader. If these strategies are not effective, the reader is advised to consult the more specific strategies outlined in the rest of this page.

If reading comprehension fails . . .

- ignore that section of text and read on.
- suspend judgment and look ahead for clarification.
- form a tentative hypothesis and read on to see if you are correct.
- reread the current sentence.
- reread the previous context.
- go to an expert source.

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INCREASING READING RATE

Reading rate is a measure of how quickly one can read. It is calculated by dividing the number of words read by the number of minutes it takes to read the words. Reading rate most commonly is expressed in units of words per minute (WPM).

It takes conscious effort to improve reading rate fluency. One must become cognizant of the habits that reduce the rate of reading and then take steps to eliminate those habits. Lip reading, subvocalization, and regression are three such habits. Lip reading, a common habit, involves moving one's lips while reading without making any noise. Subvocalization occurs when one partially activates one's vocal cords. Lack of concentration results in regression, or forgetting previously read information.

Be cautioned that reading quickly is not effective if one does not understand or remember what one has read. Therefore, it is important to develop flexibility in one's reading skills. Adjust reading rates according to the type of material being read and the level of difficulty. Obviously, one should read a technical description of genetics more slowly than a magazine article on U.S.-Soviet relations. In addition, don't skip over illustrations and tables for the sake of saving time. Critical information is often tucked away in these ancillary formats.

Another cautionary note is related to the practice of subvocalization. While it is true that this habit reduces reading rate, it may be a necessary strategy for auditory learners to use while reading.

Measuring Reading Rate

To measure one's reading rate, locate appropriate reading materials and select a section of text. Mark the beginning of the selection. Read for a certain length of time (use a timer or watch) or for a certain amount of text. Mark the end of the selection, and note the total number of minutes spent reading.

Document the level of comprehension by recalling main ideas from the selection. If one reads for three minutes, one should remember three main points. If one reads for five minutes, one should remember five main ideas. Jot down these main points.

Count the number of words between the two marks, and divide that number by the number of minutes spent reading. This is the rate of reading, expressed in words per minute (WPM).

Increasing Reading Rate

Set a target reading rate at a level slightly higher than the initial reading rate. Use reading materials that are easy and interesting. Practice at least 15 minutes each day at the "pushed" rate. Increase the target rate by small increments as reading improves. Progress may be charted on a daily grid that plots rate (WPM) and time on the axes. Document progress for at least two weeks. [A sample reading rate progress grid will be available in August 1996.]

Move your eyes faster over the text. Instead of taking in three words per fixation, take in six words. Follow the lines with your finger, pen, pencil, or a 3 x 5 index card as you read.

Reduce regressions by raising awareness of them and by improving concentration. To raise awareness, use a 3 x 5 index card to cover words and lines as they are read. When you regress, you will have to move the card to remember what you have read. You will soon notice how often you must stop and move the card. To improve concentration, personalize the subject and create questions related to the material before reading the assignment. For more specific strategies, see the Creating Interest, Improving Concentration, and Improving Motivation sections of this page.

The key to increasing reading rate is practice. Realize that reading speed will not increase over night, but that the process will take some time. Don't give up.

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CHALLENGING READING MATERIAL

Reading assignments may be challenging if the information is highly specialized or technical, or if the material is beyond the student's level of preparation. In these situations it is common for students to lose interest and motivation. The following tips may help students get through difficult reading assignments.

- Repetition.
    - Read over the assignment once. Switch to another task for a period of time or sleep on it. Re-read the material later or on the following day. Review the assignment periodically.
- Remediation.
    - Consult supplemental resources for learning fundamental information needed to understand the reading assignment. Possibilities include introductory textbooks, student workbooks or study guides to textbooks, lab manuals, and survey books.
- Consult with Professionals.
    - Additional help in understanding difficult readings may be obtained from the instructor during office hours, from graduate assistants, and from professional tutors. Peer tutors or upperclass majors may also provide valuable assistance.
- Essential Words.
    - Focus on key words in the text. Emphasize verbs and nouns only; ignore or cross out unnecessary adjectives and adverbs. Look for terms in bold print or italics.
- Review and Summarize.
    - Review after reading each paragraph of text. Identify the main idea of each paragraph. Be

sure to understand each paragraph before moving on to the next. Review at the end of each section as well as at the end of the chapter. Develop your own summary of the chapter and compare it to the summary presented in the book.

- Make Reading More Active.
    - Comprehension may be improved if one uses senses other than vision while reading. Stimulate the auditory sense by reading aloud or listening to tape recordings of the text (see the Books on Tape section of this page). Take notes during or after reading difficult material (see the Text Book Notetaking section of this page).
- Make Reading Interactive.
    - Work with another student. Read to each other, and take turns summarizing sections or chapters of text. "Teach" each other the more difficult concepts, making liberal use of visual aids. Relate the material to personal experiences.
- Review Questions.
    - Evaluate your understanding of the material by answering the review questions at the end of the chapter or in student study guides and workbooks. If questions are not available, make up your own by converting the section headings into questions.
- Words and Definitions.
    - Look up the definitions of all unfamiliar words, even if they are not in bold print or italiacs. Compile a written list of unfamiliar words (and definitions) that appear repeatedly, or record the words and definitions on audio tapes and listen to them for review. Use a dictionary to look up non-technical words, and consult the glossary in the book for technical word definitions. Place a colored paper clip on the glossary pages for quick access. Additional vocabulary strategies are discussed elsewhere in this page.
- Other Strategies.
    - Other strategies outlined in this page may be helpful when confronted with difficult reading assignments.

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BOOKS ON TAPE

Reading comprehension may be improved by involving senses other than vision. One way of making reading more active is to listen to the material as you read it. Besides reading aloud, listening to tape recordings of texts is an effective way of improving reading comprehension. It is particularly useful for students who are auditory learners (see the page on Modality Strength for definitions and surveys).

Tape recordings of books may be homemade or professionally produced. Class mates, friends, or family members can record tapes for you if you don't wish to do so yourself. Professional taping services provide audiocassettes and/or tape players for a fee. An example is Recording for the Blind, which supplies educational and professional books on tape for all subject areas from fourth grade through postgraduate levels. This particular service, however, is available only to persons with visual impairments, learning disabilities, or other physical disabilities that inhibit reading.

When producing your own tapes, keep these things in mind. Speak clearly and audibly, at an appropriate speed. Do read section headings, tables of information, and captions of illustrations. You should also record the end of chapter summaries, lists of key terms, and review questions.

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READING STRATEGIES FOR ESL/EFL STUDENTS

Reading comprehension may be especially difficult for students whose primary language is not English. The task of reading is often more time consuming for ESL (English as a Second Language) or EFL (English as a Foreign Language) students. The following strategies are intended for use by foreign students to help with reading comprehension.

English-Foreign Language Dictionaries

Foreign students who have trouble with English vocabulary may be able to get by with simply using dictionaries for translating unfamiliar words. One problem with this strategy is that technical words in specific content areas may not be listed in traditional dictionaries. In addition, using translation dictionaries may be a time-consuming process. To this end, if words are used repeatedly, it may be helpful to compile a list of the English words and their translations.

Context Clues

Context clues refer to words located elsewhere in a sentence or paragraph that help one to decipher unknown vocabulary words. Complete details on context clues are found elsewhere in this page.

Other Vocabulary-Related Strategies

Additional strategies related to vocabulary and reading comprehension are discussed elsewhere in this page.

Paired Storytelling Strategy

The paired storytelling strategy (Lie, 1993) was developed as an alternative to strategies that rely solely on translating words and phrases. It encourages foreign students in high school and college to use prior

knowledge to improve comprehension of reading assignments. Both reading and writing skills are integrated with group activities in the paired storytelling strategy.

"This approach includes five characteristics important in teaching students to read in a foreign language: (a) that students' cultural background plays an important role in reading comprehension; (b) that L2 (second language) readers should use the same sorts of skills as effective L1 (first language) readers do; (c) that reading should be integrated with writing; (d) that students should be engaged in nonthreatening cooperative contexts; and (e) that they should have the opportunity to process information effectively and communicate in the target languge (TL)" (Lie, 1993, p. 656).

The paired storytelling strategy has several advantages. First, it gives ESL students the opportunity to converse in the target language in an informal setting on a one-on-one basis. Because it is a group endeavor, paired storytelling encourages cooperation, motivation, and confidence. Self-esteem often is impacted positively. Second, verbal use of the target language improves the students' skills in reading and writing the language. A third advantage of the strategy is the contextualized practice with vocabulary that it provides. New words are used in meaningful ways by both partners in each pair.

The paired storytelling strategy requires guidance by a facilitator. Directions for using the paired storytelling strategy are outlined below.

1. Divide Students.
    - Break the class into pairs of students.
2. Introduce Topics.
    - Introduce the topic of the reading assignment and write it on the board or overhead projector.
3. Brainstorm.
    - Help the students brainstorm about the topic. What previous knowledge do they have about the topic? How does it relate to personal experiences?
    - The facilitator should emphasize that there are no "right" answers or comments in this initial stage. The point is to activate the students' background and to encourage them to anticipate what they might find in the assignment.
    - For the facilitator, the brainstorming stage is important for evaluating whether or not the students' knowledge base is adequate for the reading assignment. If necessary, the facilitator may provide additional background information relevant to the reading.
4. Distribute Assignment.
    - Divide the reading assignment into two parts. Give a copy of the first section to one student in each group, and a copy of the second section to the other student in each pair.
5. Read and Annotate.

- As each student reads his/her section, he/she should write down the main ideas in the order in which they appear in the text. It may be helpful to limit the number of main points to be recorded for each of the two sections of text.

6. Exchange Lists.
    - The students in each pair then exchange their lists of key ideas with their partners. The students are given a few minutes to evaluate his/her partner's list with respect to the section he/she read and annotated. At this stage, if a student does not understand an item on his/her partner's list, the facilitator or partner may define it or use it in a sentence in the target language.
7. Write a Story.
    - Using his/her partner's list as well as recollections of the section he/she read, each student composes his/her own version of the missing section. The student who read the first section predicts what happens in the end, and the student who read the second section predicts what happened in the beginning.
8. Read Stories.
    - The partners then read their versions of the missing sections to each other. The facilitator also may seek volunteers to read their versions to the entire class. During this stage, it is important to forbid teasing or deriding by the other students.
9. Comparison.
    - The missing sections are then distributed to the students, who read it and compare it to their own versions.
10. Discussion.
    - The complete story is then discussed within each pair and/or by the entire class. The former situation is better if students are wary of speaking in front of others. The facilitator may move among the pairs to monitor the discussion.
11. Evaluation.
    - The facilitator may choose to quiz students on the reading assignment. If so, the evaluations should be completed individually.

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READING PREPARATION FOR STANDARDIZED TESTS

An important component of most standardized tests like ACT and SAT is reading comprehension. This

section outlines strategies to help one prepare for the reading comprehension sections of standardized tests. Because respectible standardized test scores are necessary for admission into undergraduate, graduate, and professional programs, it is important to perform well on the reading comprehension portions of these tests.

Reading comprehension tests usually contain excerpts of text a few hundred words in length. Topics of the text vary widely from popular culture to natural science to current politics. Each passage is followed by several questions based on the text. The number of questions is proportional to the length of the passages.

Three strategies for improving performance on reading comprehension tests are knowing typical questions on reading comprehension, reading the passage before the questions, and practicing reading skills (REFERENCE). Other strategies such as underlining and annotating are discussed.

For more strategies, see the Reading Comprehension Tests section of the Test Taking page.

Typical Reading Comprehension Questions

Students should become familiar with the main categories of reading comprehension questions asked on standardized tests. Having these question types in mind will help to focus one's attention while reading the passages.

Reading comprehension questions usually take one of three forms: questions based on the entire passage, questions based on sections of the passage, and questions based on particular words or sentences. Each of these is discussed and exemplified below (REFERENCE).

- Questions Based on the Entire Passage

  Questions based on the entire reading usually target the main point of the text, author intentions, main ideas, and content. Ten types of questions based on the entire passage are given below along with sample wordings from SAT questions.

QUESTION TYPE	SAMPLE WORDING
Main Point: What is the passage trying to tell you?	The passage is mainly concerned with ...
Primary Purpose of Author: What does the author want to tell you?	The author's primary purpose in the passage is to ...
Mood or Attitude of Author: What is the tone or attitude of the author?	On the basis of the passage, the author's attitude toward ___ can most accurately be termed as one of ...
Assumptions Made by Author: What assumptions are made by the author but not directly stated in the passage?	Which of the following is an assumption made by the author?
Implications of Passage or Author: What does the author or the passage imply?	The author implies that ___ is ...
Applications of Main Ideas: How can you extend the main ideas of the passage?	The author provides information that would answer all of the following questions except ... According to the author, ___ would lead to ...
Summary of Passage: In a few words, how would you describe the passage? What title would you give the passage?	Which of the following titles best summarizes the content of the passage? Which of the following would be the most appropriate title for the passage?
Content of the Passage: What is the passage really about?	Which of the following describes the content of the passage?
Inferences: What can you infer from the passage as a whole?	It can be inferred from the passage that ...
Statements With Which the Author Would Agree: What could you say that the author would agree with, knowing the way he/she wrote the passage?	With which of the following statements regarding ___ would the author probably agree?

- Questions Based on Sections of the Passage

In order to answer questions on specific sections of the passage, one must be able to identify and understand the main points in each paragraph. Look for cue words like advantages, disadvantages, similarities, differences, in contrast with, in comparison to, most importantly, primarily, and on the other hand.

Questions based on portions of the text usually deal with inferences, applications, and implications of the information. Six types of questions based on sections of the passage along with sample wordings from SAT questions are given in the following table.

QUESTION TYPE	SAMPLE WORDING
Inferences: What can you infer from specific sections in the passage?	It can be inferred that the ancient's atomic theory was primarily based on ...
Applications: How can you apply information in specific sections of the passage to other areas?	The author provides information that answers which of the following questions?
What Precedes or Follows Passage: What do you think was written right before the passage or right after the passage?	It can be inferred that in the paragraphs immediately preceding the passage, the author discussed ...
Stated Ideas: Can you find in the passage a specific reference to a stated idea?	According to the passage, blacks were denied entrance into anti-slavery societies because ...
Implications: What is implied by a section in the passage?	The author implies that many American's devotion to the ideal of justice is ... In describing American attitudes about the land (lines 7-8), the author implies that ...
Tone or Mood: What is the tone or mood of a section of the passage?	At the conclusion of the passage, the author's tone is one of ...

- Questions Based on Words, Phrases or Sentences

Specific details and pieces of information may be the subject of test questions. The content itself is not usually the subject of questions. Rather, the reasons for using the information or the meanings of the information are usually the subject of questions.

Two types of questions based on words, phrases, or sentences are listed in the following table along with sample wordings from SAT questions.

QUESTION TYPE	SAMPLE WORDING
Reason for Use: Why are certain words, phrases, or sentences mentioned or used in the passage?	The author mentions Newton's *Principis* in order to ...
Meaning of a Word or Phrase: What is the meaning of a certain word, phrase, or sentence in the passage?	The enemy referred to in the last sentence is probably ... According to the author, the words in the Declaration of Independence, "all men are created equal," are meant to represent ... By "this skepticism" (line 35), the author means ...

Read Passages Before Questions

Some authors (e.g. Lunenfeld and Lunenfeld, 1981) contend that one should look over the questions before reading the passage, arguing that it saves time and focuses one's attention on certain information. But others argue that for standardized tests this practice is probably a waste of time. Because standardized tests are timed, it is important to move through the passages and questions efficiently.

If one is familiar with the common types of questions asked on standardized tests, as described on the previous tables, one will already know what to expect. "Reading the passage first forces you to get involved with the passage and with the intent of its author. By getting involved you will, in fact, anticipate many if not all of the questions that follow the passage" (REFERENCE, p. 40). If one reads the questions first, one will be tempted to move too quickly through the passage looking for the answers. As a result, the intentions and tone of the author will be lost. It is also likely that the general theme of the entire passage will be misunderstood.

Practice Reading Skills

One of the best ways to prepare for reading comprehension tests is to practice. It is relatively easy to find reading materials appropriate for standardized test preparation. One might also work with a buddy, finding passages and making up questions for each other.

Locate passages of text about three to six paragraphs in length from the following sources: newspaper stories, newspaper editorials, newspaper political columns, essays and columns in news magazines like *Time* or *Newsweek*, science fact magazines, encyclopedia articles, nonfiction books, and general interest magazines like *Reader's Digest.*

Read a passage, keeping in mind the common types of standardized test questions discussed previously.

After completing the reading, make up questions based on the entire passage, on sections of the passage, and on specific words or sentences. Then answer your own questions.

An example of practicing reading comprehension is outlined below. Questions and answers follow the sample passage of text (REFERENCE).

- Sample Passage

  "We should also know that 'greed' has little to do with the environmental crisis. The two main causes are population pressures, especially the pressures of large metropolitan populations, and the desire - a highly commendable one - to bring a decent living at the lowest possible cost to the largest possible number of people."

  "The environmental crisis is the result of success - success in cutting down the mortality of infants (which has given us the population explosion), success in raising farm output sufficiently to prevent mass famine (which has given us contamination by pesticides and chemical fertilizers), success in getting the people out of the tenements of the 19th-century cities and into the greenery and privacy of the single-family home in the suburbs (which has given us urban sprawl and traffic jams). The environmental crisis, in other words, is largely the result of doing too much of the right sort of thing."

  "To overcome the problems that success always creates, one must build on it. But where to start? Cleaning up the environment requires determined, sustained effort with clear targets and deadlines. It requires, above all, concentration of effort. Up to now we have tried to do it in the headlines - when what we ought to do first is draw up a list of priorities."

- Sample Questions

  1. This passage assumes the desirability of

     (a) using atomic energy to conserve fuel.
     (b) living in comfortable family lifestyles.
     (c) settling disputes peacefully.
     (d) combating cancer and heart disease with energetic research.
     (e) having greater government involvement in people's daily lives.

  2. According to this passage, one early step in any effort to improve the environment would be to

     (a) return to the exclusive use of natural fertilizers.
     (b) put a high tax on profiteering industries.
     (c) ban the use of automobiles in the cities.
     (d) study successful efforts in other countries.
     (e) set up a time table for corrective actions.

  3. The passage indicates that the conditions that led to overcrowded roads also brought about

     (a) more attractive living conditions for many people.
     (b) a healthier younger generation.

(c) greater occupational opportunities.
(d) the population explosion.
(e) greater concentration of population pressures.

4. It could be logically assumed that the author of this passage would support legistlation to

(a) ban the use of all pesticides.
(b) prevent the use of autos in cities.
(c) build additional power plants.
(d) organize an agency to oversee efforts to deal with environmental problems.
(e) restrict press coverage of protests.

- Answers to Sample Questions

1. Choice (b) is correct because the author discusses people leaving urban tenements to live in more attractive suburban homes. The other choices are not mentioned in the passage.

2. Choice (e) is correct because the author argues for "clear targets and deadlines." The other choices are not mentioned in the passage.

3. Choice (a) is correct because life in the suburbs lead to traffic problems. The other choices are not mentioned in relation to overcrowded roads.

4. Choice (d) is correct because the author argues for directed and concentrated efforts to deal with environmental problems. The first choice is not correct because the author only indicates that pollution from pesticides is an outgrowth of modern agricultural practices. Choices (b) and (c) are not justified by the content of the passage. The author would probably welcome more press coverage as long as this is not the only form of action against environmental problems, so the last choice is not correct.

Other Strategies for Standardized Reading Test Preparation

Additional strategies for improving reading comprehension on standardized tests include underlining key words and numbering the main ideas or key points as one reads a passage. One also may choose to write very brief annotations in the margins while reading. The key to these strategies is to keep it brief so valuable time is not wasted.

One should work quickly while completing reading comprehension questions. The easier passages are usually given first, so don't skip them. Don't skip questions after reading a passage since this wastes time.

Don't add one's own interpretations and facts to the passage in order to answer questions. The answers should be based on the information presented in the text only, even if one disagrees with the material.

Check each answer after selecting it. Are all parts of the question answered? Is the answer contained in the text?

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TEXT BOOK NOTETAKING

Although notetaking for text books is discussed at length in the Notetaking page, some of the main ideas are summarized here. Writing summaries from text book material is covered elsewhere in this page.

There are at least four reasons for taking notes on text book material. It reinforces learning of the information. It encourages selection of the main ideas and details in order to visualize the overall organization of the text. It creates a shortened version of the text with all the essential information recorded for future exam review. It helps to improve concentration.

Five of the most important tips for textbook notetaking are listed below.

- Finish reading before taking notes.
    - Students should not read the entire chapter, but should read through long paragraphs or headed sections of text before recording notes. If one waits until the end to write notes, he/she may forget some of the important ideas and supporting details. But by reading small sections at a time, one has enough information from which to choose the most important ideas, without losing track of the flow of ideas. The most important concepts are reinforced before the reader moves on to the next section, making learning a cumulative process.
- Be very selective about what is recorded.
    - It takes practice to learn how to select the most important ideas in a reading, but remember that the goal of notetaking is to produce a shortened version of the text. Be selective so that only the basic concepts are recorded. In order to decide what information should be noted, skim or preview the text first or see what the instructor has emphasized in the lecture.
- Use your own words.
    - Because the chances of comprehending and remembering information are greatly improved when the work is one's own, take the extra time to paraphrase important material. The time spent trying to understand a passage and record the main ideas in one's own words is the single most important investment of time a reader can make.
- Work quickly and efficiently.
    - Notetaking does not have to be painful or time consuming. Read, think, write, and move on. The rewards will come at test time.
- Use organizational strategies.
    - Notes should be organized according to one of the strategies discussed in the Notetaking page or in the Organization page. The Cornell method is a good choice because it allows one to organize and to recall actively and quickly the main points of the text.

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GROUP ACTIVITY FOR CONTENT READING

An example of cooperative learning with the goal of reading new content area material is outlined by Mickel (1993). This strategy is designed to be implemented by a course instructor, although it may be used with the guidance of tutors or it may be modified for use by students. Depending on the length of the assigned readings, this activity could take one to several days to complete. It may be helpful to introduce the strategy section by section to allow for maximum comprehension of expectations.

The eleven-step reading comprehension activity is described below.

1. Divide the class into groups of four students.
    - If possible, each group should include one above-average student, one below-average student, and two average students.
    - Assign each student an arbitrary number (1 through 4), regardless of ability.
2. Designate the pages in the text book to be used in the cooperative learning activity.
3. Assign vocabulary tasks.
    - Assign student #1 of each group the task of introducing the new vocabulary words in the reading to other members of his or her group.
    - Student #1 lists each new term and solicits definitions from other members of his/her group. If none are able to define the word correctly, that word is marked.
4. Assign reading tasks.
    - Assign student #2 of each group the task of reading the new material aloud to his/her group while the other members follow along.
    - Any student is free to emphasize important information during this process.
5. Assign questioning tasks.
    - Assign student #3 of each group the task of asking the group questions based on the oral reading.
    - Student #3 should keep track of his/her group's answers.
    - If desired, the instructor may develop these questions ahead of time to insure that students cover the main points of the reading.
6. Assign follow-up tasks.
    - Assign student #4 of each group the task of directing a follow-up activity that reinforces the general and specific concepts of the reading.

- Instructor guidance may be needed here as well.

7. Recombine the groups and conduct a review.

   - Reassemble the class into one large group in order to review the results of each subgroup.
   - This allow the students to assimilate their new knowledge.
   - Students #1 present the words that the their groups knew and did not know.
   - Students #3 present their groups' answers to the review questions.
   - Students #4 present their groups' follow-up results.

8. The instructor evaluates reading comprehension.

   - The instructor may use an evaluative activity to assess the student's mastery of the new material.
   - The instructor should also evaluate each individual's participation within his/her group.

9. Students evaluate the group activity.

   - Each student evaluates the cooperative learning activity.
   - The following form allows the student to assess his/her own performance as well as those of the other group members.
   - Ratings of 1 or 5 require explanations on the back of the form.
   - All forms are confidential and only seen by the instructor.
   - Periodic and unannounced use of this form of evaluation keeps students "on their toes."

GROUP EVALUATION

- Your Name:

- Date of Presentation:

- Circle your ratings for yourself and for each member of your group.

- Rate group members according to their contribution in preparation for the presentation and fulfillment of the assigned responsibility in the cooperative learning group.

- Ratings of 1 or 5 must be described on the back of the form.

5	4	3	2	1
Very good	Good	Satisfactory	Unsatisfactory	Poor

NAME	RATING

_____	5	4	3	2	1
_____	5	4	3	2	1
_____	5	4	3	2	1
_____	5	4	3	2	1

_____

10. The instructor observes and evaluates the entire group.
    - The performance of the entire group is evaluated by the instructor as he/she moves among the groups as they work.
    - All group members receive the same grade based on their ability to work together efficiently.

11. The instructor evaluates reading comprehension using traditional tests.
    - Traditional tests provide a fourth means of evaluating the cooperative learning activity.
    - The exam may be composed of the main points brought out by the groups.

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STUDY GROUPS FOR READING

As discussed in the Group and Cooperative Learning page, student study groups are an effective strategy for many academic tasks, including exam preparation and notetaking. Study groups may also be used in a variety of ways for reading assignments. Four examples are discussed here.

- One approach is to form a study group for completing long or complex reading assignments. Each member of the study group is assigned a section of the text. He/she carefully reads that section and records the most important ideas and supporting details in a flowchart, outline, creative map, or another organizational tool. Then the other sections of text are quickly skimmed. The group mets to exchange notes on each section and to analyze the entire reading. They review the author's purpose, the purpose of the text, the main ideas, and supporting details to tie the sections together. They consider how the text relates to lecture material, to other reading assignments, and to course objectives.

- In another scenario, study group members meet to analyze the assignment as a group. Each student has carefully read the entire text ahead of time. The group determines the author's purpose and motivation for writing the text. They identify the main points and supporting details. They discuss the visual aids used by the author. Individuals share past experiences and prior knowledge related to the subject. Information is organized in table, graphic, outline, or list form, and copies are run for all group members.

- A third study group approach involves students reading the assignment on their own and preparing review questions based on the main points and supporting details of the text. Members meet to

exchange and answer questions. The review questions may be used to quiz the other members, or they may be answered by the team. Answers are xeroxed and distributed to all contributing group members.

- The fourth approach involves working with a study buddy. After reading the entire assignment, one student explains the information to his/her partner. The buddy ensures that all main points have been covered and that the descriptions are accurate. Or, the partners can take turns describing one section of text at a time.

Study groups for reading assignments help to clarify the main ideas of a reading and to ensure comprehension of the text. Paraphrasing skills and memory are enhanced. The information generated by the group may be used later for exam preparation. Just remember to select suitable students for the study group.

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GRAPHIC ORGANIZERS FOR MERGING READING AND COOPERATIVE STRATEGIES

Graphic organizers use visual images to organize information. Avery and Avery (1994) present an approach for improving reading comprehension by using graphic organizers in cooperative learning activities. Though intended for use by high school literature students, the approach may be modified for readings at other levels and for other subjects.

Cooperative learning for reading tasks is viewed as beneficial by the authors for several reasons.

- "Through positive peer pressure, group members motivate each other to improve reading skills."
- "Cooperative learning promotes interest in reading and understanding of literature as group members defend interpretations and synthesize ideas to arrive at common themes."
- "Cooperative learning strategies can be used throughout the learning task: to focus prereading activities, to increase processing while reading, and to add punch to closing activities" (Avery and Avery, 1994, p. 689).
- "Cooperative lessons ... provide a paradigm for success and thereby a means for developing student self-esteem. They also help students to become emotionally as well as academically involved in reading. Consequently, cooperative strategies that build reading comprehension also make reading more inviting to students" (Avery and Avery, 1994, p. 690).

Strategies that combine graphic organizers and group activities for the purpose of improving reading comprehension may be used before reading, during reading, or after reading, as explained below.

Before-Reading Cooperative Learning Strategies

- Vocabulary

- Meaningful instruction of new vocabulary may be accomplished in a group setting.
- Divide the class into groups.
- Before reading the text, students study some number of difficult or new words found in the selection. The number of words will depend on the length of the text, the level of difficulty, and time constraints.
- Each student in each group is responsible for recording all the words and their definitions on his/her own paper. Refer to the vocabulary strategies in this page for ideas on defining new words.
- Then the students are asked to draw a picture illustrating some relationship between two of the terms. Students in each group should use different pairs of words.
- Each student then explains his/her visual representation to the rest of his/her group.
- Evaluation may take several forms: monitoring of group activity, individual evaluations by other group members, or quizzing all students on all words.

- KWL Strategy

  - The KWL strategy, discussed in detail later in this page, may be used to trigger prior knowledge and interest before a text is read. This approach elicits student feedback on what they **k**now already about the subject, **w**hat they want to learn, and what they did **l**earn.
  - Divide the class into groups.
  - Distribute to all students a graphic organizer with three columns labeled "What you know," "What you think you'll learn," and "What did you learn."
  - The first two columns are completed in a cooperative effort by each group, with each student taking notes.
  - After a certain amount of time, students are randomly called upon to contribute an answer to the ensuing class discussion.
  - Following the class discussion, students work individually to read the selection.
  - Evaluation is accomplished by asking each student to complete the third column of the handout.

During-Reading Cooperative Learning Strategies

- Visual Aids

  - Students can work in groups to develop one of a number of visual aids based on the text while they are reading.
  - Visual organizers include time lines, sequence of events chains, mind maps, flow charts, outlines, matrices, word maps, hierarchical maps, spider or web maps, herringbone maps, compare-contrast diagrams, opinion chart, and cycle of events charts. These are described and illustrated in the Organization page.

  - Divide the class into groups of three students.
  - Each member reads one-third of the assignment, taking notes on key ideas and supporting details.
  - Then the members work together to develop the visual aid. All group members should draw the graphic organizer.
  - Class discussion and presentation of results follow.

- Evaluation may involve writing a summary of the entire reading or quizzing.

- Cooperative Questioning

  - For long passages of text or text divided into sections, pose questions to encourage comprehension. The probing questions are provided by the instructor.
  - After reading a passage or section of text and posing a question, divide the class into small discussion groups of two or three students. They work as a team to generate answers, which are recorded on a worksheet or in graphic form.
  - One member of each group is selected to share the group's responses with the rest of the class.
  - The next section or passage of text is read, and new groups are formed to answer the instructor's question.
  - Repeat the process until the entire text has been read, insuring that all students are given an opportunity to participate in the oral discussion.
  - Evaluation may take the form of grading individual presentations or a quiz.

Post-Reading Cooperative Learning Strategies

- Visual Aids

  - Visual aids may be developed by groups of students after the text has been read by each student individually.
  - Again, there are a variety of graphic organizers that may be used. The instructor may choose to have all groups complete the same form of visual aid, or he/she may ask different groups to complete different graphic organizers for the text.
  - Have students complete the reading assignment. Then divide them into groups.
  - Distribute copies of the visual aid template(s) to all students. In other words, have the outline of the visual aid(s) predrawn and copied so that students need only arrange and fill in the information. Using templates is especially helpful if students are not well versed in the graphic organizing strategies.
  - Group members work as a team to organize and fill in the pertinent information on the visual aid(s).

- Controversial Readings

  - Readings on controversial or polemic issues are fertile ground for incorporating graphic organizers in group activities. Cooperative completion of visual aids for position texts provides a solid foundation and a bridge to other class activities like debates and panel discussions.
  - Introduce the controversial topic with a resolution or question.
  - Divide the class into groups of four students.
  - Distribute copies of text to each group. One article should present the affirmative side of the issue and one should argue the negative side. Using two articles helps build synthesis skills.
  - One pair of students in each group reads and annotates the first article, and the second pair does the same with the second article.
  - Then each group compares notes and selects six or eight major issues from the articles on which to focus.

- The issues are incorporated into a graphic organizer such as a flowchart, comparison-contrast diagram, or opinion chart.
- Students may be evaluated on the organizer or their collaborative skills.

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DISCUSSION CONTINUUM

Stephens and Brown's (1994) discussion continuum is one way of actively involving students in reading tasks. It encourages students to make more extensive and probing connections among their personal experiences and backgrounds and the ideas, concepts, and issues presented in the text. Enhanced internalization of the text material improves student performance in class discussions and on written assignments like papers and exams.

According to the authors, one advantage of the approach is that it involves all students in classroom discussions; even shy or introverted students who tend to avoid class participation are drawn into discussions. Another benefit of the discussion continuum is that it encourages student interaction with the text. By forcing students to take and support a position on a subject, the strategy helps to develop critical thinking skills. Finally, the discussion continuum serves as an effective springboard to other activities, such as writing research papers or position papers.

Initially, the discussion continuum requires guidance by the instructor or a facilitator. With practice, however, students may create their own opposing statements and conduct their own discussions within study groups.

The discussion continuum strategy is a four-step process.

1. Identify the issue.
    - The significant controversy or polemic in the reading is identified by the instructor. It is formulated into two statements, one affirmative and one negative.
    - The two statements are written on the board or overhead projector and a continuum is draw between these two end points.
    - Examples of statements are "Animal testing is Psychology is unethical" versus "Animal testing in Psychology is ethical" and "Species arise by divine intervention" versus "Species arise by the processes of evolution."
2. Students take positions.
    - Students are asked to take a stand on the issue. It may fall anywhere on the continuum. They write their initials on that portion of the continuum corresponding to their opinion.
3. Class discussion of opinions.
    - Students explain and defend their positions during the class discussion. They should make reference to specific aspects of the reading.

- All students are be given the chance to speak before others speak again. It is important to instruct students to avoid personal attacks and to listen respectfully to the opinons of others.
- Until the discussion gets rolling, it may be necessary to call on students with opposing views to speak alternately.
- Students may decide to change their positions as a result of the discussion.

4. Follow-up activities.

    - Several follow-up activities may be planned.
    - Postreading of additional references may be assigned.
    - The instructor may assign writing assignments such as position papers or essays based on the text.
    - Students who changed their opinions may be asked to share their views.
    - Students with opposing opinions may interview each other.

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BUILDING ACTIVE READERS THROUGH DEBATE

To spark student interest in and to create enthusiasm for the issues presented in readings, Schauer and Beyersdorfer (year) contend that classroom debate is an effective strategy. Debate fosters critical thinking skills and makes reading a more active process. Controversies or polemics exist in nearly every subject, and they lend themselves to group activities like debate.

"Students very quickly learn that the key to being a successful debater is to listen actively in order to attack the arguments of their opponents and to speak logically and clearly to get their own arguments across. Debate motivates adolescents because it fits naturally with their developmental need to challenge the thinking of others and allows them to work with their peers in a cooperative way" (Schauer and Beyersdorfer, year, page).

In order for debate to be an effective classroom activity, the instructor must insure that students are provided with enough reading materials to adequately introduce them to a topic. It also helps if the topic is related to students' prior knowledge and schemata so that they may draw from that information as well. It may be necessary to assess students' information base before planning debate activities.

Suggested steps for building active readers through debate are provided below.

1. Select a controversial or polemical issue.

    - The instructor first selects a controversial or polemical issue in the reading that will serve as the focus of debate. The issue should be a dominant theme of the reading.

2. Read the text.

    - The text could be read in class if it is relatively short. For longer materials, instruct students to complete the reading outside of class.

3. Discuss the reading in class.
    - Class discussions focused on the dominant theme of the text precede the debate. Students should avoid stating opinions and taking positions at this stage, but should recap the main ideas of the text.
4. State the proposition.
    - The instructor states a short proposition based on the controversial issue and the major theme of the text. The pro and con aspects should be clear and obvious. Write the proposition on the board or overhead projector.
5. Divide the class into groups.
    - Students are assigned to two teams representing the pro or con side of the argument, or they can take the side they personally support. The two teams are further divided into small groups.
6. Search for evidence in the reading.
    - Each group searches the text for evidence supporting its position. "Evidence-gathering worksheets" with columns for page numbers, quotes, and comments help students to organize their thoughts and structure their arguments.
7. Develop opening statements.
    - The pro and con teams reassemble to discuss the group findings. Two or three spokespersons for each team use the evidence to develop a 3-minute opening statement outlining the position and supporting evidence. Encourage students to cite page numbers and specific passages of text.
8. Debate the issue.
    - Arrange desks or chairs so that one team faces the other. The instructor acts as moderator, or a student may be selected to do so.
    - Explain the debate schedule. Only the spokespersons can speak during the opening and closing statements, as these are supposed to be structured speeches. Any team member may contribute to the rebuttal with permission from the moderator.

Affirmative (pro) opening statement Negative (con) opening statement	3 minutes 3 minutes
Group time to formulate rebuttal	10 minutes
Affirmative rebuttal Negative rebuttal	2 minutes 2 minutes
Group time to formulate closing argument	10 minutes
Affirmative closing argument Negative closing argument	2 minutes 2 minutes

9. Evaluate the debate.
    - Arguments presented by both sides are documented on the board or overhead by the instructor or an appointed student. The team with the most arguments not effectively eliminated by the other team is the winner.

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NONTEXT READING COMPREHENSION

Most of the reading comprehension strategies in this stack are intended for use when reading text books, journal articles, literary works, and other "traditional" reading tasks. However, comprehension may fail when reading homework directions, laboratory instructions, or exam directions. In these situations, other strategies are needed.

Lack of understanding when reading assignment instructions often results from one of two things: the use of unfamiliar terms or the use of complicated sentence structures.

- Vocabulary strategies that use ancillary materials (e.g. dictionaries) may be effective for homework or lab work, but are not feasible for exam directions. For exams, try other vocabulary strategies such as analyzing affixes and roots or considering contextual clues. In addition, it is important that one be familiar with the meanings of words that often appear in exam questions. One must know what the instructor is looking for when he/she asks one to "describe," "explain," "discuss," or "list" information (see the Essay Tests section of the Test Taking page for more information).

- When one encounters complicated sentence structures, try the following strategies. First, break long sentences into smaller ones; commas are usually good places for separating ideas. Then

number each section to make sure all directions are followed. Another approach is to underline all important words or phrases, "answer one of two" or "answers must be typed" for example.

But above all, ASK! The most effective approach to ambiguous directions is to seek clarification from the instructor. He/she may reword unclear sentences or define words if you just ask.

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READING FOREIGN LANGUAGE TEXTS

Reading foreign language texts is facilitated by using one or more of the following strategies.

- Use a foreign language dictionary to translate unfamiliar words.
- Compile a list of new words and their translations, especially if the words are used often. Add to the list after each reading assignment. Keeping a list reduces the time spent looking up words in the dictionary.
- Recognize and use cognates, which are words in different languages that have the same root and therefore resemble each other. Examples of Spanish-English cognates are "confederacion" and "confederation" and "por exemplo" and "for example."
- Know when is it appropriate to skip unknown or unfamiliar words.
- Use context clues to guess at the meanings of unknown words.

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READING SCIENCE MATERIAL

Several strategies for improving comprehension of science readings are described in the General Science page of the Content-Specific Learning Strategies main stack.

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STAYING ALERT WHILE READING

The following tips may help students stay alert while reading assignments. For more ideas, refer to the strategies in the Attention and Listening page of the General-Purpose Learning Strategies main stack.

- Select an appropriate place to read. Eliminate all external distractions.
- Get motivated and develop an interest in the subject matter.
- Get adequate rest so you are not tempted to fall asleep. Eliminate other internal distractions.
- Try the SQ3R strategy or a similar strategy for reading.
- Work for short intervals of time and take breaks between intervals.
- Mix up your subjects or assignments to avoid boredom.
- Reward yourself for completing each reading task.

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SUMMARY WRITING

One strategy for improving reading comprehension is to write summaries. Summaries function to reduce the amount of information to be remembered and to organize the information in a way that aids understanding and remembering. The following rules and steps for summary writing are quoted from REFERENCE. Summarizing is also covered in the Writing and Proofing page.

Four rules of summary writing (REFERENCE) are as follows.

- Collapse lists.
    - If you see a list of things, try to think of a word or phrase as a name for the whole list.
    - For example, if you saw a list like eyes, ears, neck, arms and legs, you could substitute 'body parts.' Or if you saw a list like ice skating, skiing and sledding, you could use 'winter sports.'
    - In short, substitute a superordinate for a list of items or actions.
- Use topic sentences.
    - Often authors write a sentence that summarizes a whole paragraph. It is called a topic sentence or a main idea.
    - If the author gives you one, you can use it in your summary.
    - Some paragraphs do not have explicit topic sentences or main ideas. You may have to invent one for your summary.
- Get rid of unnecessary detail.
    - Some text information can be repeated in a passage. The same thing can be said in a number of different ways, all in the same passage.
    - Other text information can be unimportant or trivial.
    - Since summaries are meant to be short, you should delete trivia and redundancies.

- Collapse paragraphs.
    - Paragraphs are often related to one another.
    - Some paragraphs explain one or more other paragraphs. Other paragraphs just expand on information presented in previous paragraphs. Some are more necessary or important than others.
    - Decide which paragraphs should be kept, which can be deleted and which can be joined with others.

Five steps of summary writing (REFERENCE) are provided below.

1. Make sure you understand the text.
    - Ask yourself, 'What was this text about?' and 'What did the author say?'
    - Try to say the general theme to yourself before you begin to summarize the text.
2. Look back.
    - Reread the text to make sure you got the general theme right.
    - Also reread to make certain that you really understand what the important parts of the text are.
    - Star or mark the important parts of the text.
    - Now use the four specific rules for writing a summary.
3. Rethink.
    - Reread a paragraph of the text.
    - Try to say the theme of that paragraph to yourself.
    - Is the theme a topic sentence? (Main idea?) Have you marked it?
    - Or is the topic sentence missing? If it is missing, have you written one, in the margin, for example?
4. Check and double check.
    - Did you leave in any lists? Make sure you don't list things out in your summary.
    - Did you repeat yourself? Make sure you didn't.
    - Did you skip anything?
    - Is all the important information in the summary?
5. Polish the summary.
    - When a lot of information is reduced from an original passage, the resulting concentrated information often sounds very unnatural. Fix this problem and create a more natural-sounding summary.
    - Adjustments may include but are not limited to: paraphrasing, insertion of connecting words like 'and' or 'because,' and the insertion of introductory or closing statements.
    - Paraphrasing is especially useful here, for two reasons: It improves your ability to remember the material and it avoids using the author's words, otherwise known as plagiarism

[Paraphrasing and plagiarism are discussed in detail in the Writing and Proofing page of the General-Purpose Learning Strategies main stack].

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CREATING INTEREST

Lack of comprehension may be attributed to disinterest in the material being read. Complete details on creating interest in readings and other materials are covered elsewhere (see the Creating Interest section of the Motivation page), but the basic ideas are summarized below.

- Novelty.
  - Make the reading task more novel by role playing or pretending to be the instructor.
- Variety.
  - Supplement the reading assignment with other sources of information about the subject: other books, magazines, journals, newspapers, computer bulletin boards and news groups, movies, television programs, and radio shows.
- Relevance.
  - Consider how the readings are relevant to your own life. How do they relate to past experiences?
- Personalize.
  - Make the material personal by linking it to beliefs and matters of personal concern.
- Use the information.
  - Actively use the information by thinking, writing, and talking about it.
- Apply the information.
  - Make connections between the readings and the lecture material. Look for relationships between the readings and other courses or one's job.
- Work with others.
  - Work with other students to complete and/or review reading assignments. See the section on Study Groups for Reading in this page for more specific ideas.

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IMPROVING CONCENTRATION

General strategies for improving concentration are discussed in the Attention and Listening page. Most may be applied to reading tasks. The strategies are listed here, but more details may be obtained by referring to the Concentration, Staying Alert While Reading, Eliminating External Distractions, and Eliminating Internal Distractions sections of the Attention and Listening page.

- Index Cards
    - Lack of concentration often results in regression, or forgetting what one has read. To reduce the incidence of regression, use 3 x 5 index cards (or a ruler, pencil, finger) to move line by line through the text. Or, use index cards to cover what has been read already and realize the number of times the card must be moved to remember what has been read.
- Eliminate Distractions
    - Eliminate external distractions by choosing an appropriate place to read: quiet, average temperature, comfortable but not too comfortable. Avoid tv's, radios, conversations, windows, and doors. Eliminate internal distractions by motivating oneself, creating interest in the subject, and engaging in encouraging self-talk.
- Attend to Health
    - A balanced diet and adequate rest are important in maintaining good health and being able to concentrate on reading assignments.
- Organization and Time Management
    - Avoid being distracted by other assignments by getting organized and managing time efficiently. It is easier to concentrate on reading when one is not worried about other tasks or activities. Reduce day dreaming about things you want to do by setting aside time to actually do them. Clear your mind by compiling a list of things to do after completing a reading assignment.
- Be Task Oriented
    - Understand the purpose, instructions, and expectations of the reading task before getting started in order to better stay on track.
- Use Rewards
    - Be sure to reward productivity. Set goals for completing reading assignments and then treat yourself for meeting those goals.
- Mix It Up

- Reading for short intervals of time helps one to remain focused on the task. Read for 20-30 minutes, take a break, and read for another 20-30 minutes. Alternate between different subjects to maintain interest and concentration.

- Keep Active

  - Passive readers use only their eyes while reading. They may be less able to concentrate fully on a task than active readers who use more than one sense. Take notes while reading (see the Text Book Notetaking section of this page for ideas). Read aloud to yourself or listen to audio recordings of reading material (refer to the Books on Tape section of this page).

- 60-Second Synopsis Strategy

  - This is a group strategy designed to improve concentration and reading comprehension (Huffman, 1992-1993). Groups of 3-4 students are given a reading assignment. All members of the group do the reading and then compile an annotation of the main points. Results are presented to the rest of the class orally. Complete details on the 60-second synopsis strategy are found in the Attention and Listening page of the General-Purpose Learning Strategies main stack.

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IMPROVING MOTIVATION

Completion of reading assignments sometimes requires that one work to maintain a high level of motivation. Several tips for improving and maintaining motivation while reading are outlined below. For a more detailed discussion of motivation strategies, refer to the Motivation page of the General-Purpose Learning Strategies main stack.

- Be Task Oriented

  - Understand the purpose, instructions, and expectations of the reading task before getting started in order to maintain motivation.

- Consider Goals

  - Relate completion of the assignment to short-term goals, such as fulfillment of course objectives and requirements, and to long-term goals, like graduating from school.

- Work with Others

  - Develop a support system for completing difficult or uninteresting reading tasks. Work with other students, taking turns reading, summarizing, and "teaching" the reading material. Enlist the motivational support of family members, friends, coaches, or instructors.

- Relevance

- Consider how the reading is relevant to the course, to your academic career, or to your life. Why is the information valuable? How will you use it in the future? How does it relate to personal experiences and beliefs?

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GENERAL APPROACH TO UNFAMILIAR VOCABULARY WORDS

From text books to journal articles to exam questions, students are commonly faced with vocabulary words they do not understand. In such situations, several options are available to students for learning the meanings of unfamiliar terms. The following approach is suggested by Twining (1991).

1. Listen to the Word
    - The first strategy to try is pronouncing the unfamiliar word aloud and listening for something familiar in the word as you speak and listen. Sometimes just saying the word aloud and listening carefully will trigger one's memory of the word's meaning or a similar word.
2. Consider the Context
    - Next, reread the sentence containing the unfamiliar word, or perhaps a few sentences preceding or following, to determine if the meaning can be derived from the context. More specific details about context are given in the Predictions Based on Context section of this page.
3. Decipher
    - If no clues may be gleaned from the context of the word, try deciphering the word itself based on suffixes, prefixes, and root words within the unfamiliar term. More specific details about deciphering are given in the Word Elements section of this page.
4. Dictionaries
    - When deciphering and context clues are ineffective, use a dictionary to learn the meaning of an unfamiliar word. A standard dictionary is often sufficient for finding most words. Otherwise, one may have to consult a content-specific dictionary (such as for medical terms) or the glossary of a text book.
    - If a dictionary is used, make an abbreviated note of the definition in the margin of the text near the word. That way, if the word is encountered again, one need not look it up again.
    - Because consulting dictionaries can be time consuming and may interfere with one's comprehension of the text, try to use them sparingly.
    - If one is unable to use a dictionary during an exam, try asking the instructor for definitions of unfamiliar words, especially if the words are not content related.

5. Skip the Word

    - It may be most efficient to skip an unfamiliar word as long as it will not result in confusion or lack of comprehension of key sentences or entire paragraphs. If the word seems inconsequential, just skip it.

6. Experience

    - Remember that unfamiliar words are ultimately understood through a variety of experiences. Therefore, to steadily improve one's word knowledge, read frequently with the intent to learn new words.

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PREDICTIONS BASED ON CONTEXT

When faced with an unfamiliar word, students often blindly guess at its meaning. A more effective approach is to consider the context of the word in order to locate clues for predicting the meaning of the word.

Contextual Clues

A number of contextual clues may be used to determine the meaning of an unfamiliar word (D. Applegate, CAL).

- Type of Word: Is the word used as a noun, verb, adjective, adverb, etc.?

    - Nouns are often preceded by articles such as "a," "an," or "the"
    - Nouns may be preceded by adjectives like "big," "three," or "green"
    - Nouns are often found at the beginning of a sentence or after prepositions such as "to," "at," "through," and "during"

    - Verbs often end in "-ed" or "-ing"
    - Verbs are often found in the middle of a sentence

    - Adjectives modify nouns and are usually found in front of nouns
    - Adjectives often end in "-able," "-ous," "-er," and "-est"

    - Adverbs modify verbs and are often found in front of or after verbs
    - Adverbs often end in "-ly"

- Surrounding Words: Other words in the sentence may provide clues to the meaning of a word.

    - The noun(s) in a sentence may provide a clue(s) to the meaning of the verb. For example, "the *psychic* used the *crystal ball* for **divining** the future."

    - The verb(s) in a sentence may provide a clue(s) to the meaning of a noun. For example, "the children *swam* in the clear blue **lagoon**."
    - Nouns and verbs may provide clues to the meaning of another word in a sentence. For example, "Justin *recorded* his *travel plans* in his **itinerary**."

- Verb Tense: Is the verb past, present, or future tense?

    - A past-tense verb refers to events that have already occurred in the story or in history.
    - A future-tense verb refers to events that have not yet occurred or will occur in the future.

- Singular and Plural: Does the word refer to one or more than one?

Examples of Using Context Clues

Four examples that apply the principles of context clues are provided below (D. Applegate, CAL).

- "He was seated, and the dead were around him in the house of Hades with its wide **portals**, some were seated and some were standing, as each asked the judge for his decision" (Homer, *The Odyssey*).

    - the word is used as a noun
    - the thing is found in a house
    - the word is plural, so there is more than one of them in a house
    - portals could be walls, windows, or doors
    - walls are usually not described as being "wide" so portals are probably windows or doors
    - the dictionary definition of portal is a doorway, gate, or entranceway

- "Zeus alone is to blame and no one else, because he hated the Danaan host so **vehemently**, and brought fate upon you" (Homer, *The Odyssey*).

    - the word is used as an adverb
    - the word modifies the verb "hate"
    - the word "hate" implies strong emotion, as opposed to a word like "dislike" or "disdain"
    - vehemently may mean strongly or vigorously
    - the dictionary definition of vehemently is forcefulness of expression, strength and vigor

- "Don't depraise death to me, Odysseus. I would rather be plowman to a **yeoman** farmer on a small holding than lord Paramount in the kingdom of the dead" (Homer, *The Odyssey*).

    - the word is used as an adjective
    - the word describes the noun "farmer"
    - the farmer has a "small holding" of land or a small farm
    - the word may mean that the farmer is part-time or works on his/her own
    - the dictionary definition of yeoman is independent

- "...we care nothing for your **prognostications**, respected sir; they will come to nothing, and only make you more of a nuisance than you were" (Homer, *The Odyssey*).

- the word is used as a plural noun
- the word has something to do with the future since "they will come to nothing" or will not amount to anything
- there is something negative about the word because it makes someone a nuisance
- the word may mean threats or predictions
- the dictionary definition of prognostications is predictions

Word Context Group Activities

Poindexter (1994) outlines a group activity for introducing students to the skill of predicting word meanings based on context. The strategy is useful because it actively involves students in learning word meanings, it enhances student interest and motivation, it fosters cooperation among students, and it allows students to evaluate first-hand the benefits of predicting word meaning based on context versus guessing word meanings.

The strategy is intended for use in learning general vocabulary, but it may be modified to incorporate context-related terms that often appear, without definitions, in professional journal articles. After being introduced and illustrated by a facilitator, the strategy may be used by students on their own. Slightly modified directions for Poindexter's approach are given below.

1. Select the reading material.
    - The facilitator selects a portion of text with which the strategy is explained and exemplified. The text may be a book chapter or a journal article.
2. Identify vocabulary words.
    - From the selected reading, identify vocabulary words that the students may have trouble defining. The number of words chosen will depend on the amount of time slated for the group activity, the length of the text, and the level of difficulty of the text.
3. Design a worksheet.
    - Design a worksheet that the students can complete later in class. It should have four columns: Unknown Word, Guessed Meaning, Context Meaning, and Dictionary Meaning. Reproduce the worksheet on the board or overhead projector.

Unknown Word	Guessed Meaning	Context Meaning	Dictionary Meaning
zephyr	* small animal * universal goddess * cow that lays eggs	* sound * small animal * breeze	a soft, gentle breeze

4. Form groups of students.
    - Break the class into teams of three to four students, depending on the size of the group.

Distribute worksheets to each student.

5. Introduce the target words.
    - Introduce the selected vocabulary words by writing them in the Unknown Word column of the worksheet on the board or overhead. Instruct the students to copy the words on their own worksheets, skipping a few lines between each.
6. Generate guessed meanings.
    - Working as a team, the students generate lists of guessed meanings for each of the vocabulary words. Each student may record the meanings, or one student may record for his/her entire team. This brainstorming may or may not be timed.
7. Compile the guessed meanings.
    - The facilitator compiles a complete list of the guessed meanings and records them on the board or overhead. Each group may have a spokesperson, or all students may be given a chance to participate. The facilitator may wish to discuss how students arrived at their guessed meanings.
8. Read the text.
    - The text from which the terms were taken is then read by all students. This may be done silently by each student, aloud by one student volunteer in each group, or by the facilitator for the entire class. Note the vocabulary terms as they are encountered.
9. Generate context meanings.
    - Working again as teams, the students use the reading to develop a list of meanings based on context. These are recorded on the worksheet.
10. Compile the context meanings.
    - The facilitator compiles a complete list of the context meanings and records them on the board or overhead. The facilitator may wish to discuss how students arrived at their context meanings and what clues were used.
11. Consult the dictionary.
    - The dictionary meanings of the vocabulary words are then presented by the facilitator. These definitions may already be recorded (but covered) on the worksheet on the board or overhead, or they may be added as each is discussed.

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WORD ELEMENTS: AFFIXES AND ROOTS

An effective approach to understanding unfamiliar words is to decipher them part by part. The strategy is useful when reading content-specific material as well as when reading test questions, times when dictionaries may not be helpful or available.

To decipher unknown words, one must become familiar with common prefixes, suffixes, and root words. Lists of these word parts are given on the following cards. Knowing what these word elements mean is often helpful in deciphering the meanings of unfamiliar words. Familiarity and proficiency with the word parts come with practice.

It is advantageous for students to become familiar with this strategy because it is very effective when one encounters an unfamiliar word during an exam. In this case, one is not able to consult a dictionary, and the test question may not be long enough to provide adequate context for predicting the meaning of the word. Deciphering word elements may be one's only alternative.

Deciphering unfamiliar terms by considering word elements is a major component of other strategies described in this page: DISSECT strategy and vocab game.

Steps in the deciphering approach are summarized below.

1. Identify the unknown word.

2. Break the word up into smaller parts. Say the word aloud to help detect syllables and word parts. Look for a familiar prefix, a suffix, and/or a root word.

3. Consult the list of word parts to find the meanings of the prefix, suffix, and/or root word. Make up your own list of additional word parts that are specific to the subject you are reading. For example, biology students may need to develop their own list with common suffixes like "-cyst" or "-blast" and prefixes such as "neuro-" and "endo-".

4. Use the word parts to predict the meaning of the word.

5. Check your deciphering against the context of the word.

Common word parts are given in the following tables (Twining, 1991).

Common Prefixes

PREFIX	MEANING	EXAMPLE
ab-	away from	absent
ad-	to, toward	advise, advance
anti- contra-	opposed to	anticrime contradict
auto-	self	autonomy
bene-	good	benevolent
com- con-	together	combine converge
de-	from, away	decline
dis-	negation, opposite	disadvantage
en-/TD>	in, into	engage
ex-	out of	exchange
inter-	between	interstate
mono-	one	monopoly
multi-	many	multicolor
non- un-	not	nonsense unprepared
pre-	before	preregister
re-	back, again	return

Common Root Words

ROOT WORD	MEANING	EXAMPLE
act	do, move	active
close	close, end	foreclose
dict	to speak	contradiction
grad	to step	graduation
man	hand	manual
phon	sound	microphone
port	carry	portage
quest	ask	question
script	write	description
temp	mix, time	temporary
volve	to roll	revolve

Common Suffixes

SUFFIX	MEANING	EXAMPLE
-able	capable of	manageable
-al	relating to	rational
-ation	process of	maturation
-ative	nature	formative
-ence	condition	confidence
-ful	full of	beautiful
-ic	pertaining to	prolific
-ism	practice	socialism
-ist	one who does	scientist
-less	without	homeless
-ology	study of	biology
-ous	having, full of	wondrous

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ANTONYMS, SYNONYMS, AND RELATED APPROACHES

When learning new vocabulary, teachers and students often use context and word elements strategies. However, there are alternate approaches to learning new terms that are just as effective. Four such strategies make use of antonyyms, synonyms, absolute opposites, and analogies. The approaches may be used individually or they may be couched within other strategies, such as the vocab game described elsewhere in this page.

- Antonyms are words that are opposites of another word. For example, some antonyms of sad are happy, joyous, felicitous, and glad.
- Synonyms, on the other hand, are words that are similar in meaning to another word. For example, petite, tiny, low, small, and stubby are synonyms of short.
- Absolute opposites are similar to antonyms, but there is only one exact opposite for each word. There are no varying "shades" or senses of difference between the words. For example, light, bright, pale and fair are antonyms of black, but white is the absolute opposite.
- Analogies involve comparing the meaning of a word to another word with similar meaning. For example, a Jewish synagogue is like a Christian church.

Two examples that apply these approaches to learning vocabulary are provided below (D. Applegate, CAL).

- To learn the vocabulary term "vehemently"

- . . . introduce antonyms by saying "vehemently is not like softly."
- . . . introduce synonyms by saying " vehemently is like strongly or forcefully."
- . . . introduce the absolute opposite by saying "vehemently is the exact opposite of slightly."
- . . . introduce an analogy by saying "when someone speaks vehemently, he/she is speaking very strongly and forcefully, like a minister passionately giving a sermon about which he/she feels very strongly."

- To learn the vocabulary term "armoire"

  - . . . introduce antonyms by saying "an armoire is not like a desk, a table, or a chair."
  - . . . introduce synonyms by saying "an armoire is like a cabinet or wooden closet."
  - . . . introduce an analogy by saying "nowadays most people hang their clothes in built-in closets, but in the past there were no built-in closets so large pieces of wooden furniture called armoires were used for hanging clothes."

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LINCS STRATEGY

The LINC strategy was discussed in the Memory page as an instructional routine teachers use to facilitate students' memory of concepts and associated facts. The LINCS strategy, on the other hand, is different in terms of its purpose and steps.

LINCS is a task-specific strategy students use to learn vocabulary (REFERENCE). As such, the strategy is useful in improving reading comprehension in those cases when vocabulary words are used repeatedly in the readings.

The steps in the LINCS strategy, which may be used by students themselves or with the help of a facilitator, are outlined below.

- **L**ist the parts you need to know.

  - Identify a term you need to know.
  - Analyze the definition of the vocabulary word.
  - Identify the most important parts of the definition.
  - List the key parts of the definition you need to remember on a study card.

- **I**magine a picture.
  - Create a picture in your mind of the term's meaning.
  - Describe the image using real words.

- **N**ote a reminding "sound-alike" word.

  - Think of a familiar word that sounds like the new term or part of the new term.

- **C**onnect the terms in a story.

    - Make up a short story about the meaning of the term that uses the sound-alike word.
    - Create an image of the story in your mind.

- **S**elf-test.

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DISSECT STRATEGY

DISSECT is a word identification strategy that combines several of the strategies covered in the preceding paragraphs. The strategy, developed by Deshler and associates (year), emphasizes the systematic analysis of a word using context and word element clues.

This vocabulary identification strategy may be introduced to individual students or to groups by a facilitator. The instructor models the strategy and provides sample words with which the students may practice. Students should be encouraged to think aloud while learning the strategy. After they gain proficiency, students may use the strategy on their own or with study groups.

DISSECT may be used for learning new vocabulary in general reading assignments and in content-specific texts. The strategy provides a simple mnemonic for remembering a combination of effective vocabulary strategies (Deshler, et al, year).

- **D**iscover the word's context.
- **I**solate the prefix.
- **S**eparate the suffix.
- **S**ay the stem or root word.
- **E**xamine the stem or root word.
- **C**heck with someone.
- **T**ry the dictionary.

An application of the DISSECT strategy is provided below (D. Applegate, CAL).

"The **recurrent** economic crises of past times were totally unnecessary and are not now permitted to happen, but other and equally large **dislocations** can and do happen without having political results, because there is no way in which **discontent** can become **articulate**" (From George Orwell's *1984*).

- recurrent
    - Discover the context - the context indicates that recurrent describes economic crises or

disasters and the context suggests that they were not good
    - Isolate the prefix - the prefix is "re-" which means again or back
    - Separate the suffix - this word has no suffix
    - Say the stem or root - the root word is "current"
    - Examine the stem or root - "current" means happening now or flowing
    - Check with someone - you and your study partner decide that the word is not related to flowing, like a river, but it may mean happening again and again
    - Try the dictionary - the word means occurring repeatedly or returning regularly

- dislocations
    - Discover the context - the context indicates that the word is a plural noun and that they may or may not affect politics
    - Isolate the prefix - the prefix is "dis-" which means opposite
    - Separate the suffix - the suffix is "-ations" which means process of
    - Say the stem or root - the root word is "loc"
    - Examine the stem or root - "loc" refers to place
    - Check with someone - you and your study partner decide that the word means the process of getting out of place
    - Try the dictionary - the word means the process of putting out from the usual order or the process of disturbance

- discontent
    - Discover the context - the context indicates that the word is a noun
    - Isolate the prefix - the prefix is "dis-" which means opposite
    - Separate the suffix - the word has no suffix
    - Say the stem or root - the root word is "content"
    - Examine the stem or root - "content" refers to satisfaction (accent on last syllable) or that which is contained (accent on first syllable)
    - Check with someone - you and your study partner decide it doesn't make sense for something not to have content (accent on first syllable) so the word means lack of satisfaction
    - Try the dictionary - the word means dissatisfaction or resentment

- articulate
    - Discover the context - the context indicates that the word is used as an adjective to describe discontent
    - Isolate the prefix - the word has no prefix
    - Separate the suffix - the suffix is "ate" which means capable of
    - Say the stem or root - the root word is "articul"
    - Examine the stem or root - the root word means small joint or divide into joints
    - Check with someone - you and your roommate think the word means divided or jointed
    - Try the dictionary - the word means capable of speaking clearly or uniting by forming joints; the best definition in this context is united

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CSSD STRATEGY

The CSSD strategy combines a number of approaches for learning vocabulary words and meanings (Dulin, 19xx). This four-step procedure is outlined below.

- **C**ontext
  - The first step is to consider the context of the word.
  - In what setting does the word appear? How is the word used? Based on the rest of the sentence or paragraph, what should the word mean in orde for the text to make sense?
  - Refer to the Predictions Based on Context section of this page for more details.
- **S**tructure
  - Break the word into smaller parts and look for familiar prefixes, root words, and suffixes.
  - Can you think of other words whose meanings you know that contain the word elements?
  - More information on word elements may be found elsewhere in this page.
- **S**ound
  - Analyze the word phonetically by breaking it into units of sound. Are any sounds familiar?
- **D**ictionary
  - If these methods do not work, consult the dictionary.

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VOCAB GAME

Developed by Ruddiman (1993), the vocab game provides students with a strategy for determining the meanings of out-of-context words through an understanding of morphemes, word parts, and etymology (word origins). Though it requires the intervention of a facilitator, the vocab game is designed to empower students and to encourage student responsibility for learning. And while it is intended for use in a classroom setting of 10-20 students, the strategy could be modified for use by small-sized student study groups.

The vocab game offers many benefits. First, it helps to teach students dictionary skills. Second, the strategy makes learning an active process and it promotes group solidarity and cooperative learning since all students play against the facilitator. Third, because the vocabulary words derive from a variety of sources, students are exposed to and enriched by many subjects. Fourth, the strategy is flexible. It can be modified so there are two teams of students playing against each other, it can be used with content-specific material to reinforce the learning of new vocabulary in a particular subject, and it can be

modified to accommodate different levels of skill or different ages of students. Finally, students usually find the game enjoyable. Vocabulary enrichment and language skills are honed in the cloak of a fun game.

The vocab game is guided by five basic rules (Ruddiman, 1993, p. 400).

- "Each student is responsible for one word each week to be presented on the designated Vocab Day."
- "The word must be from the real world [i.e. not dictionary words and not fabricated language from fantasy or science fiction texts], from something the student has read (magazines, novels, text books) or heard. No proper nouns may be used."
- "The students should be able to tell how the word was used in context and give the source."
- The strategy pits students against the teacher or facilitator.
- A points system is used to tally the game. Points are tabulated by the class as a whole on a running weekly basis. The score starts at zero. The class earns five points for every word the teacher does not know and for every word the students define correctly. The class loses five points if any student fails to bring a word. After so many points are accumulated, say 100, the class is rewarded.

The steps in the vocab game are summarized from Ruddiman (1993).

1. Divide the class into groups.
    - For large classes (over ten students), students are divided into groups of four to six students, depending on the size of the class. Dividing into groups is not necessary when there are ten or fewer students.
2. Discuss and select vocabulary words.
    - Working as small groups (with large classes) or as one group (with small classes), the students take ten minutes or so to discuss the vocabulary words they brought in for the week.
    - As each student presents his/her word, the group uses the dictionary to check its meaning, affixes, root word, and etymology. They also discuss the context of the word.
    - Words that do not meet the rules of the game are eliminated. In large classes, each group selects one word to present to the facilitator.
3. Select a scorekeeper and recorder.
    - Select two students or ask for volunteers to act as scorekeeper and recorder. The former is responsible for writing the running score on a sheet of paper, and the latter is in charge of writing all words, word parts, etymologies, and definitions on the chalkboard or overhead projector during the game.
    - Because these students are unable to participate in the game, shift the responsibilites among students.

4. Present the words.
    - A word is presented by each student (in small classes) or by a representative of each group (in large classes). The word is spelled out and written on the board or overhead.
5. Define the words.
    - The facilitator indicates if he/she knows the word. Then other students or other groups offer possible definitions of the word. All definitions are recorded on the board or overhead.
6. Analyze the words.
    - The facilitator attempts to define the word on the basis of word parts. He/she identifies suffixes, prefixes, and root words and explains what each means. Then the facilitator offers his/her definition of the word based on the analysis. This stage of the game is the most vital, and the analysis technique should be clearly modeled by the facilitator. As students become familiar with word parts, they are encouraged to participate in the analysis.
7. Check the definitions.
    - The student or group that offered the word reads the dictionary definition. The etymology is checked and related to the definition.
8. Record points.
    - Points are recorded as necessary.
    - For words with multiple definitions, the context is used to identify the correct usage.
9. Group discussion.
    - The history of the word, historical definitions, and other concerns are discused by the class as a whole. Related words are considered. Synonyms and antonyms are offered by the facilitator or the students. Analogies may be used as necessary.
10. Record the word lists.
    - After each session, the facilitator compiles a list of words, word parts, etymologies, related words, and definitions to be copied and distributed to each student.
    - The advantage of having the facilitator do this, as opposed to having students take their own notes, is that accuracy and completeness are insured and it allows the students to be more spontaneous.
11. Evaluate the students.
    - Students may be evaluated through testing by providing short stories or sentences with the words and asking for definitions.
    - Students may be given word lists and asked to write a short story, or they may work in groups with each student writing a portion of the story.
    - The ability to use new vocabulary correctly, rather than grades themselves, should be

emphasized in the evaluations.

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GRAPHIC ORGANIZERS AND GROUPS

Avery and Avery (1994) present strategies for using graphic organizers and cooperative learning to improve reading comprehension. A group approach used before a text is read targets student learning of new vocabulary that appear in the text. It may be combined with other vocabulary strategies.

- Divide the class into groups.
- Before reading the text, students study some number of difficult or new words found in the selection. The number of words will depend on the length of the text, the level of difficulty, and time constraints.
- Each student in each group is responsible for recording all the words and their definitions on his/her own paper. Refer to the other vocabulary strategies in this page for ideas on defining new words.
- Then the students are asked to draw a picture illustrating some relationship between two of the terms. Students in each group should use different pairs of words.
- Each student then explains his/her visual representation to the rest of his/her group.
- Evaluation may take several forms: monitoring of group activity, individual evaluations by other group members, or quizzing all students on all words.

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PATTERNED LANGUAGE APPROACH

The patterned language approach (REFERENCE) addresses word identification skills with an emphasis on word meaning. It is intended for use by teachers helping elementary students learn to read. Connections between oral language and the written word are made by reading texts with patterned language, such as nursery rhymes or Dr. Seuss books. Students are encouraged to recognize the printed word.

To use the patterned language approach, follow these steps.

1. Select the reading material.
    - The teacher selects appropriate reading material with patterned language. Look for highly

repetitive and predictable materials that allow for choral reading.

2. Read the selected material.
    - The teacher and student(s) read the material together. At this stage, students should be making connections between verbal and written language.
3. Make and match text strips.
    - Portions of text are written on strips of paper (this can be done ahead of time if desired) and students are asked to place the strip next to the matching text in the book.
    - If students appear to be using picture clues to match text, copy the text on chart paper and have the students match strips to the chart instead.
4. Write word cards.
    - Word cards are made from the text, and students match words to the chart.

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TEACHING VOCABULARY - DO'S AND DON'TS

Dulin (year, page) offers the following do's and don'ts for teaching vocabulary.

When Teaching Vocabulary, Do . . .

- "Teach new subject-matter vocabulary in context and before students' initial reading of the new material; all teachers have this responsibility."
- "Explain new words in terms of structural analysis - prefixes, roots, suffixes - whenever possible. This way, students will learn families of words, not just a few new 'big words for the day.'"
- "Constantly direct pupils' attention to words - their appropriateness, power, and specific nuancesof meaning. Offer two choices when a word is needed; give the students practice in choosing exactly the right word for exactly the right meaning."
- "Occasionally bring the class into the decision; try to foster a respect for the well-chosen word and the well-turned phrase."
- "Teach your students definite forms or patterns for succinctly stating definitions; the following work well for the major parts of speech.
    - Nouns
        - State the word, the class it is in, and how it differs from other words in that class. For

example, 'A desk is a piece of furniture that is used for writing and storage.'
        - Then, to sharpen the definition, narrow the class. For example, 'A desk is a piece of office or school furniture that is used for writing and storage.'

    - Verbs
        - Use the infinitive form followed by a synonym or phrase. For example, 'To ratify is to approve.'

    - Adjectives
        - Use *to be* with the adjective, followed by a synonym or phrase. For example, 'To be fatigued is to be tired out.'"

    - Adverbs
        - Use an infinitive verb and the adverb, followed by a synonym or phrase. For example, "To walk quickly is to move with great speed."

- "Teach students how to consciously make use of the major context clues used by authors; occasionally take time to practice this important skill with the whole class. Remember, students will not always have you and/or Webster along when they are reading!"

- "Teach your students a 'system' or 'strategy' for unlocking unfamiliar words." Several such vocabulary strategies, like DISSECT and LINCS, are discussed elsewhere in this page.

When Teaching Vocabulary, Don't . . .

- "Don't rely solely upon 'incidental' approaches to vocabulary growth; actively, consciously pursue a program of vocabulary development, but avoid deadening drill." To keep vocabulary learning active and interesting, try the vocab game described previously in this page.

- "Don't gamble with mere verbalisms; make definite provisions for extending new words into speaking, writing, and thinking vocabularies. That way you are building concepts, not simply encouraging the acquisition of many isolated 'labels' that fit equally isolated 'package' definitions."

- "Don't forget the connotative implications of certain words; these are as much a part of the definition as are denotative ones."

- "Don't teach roots, affixes, etc. completely isolated from actual words; try to approach these word elements inductively, and then apply them."

- "Don't make your definitions more difficult than the words to be defined. Carefully select the definitive words and examples of a lower (more concrete) level of abstraction."

- "Don't neglect the 'different' ways of approaching definitions. The analogy is a good way of getting at meaning; so is asking for antonyms occasionally, rather than always for synonyms. For many words, the posing of an absolute opposite is the best way to give a definition."

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STRATEGIES RELATED TO ORGANIZATION

The reading strategies covered in the rest of the page are intended to help students better understand the organization of information in a text and to provide effective approaches for tackling the content of a text. The first section on textbook organization is a useful introduction to the former, and the rest of the strategies address the latter.

Many of the strategies follow the same basic pattern of steps, just with different names, so one will encounter a great deal of redundancy when reviewing them. This repetition, however, is a good indicator of the importance of the procedures for improving reading comprehension.

Some of the strategies are intended for use by instructors, but most were developed for use by students and others.

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TEXT BOOK ORGANIZATION

This section covers several aspects of text book organization: general organization, specific organization styles, exercises in identifying organization style, and textbook organization worksheets.

General Organization

Most textbooks have the same general format (D. Applegate, CAL). Textbooks are divided into chapters; a list of the chapters is found in the Table of Contents at the beginning of the book. Chapters related to the same theme or general topic may be arranged into units.

Most chapters have the following components: title, introduction, headings, illustrations, and summary. All of these may be used to improve one's understanding of the material.

- The title stimulates the reader's prior knowledge of the subject and helps to generate interest.
- The introduction indicates the general purpose of the reading and hints at the main ideas to be covered.
- Because they divide the text by topic, the chapter headings delineate the main ideas of the text and may be used to organize the reader's thoughts.
- Illustrations help to clarify information by presenting it in alternate formats. They may also be

used to register information in and recall information from memory.

- The summary recaps the main points and reiterates the author's conclusions.

Within each section of text demarked by a heading, the author expands upon the major idea covered in that section. Quite often, each paragraph will present one supporting detail related to the major point of the section. Examples, statistics, quotations, dates, and other information usually comprise the descriptions.

Additional information that may be found in a textbook chapter are objectives, vocabulary lists, review questions, discussion questions, and suggested readings.

- The objectives, listed on the first page of the chapter, explain the purpose of the reading and may be used in reading preparation and in assessing one's comprehension after reading.

- Vocabulary lists, found at the end of the chapter, summarize the important terms introduced in the chapter. They may be used to evaluate one's understanding of the reading.

- Review questions at the end of the chapter test the reader on the actual content of the reading to insure comprehension.

- End-of-chapter discussion questions go one step further, encouraging the reader to link the new information with prior knowledge and experiences and to process or apply the information in new ways.

Most texts have glossaries at the end of the book. The glossary is a valuable resource for looking up the definitions of content-specific words used in the text.

Specific Organization Styles

Student comprehension of reading assignments may be enhanced by gaining familiarity with the common styles of textbook organization. Recognizing how the information is organized makes it easier to identify the major concepts of the text because the reader comes to know what to expect.

Readers should be warned that one text, like a journal article or a textbook chapter, may contain information arranged in more than one style of organization. Be prepared to switch gears within the same text. The following descriptions of specific organization styles are taken, in part, from Twining (1991, p. 117).

- Comparison-Contrast

    - Comparison-contrast texts cover two sides of or two approaches to a topic.
    - The main points of each side may be presented separately. For example, a discussion of the goals, leadership, strengths, and weaknesses of the North in the Civil War may be followed by a discussion of the these things for the South.
    - Or, both sides of each major issue may be presented one at a time. For example, a biology text may discuss the assumptions of evolutionary theory and creationsim, followed by the goals of each, the basic principles of each, the strengths of each, and the weaknesses of

each.
    - The comparison-contrast style may be signaled by these key words and phrases: like, similarly, in the same, analogously, in contrast, but, however, rather, and on the other hand.

- Major Points

    - Some texts or portions of text, like the introduction and summary, are arranged according to major points.
    - Key phrases indicating the major points are: the major points are, there are several reasons why, most significant is, more importantly, of special note, and the primary purpose is.

- Cause-Effect

    - The cause-effect organizational style presents some topic or phenomenon and then offers explanations for it. For example, a discussion of the big bang theory or the Great Depression may be arranged according to cause and effect.
    - Key words and phrases of this style are: because, reasons for, source of, led to, so, therefore, consequently, as a result of.

- Problem-Solution

    - Math, statistics, and accounting texts are often arranged in a problem-solution style.
    - With this form of organization, explanation of a new concept is followed by a problem and solution to illustrate it.

- Sequence - Time Order

    - Information arranged sequentially or in time order is used to represent historical order or processual order. Examples of the former include texts discussing battles of the Civil War or the Spanish conquest of the Aztec. Examples of the latter are texts describing the process of mitosis or classical conditioning.
    - This style of organization is similar to enumeration, which is discussed below.
    - Key words and phrases indicating sequential or time-ordered information are: first, second, then, following that, next, after, the first step, and finally.

- Enumeration

    - Information arranged in the enumeration style is arranged in topical order. Such text may resemble a catalog or a detailed list of main points and supporting details. A chapter covering the causes of World War I may be arranged with the enumeration style.
    - Key words and phrases indicating enumeration are: first, also, in addition, another, next, and finally.

- Examples and Illustrations

    - With this style of organization, each main point is followed by examples and illustrations related to it. For example, a text on rock types includes examples and photos of each.
    - Key words and phrases indicating examples and illustrations are: for example, for instance, to illustrate, imagine, more specifically, and a case in point is.

Exercises in Identifying Organization Styles

Choose the appropriate words to indicate the type of organization used in the following samples of text: major point, examples and illustrations, enumeration, sequence, cause and effect, and comparison-contrast. Identify textual clues that indicate the type of organization (REFERENCE).

1. The passage of the Fourteenth Amendment in June 1866 was followed by a concerted effort to compel the southern states to ratify it by making approval a condition of readmission to the Union.

   _____

   Textual Clues:

2. Bookkeeping is only a small, simple but important part of accounting. Accounting, on the other hand, includes the design of an information system that meets user needs.

   _____

   Textual Clues:

3. Because the demand for steel is a derived demand, managements failed to appreciate that the major growth industries, such as telecommunications, were not the major users of steel.

   _____

   Textual Clues:

4. The organ systems of the human body are circulatory, digestive, endocrine, lymphatic, muscular, nervous, reproductive, respiratory, skeletal, and urinary.

   _____

   Textual Clues:

5. The major reason for studying accounting is to acquire knowledge and skills to participate in important economic decisions.

   _____

Textual Clues:

6. An especially important federal contribution to Gilded Age economic growth was friendly tax policy.

   _____

   Textual Clues:

7. Both the dendrites and the axon of a neuron carry information in the form of nerve impulses.

   _____

   Textual Clues:

8. After the 1870's, the tariff rose virtually without pause until the twentieth century.

   _____

   Textual Clues:

9. The high viscosity of the granitic lava results from the high silica content.

   _____

   Textual Clues:

10. After the chromosome replicates and divides, the cell divides into two daughter cells with the same genetic material.

    _____

    Textual Clues:

Answers to the exercises are as follows.

1. This is a sequence (or time-ordered) statement. It indicates the order of events. Key words include

"followed by."

2. This is a compare-contrast statement. The two things, bookkeeping and accouting, have different definitions, indicating contrast. "On the other hand" is a key phrase in this case.

3. This is an examples and illustrations statement. Words like "such as" and "like" are indicators of this style.

4. This is an enumeration statement. The list of items is the main clue here.

5. This is a major point. One clue is the phrase "major reason."

6. This is a cause and effect statement. The sentence indicates that one thing lead, at least in part, to another. The phrase "contribution to" could be substituted with "cause of."

7. This is another compare-contrast statement. The two things in the sentence, dendrites and axon, have similar functions, indicating a comparison. A key word is "both."

8. This is another major point. The statement makes a single point without indicating an examples or causes.

9. This is a cause and effect statement. One thing leads to another. The key phrase is "results from."

10. This is a sequential (time-ordered) statement. The order of events in a process are indicated. "After" is a key word.

Textbook Organization Worksheet

The following worksheet may be used to evaluate the organization of a particular textbook. Clarification of thebook's organization helps students to distinguish purposes and main ideas and to comprehend the information while reading (REFERENCE).

TEXT BOOK REVIEW for _____ (name of book)
TABLE OF CONTENTS: How are the chapters arranged? • _____ sequentially • _____ chronologically • _____ topically

- _____ other _____

CHAPTER / UNIT SUMMARY:

Write a one-sentence summary of each chapter and/or unit.

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

STUDY AIDS:

What study aids are found in the book? In each chapter?

- In the Book
  - _____ glossary
  - _____ bibliography
  - _____ appendices
  - _____ other _____
- In the Chapters
  - _____ lists of objectives
  - _____ introductions
  - _____ headings
  - _____ subheadings
  - _____ summaries
  - _____ suggested readings
  - _____ review questions
  - _____ discussion questions

- _____ vocabulary lists
- _____ bold or italics vocabulary
- _____ tables
- _____ graphs or charts
- _____ photographs
- _____ figures
- _____ other _____

VISUAL AIDS:

What function(s) do the visual aids serve?

- _____ create interest in the subject
- _____ summarize information
- _____ illustrate key ideas
- _____ present new information
- _____ other _____

SUPPLEMENTAL MATERIAL:

Which supplemental materials are available for the book?

- _____ student workbook
- _____ instructor's manual
- _____ lab manual
- _____ audio cassettes
- _____ slides
- _____ movies
- _____ other _____

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TEXT SKIMMING

Efficient and effective readers approach a reading task with a goal or purpose in mind. That goal or purpose will guide the reader as he/she moves through the material. One way to develop a goal or purpose for a reading assignment is to skim it before reading for details.

Skimming a chapter or short article should take no more than a few minutes. In skimming, the student reads only the first sentence of each paragraph. After skimming the text, the reader recalls everything and identifies the most important points. He/she then sets a goal for the assignment and plans how to do intensive reading of the entire document at a slower pace.

Skimming may be used in conjunction with other reading strategies described in this page, like PARTS, in which goal identification is one of the initial steps.

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CREATIVE MAPPING FOR CONTENT READING

The creative mapping strategy (Naughton, 1993-1994) uses pictoral images to help students recognize the organization of information in content readings and reorganize the main ideas and details of the text. It "combines the concepts of graphic organizers and visual arts to display information, which not only promotes reading and thinking but also encourages memory development" (Naughton, 1993-1994, p. 324).

Creative mapping helps students to register and recall information from texts and to comprehend how main ideas and supporting details are related. Establishing associations between existing and new information is another purpose of creative mapping.

Creative mapping may be applied to a wide variety of topics. It should be modeled by a facilitator, who can provide feedback until the strategy is mastered. The facilitator should dispell student reservations about their artistic abilities. The quality and organization of the information are much more important than the quality of the drawing itself.

An effective approach to reading comprehension in the classroom is for instructors to lead a group activity in creating a map for a reading assignment. The instructor solicits suggestions from the students for designing a visual image, or the students may work in groups to develop maps. The resulting map(s) is/are used to stimulate further group discussions of the topic.

The creative mapping strategy is useful because it targets important abilities - remembering information and discerning and understanding relationships among ideas. In addition, the "visual representations are particularly insightful for less skilled readers, who often have difficulty in organizing information from their content reading" (Naughton, 1993-1994, p. 324). Because students today are experienced in gleaning meanings from a variety of visual media, like music videos and magazine ads, they should relate to the strategy and quickly gain proficiency. Another advantage of creative mapping is the interest and personal involvement it generates. "The visual image itself can often stimulate critical thinking and

promote rereading of the text. Because students are eager to fill in the sections on their maps, they often will reread the text in search of either literal or inferential information" (Naughton, 1993-1994, p. 324). The author also notes that "the advantage of creative mapping over traditional word maps is that the mapper is not simply connecting ideas grapho-phonemically or even syntactically, but is also connecting them in a graphically semantic fashion" (Naughton, 1993-1994, p. 325). Finally, but perhaps most importantly, "the creative map offers a concrete visual of comprehension or lack thereof. Thus, although creative mapping does not guarantee comprehension, it can clearly illustrate when comprehension is incomplete and what ideas from the text have been omitted" (Naughton, 1993-1994, p. 326).

The steps in Naughton's (1993-1994) creative mapping strategy are as follows.

1. Read the text.
    - As the student reads the text, encourage him/her to take note of the main ideas and supporting details.
2. Develop an image.
    - Creative mapping involves developing a visual image for representing the major concept of the assignment. At first, students may be inclined to use pictures that reflect the subject matter. With practice, students should be encouraged to choose images that indicate the author's main idea, which often is more abstract. It is very important to include information the students already know about the topic that may be associated with the new material.
    - The overall image should represent the major concept or purpose of the reading.
    - Categories corresponding to the main ideas are represented as different sections of the image. Headings in the text may provide clues for identifying the main ideas.
    - Supporting details for each main idea are recorded in the appropriate sections of the image. These may include names, dates, definitions, or statistics.

Naughton (1993-1994) offers the following example of the creative mapping strategy. It is based on an article, "Death of the Unsinkable Titanic," found in the book *Disasters!* (year).

- The graphic depiction will be scanned in August 1996.
- The visual representation depicts the author's main point, that the sinking of the ship by an iceberg resulted in a huge loss of life. Five main ideas related to this thesis are identified and represented as separate sections of the image: causes of the disaster, crew, survivors, deaths, and the Carpathia (the rescue ship).
- The causes are pictorially represented by an iceberg, and the crew by stacks on the ship. Ideas related to survivors are represented by a life boat, while the water below the sinking Titanic image is used to represent deaths. The image of a smaller ship represents the rescue ship. Supporting details for each of these ideas are recorded in the appropriate sections of the visual image.
- The image also shows associations with previous knowledge. For example, the iceberg, the primary cause of the disaster, is illustrated with most of the ice under sea level. Other "hidden" causes that contributed to the sinking are shown under water.

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MEDIATED INSTRUCTION OF TEXT (MIT) FOR CONTENT READING

Mediated instruction refers to interventions made by an instructor that are intended to guide students through an assignment. With respect to reading tasks, instructional mediation may involve matching student background to the content and organization of the text, guiding students in discerning and understanding the text's meaning, and providing opportunities for students to use the new information in a variety of ways (Neal and Langer, 1992). These forms of mediation may be used in various combinations before, during and after reading an assignment.

The mediated instruction "philosophy" assumes that instructors are responsible for "promoting interaction between students and textbook information" and for enabling the students' "comprehension processes that define successful reading of expository material" (Neal and Langer, 1992, p. 229).

"In the content areas, reading instruction as mediation requires two conditions. First, flexibility for planning is necessary because the instruction occurs in diverse subject matter fields. ... A second condition is a clear view of how teachers help students learn from text. ... Hence, content teachers in diverse fields require a paradigm that provides instructional options according to the needs of their subject matter and their pupils and that specifies the teachers' responsibilities at each phase of guiding students' reading" (Neal and Langer, 1992, p. 229-230). Neal and Langer have developed such a paradigm.

The mediated instruction of text (MIT) strategy developed by Neal and Langer (1992) provides teachers with a generalized scheme for planning reading-related assignments in a variety of subject areas. The approach conceptualizes reading as occurring in three phases: before, during, and after.

The major components of the MIT paradigm are:

- instructional goals for each reading phase
- basic comprehension processes that ensure each goal is met
- instructional strategies that promote reading comprehension
- instructor responsibilities for each reading phase

MIT offers several advantages over other approaches to teaching content area reading, such as SQ3R and directed reading activity (DRA). Mediated instruction of text is designed to be broad enough that it can be applied to any subject, from science to music to history. It is also flexible in that is encompasses a large number of strategy choices, making it easily adaptable to the different goals, backgrounds, and skill levels of instructors and students. MIT also helps to clarify instructor responsibilities.

MIT Paradigm

READING PHASE	READING GOAL	COMPRE-HENSION PROCESS	LEARNING STRATEGIES	TEACHER RESPONSIBILITY
BEFORE READING	Readiness	Activate prior knowledge	* questioning * brainstorming * posing a problem * role playing	Initiate probes
		Predict content	* surveying ideas * demonstration or experiment * semantic organizers * building word meaning	Lead students
DURING READING	Understanding	Construct meaning	* posing purpose questions * structured overviews	Provide guidance
			* responding to purpose questions * verifying predictions * completing study guide	
		Monitor understanding	* questioning or talking about ideas * notetaking * student generated quizzes	Provide guidance
AFTER READING	Retention	Process ideas	* summarizing * response writing * graphic organizers * teaching others * learning games * discussion	Prescribe structure to promote retention of ideas
			* projects	

		Apply knowledge	* experiments * creative work	

Sample applications of the MIT strategy are provided by Neal and Langer (1992, p. 229).

SUBJECT: Chemistry

TOPIC: Introduction to the concept of matter

- BEFORE READING
    - Questioning: Ask "What is everything made of? Is everything unique? Or do you think that there are just a few types of substances that everything else is made of?"
    - Demonstration: Give demonstration of burning balsa wood and explain how the Greeks thought that all things were made of earth (ashes), air (smoke), and water (condensing steam).
- DURING READING
    - Study guide: Have students respond to a selective reading guide as they participate in questioning.
    - Questioning: Talk about ideas, using a small group reading and questioning procedure.
- AFTER READING
    - Summarizing: Direct students to summarize the major ideas and discuss their learning logs.
    - Experiment: Give directions for the follow-up lab experiment.

SUBJECT: Music

TOPIC: Introduction to woodwind instruments

- BEFORE READING
    - Demonstration: Show and play various woodwind instruments. Ask "What do all these have in common?"
    - Semantic organizer: Construct a diagram indicating characteristics of woodwind instruments and basic groups of woodwinds. Direct students to copy the diagram in order to expand on it later for notetaking.

- Purpose questions: Pose guiding questions for each section of the text.

- DURING READING
  - Responding to purpose questions: Have students locate information and orally answer purpose questions.
  - Notetaking: Indicate to students where to add ideas to the semantic organizer.

- AFTER READING
  - Response writing: Have students write in their music journals answers to the following questions: What are the characteristics of woodwind instruments? Which instrument do you like best? Why?
  - Project: Hand out a list of musical works that feature woodwind instruments. Direct students to work in pairs, select three works for listening, and identify the woodwinds featured.

SUBJECT: Physical Education

TOPIC: Social dancing - Country swing

- BEFORE READING
  - Brainstorming: Ask "What comes to mind when you hear the words 'country swing'?"
  - Demonstration: Walk through the basic steps of country swing.
  - Build word meaning: Through discussion, provide students with definitions of major terms; have students enter new words in their vocabulary logs and define each term in their own words.

- DURING READING
  - Verifying predictions: On the basis of the word study, ask students to predict the major ideas to be read for each section of the handout, "Learning Country Swing." Direct students to read each section to determine the validity of their predictions. Discuss the ideas of each section and relate to demonstration.

- AFTER READING
  - Project/creative work: Direct students to divide into pairs to practice the country swing steps. Have them create their own steps, and present their dances to the class.

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SQ3R STRATEGY

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 colledge-level reading tasks. Another advantage is that SQ3R is relatively simple and straightforward. As such, modelling and feedback by a facilatator 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, lok 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 conceps 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 curoisity, 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 weeks greatly improves one's ability to remember the information. And, it cuts down on preparation time for exams later.

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PQ4R STRATEGY

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 an information organization tool 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.

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RAP STRATEGY

The RAP strategy (Schumaker, Denton, and Deshler, 1984) targets the reader's ability to understand main ideas and supporting details by emphasizing paraphrasing skills. The three-step approach involves reading, asking questions, and parphrasing.

RAP may be used by students on their own or with the help of facilitators. The approach may be modified for use in group activities lead by the instructor. Readings from most subject areas are amenable to the strategy.

In general, RAP is similar in purpose and structure to SQ3R, PQ4R, and other reading comprehension strategies that focus on how information is organized. RAP, however, lacks the initial surveying and questioning steps found in other approaches.

Read

One paragraph of the text is read at a time. Reading may be done by the facilitator, but it is more effective if the student completes the reading. The student may read silently or aloud.

Ask Oneself What the Main Idea Is

The next step involves the reader asking him/herself what the main idea of the paragraph is. He/she should also identify details supporting the main idea.

Paraphrase

The information is then paraphrased into the reader's own words and recorded on paper or audio tape. Written material from several paragraphs should be organized using outlines, word maps, matrixes, or other organizational tools. Paraphrasing is covered in more detail in the Paraphrasing section of the Writing and Proofing page.

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SNIPS STRATEGY

Reading comprehension may be improved by using the SNIPS strategy (REFERENCE). It is a five-step reading approach for facilitating on-line processing through interpretation of visual aids.

There are some similarities in the types of tasks involved in SNIPS and other reading comprehension strategies such as SQ3R and RAP. SNIPS, however, focuses exclusively on pictures, graphs, charts, maps, time lines, and other visual representations found in texts. As such, SNIPS may be used effectively with more text-based approaches to enhance student understanding of reading assignments.

Start with Questions

The reader begins by clarifying his/her goals by asking him/herself "Why am I looking at this visual aid?" The reader then asks questions to determine what kinds of information on which to focus, depending on the type of visual aid presented.

For pictures, the reader might ask "What is this a picture of?" and "What's the motion or emotion?" For graphs and charts, the reader considers "What is being compared?" and "How are the things being compared?" For maps, the reader asks "What key areas are important to see?" and "What makes them key areas?" Questions like "The time line shows what?" and "What are the starting and ending dates and the time intervals?" may be asked for time lines.

Note What Can Be Learned From Hints

In order to answer the questions, look for hints or clues about the meaning of the visual aid in the title, caption, lines, numbers, or colors. Activate prior knowledge as it relates to the subject.

Identify What Is Important

Identify the main idea of the graphic as well as two facts represented in the graphic.

Plug It Into the Chapter

Consider how the visual aid relates to the main ideas of the chapter or article.

See If You Can Explain the Visual to Someone

Explain the visual aid to another person, or explain it aloud to yourself if no one is available. What is the graphic about? How does it relate to the chapter? What are the best hints about the meaning, and why are they good hints?

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PARTS: A TEXT PERUSAL STRATEGY

The PARTS strategy (REFERENCE) guides students in carefully reading an assignment in order to

enhance learning. Similarities with the SQ3R strategy include reading in parts, asking and answering questions, and reviewing. PARTS may be used to read assignments in most subject areas, and it can be used by individual students, students and facilitators, or groups of students.

Perform Goal Setting

Consider why you are analyzing the text parts. Is it to aid understanding? To improve class participation? To improve the quality of lecture notes? To improve quiz scores? Identify a goal related to this reason, such as making one comment or asking one question in the next class, or improving the next quiz score by five points. Make a positive self-statement.

Analyze Little Parts

Divide the text into parts, such as title, headings, visuals, and words. Analyze one part at a time. What is the main idea of each part? What details support each part? Explain the information included in each part. Then, based on one part, predict what the next part will discuss. After reading all parts, tie them together. How are the parts related?

Review Big Parts

Review the introduction and summary of the text. Search for signal words, such as "the most important" or "the purpose is," that indicate the main ideas. Decide what the author's main goal or purpose is. Relate the new information to knowledge you have already about the subject. Paraphrase the main ideas into your own words.

Think of Questions You Hope Will Be Answered

Identify your own questions based on titles and headings, previous knowledge, and predictions. Check the questions at the end of the text.

State Relationships

Consider how the text relates to other texts in the unit. Consider how the text relates to the course objectives indicated on the syllabus. Consider how the text relates to what you already know about the subject.

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REAP STRATEGY

Eanet and Manzo (1976) developed the REAP strategy for composing annotations of texts. The acronym

stands for read, encode, annotate, and ponder. Intended for use by high school or college students, REAP includes ten varieties of annotations, each focusing on different aspects of a text, that help to improve student writing skills, metacognitive awareness, and comprehension of main ideas (Strode, 1993). For instructors, the annotation types help to "illustrate the reading process and also to encourage mature reading and study strategy use" (Strode, 1993, p. x).

Annotating has several benefits (Strode, 1993). Besides making texts more meaningful, annotating improves student attention while reading and makes reading a more active process. Annotation writing enhances information processing and, in turn, improves registration of information in memory. There is less information to remember when it has been summarized in an annotation, and annotations are written in a student's own words. Students exposed to annotation writing are better able to write succinct summaries of texts, which may improve performance on exams and standardized tests. Annotating focuses student attention on those aspects of text often overlooked while reading. While the strategy may be used for nearly any subject, it is especially helpful in English courses in which summary and critique writing are common requirements.

Read

The first step of the strategy is to read the text. If desired, other reading strategies like SQ3R or PARTS may be used at this stage, as they relate to the type of annotation to be written.

Encode

After reading the text, the information is paraphrased by the student into his/her own words.

Annotate

Annotations are brief summaries of a text that explain and/or critique the text. Different aspects of the text are handled differently when writing annotations. Therefore, there are several types of annotations that may be written for a single text. Strode's (1993, p. x) summary of Eanet and Manzo's (1976) ten annotation types is presented below.

Ponder

The student evaluates the annotation for accuracy and completeness. Consider how the text relates to other readings, to course objectives, and to classroom activities.

Annotation Types in the REAP Strategy

The ten annotation types employed with the REAP strategy are described below (Strode 1993).

1. Summary Annotation
    - The student's interpretation of the text is given in the summary annotation. Only the most

important ideas are included in a clear, succinct summary. Details such as examples, statistics, story plot, and descriptions are not included in the summary annotation.

2. Thesis Annotation

    - The thesis annotation is similar to the summary annotation in that the purpose is to clearly state the main idea of the text, answering the question "What is the main point that the author is trying to get across to the reader?" Unlike the summary annotation, the thesis annotation need not be written in complete sentences.

3. Question Annotation

    - The student's interpretation of the main point of the text is given in this type of annotation. That interpretation may or may not coincide with the author's stated or implied thesis. To write the question annotation, answer the question "What question(s) is/are the author trying to answer in the text?" The annotation should be written in question form.

4. Critical Annotation

    - In the critical annotation, the reader states his/her position on the author's thesis. The reader may agree, disagree, or agree partly with the author's position. Three sentences comprise the critical annotation: the first sentence restates the author's main idea, the second sentence gives the reader's response, and the third sentence explains or defends the reader's position.

5. Heuristic Annotation

    - This type of annotation mixes the author's and reader's words with respect to the main idea of the text. Written in a stimulating manner, the heurisitic annotation restates the thesis in the author's and reader's words. The former are indicated by quotation marks (") and the latter are set off with brackets ([ ]) in the annotation.

6. Intention Annotation.

    - The author's purpose, goal or intention for writing the text is given in the intention annotation. Using knowledge about the author, the author's language and writing style, and your feelings about the text, indicate what you believe the author's reason for writing the text is.

7. Motivation Annotation

    - In the motivation annotation, the reader speculates on what motivated the author to write the text and to include the facts included in the text. Consider "What kind of person would write something like this?" Use clues in the text to write interpretations about the author.

8. Probe Annotation

    - Questions, practical points, and issues in the text that deserve further explanation are given in the probe annotation. The reader should ask "About what do I want to know more?" and "Why is this so?"

9. Personal View Annotation

    - The reader is given the opportunity to draw upon his/her personal experiences and background when writing the personal view annotation. Compare beliefs and opinions about the subject with those of the author. Consider similarities and differences in your and the author's opinions.

10. Inventive Annotation

    - Focusing on the conclusion of the text, draw upon your creativity to write a new and different ending to the reading based on the author's ideas. Pick up where the author left off. Plunge yourself into the subject and see where it leads you!

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MULTIPASS STRATEGY

MultiPass is a suite of strategies intended to improve reading comprehension, learning acquisition, and generalization and paraphrasing skills. Developed by Schumacher, Deshler, Alley, Warner, and Denton (1982), the approach requires that the reader make three passes through a text. Different strategies are used in each pass for surveying the reading, sizing-up the information, and sorting out main ideas.

One advantage of MultiPass is that registration of information in long-term memory is enhanced by going over the reading several times with different goals in mind. In addition, the approach may be used to improve understanding of readings in a variety of subjects. Similarly, it may be used for reading textbook assignments as well as journal articles and other forms of text. By producing written materials and providing review of readings, Multipass aids in exam preparation.

First Pass: Survey the Reading

The reader becomes familiar with the organization and main ideas of the text by quickly surveying the title, introduction, headings, visual aids, and summary. Consider the following questions: What is the general subject of the reading? What is the purpose or goal of the author? What are the main ideas covered in the text? What does the author conclude?

Second Pass: Size-Up the Reading

In the second pass, the reader carefully reads the text, looking for textual information and visual representations that support the main ideas. Pay particular attention to illustrations, statistics, and words in bold or italic print. The reader may wish to record the main ideas and supporting details on audio cassettes or in writing using some organizational tool like an outline, a word map, a time line, or a flow chart.

Third Pass: Sort Out the Information

The final pass allows the reader to evaluate his/her understanding of the text. He/she should determine what was learned and what still needs to be learned.

The sorting-out process may be accomplished in one of several ways, used individually or in combination. First, if there are review questions at the end of the text, the reader may self-evaluate by answering them with the read-answer-mark process. This entails reading each question, answering what one can, and marking those that must be looked up in the text. Second, if the text lacks review questions, the student (or the instructor or a study buddy) may make up and answer his/her own questions. Explaining the main points of the text to another person is a third way of evaluating one's understanding of the material.

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PRSR STRATEGY

The PRSR reading comprehension strategy (REFERENCE) follows the same general pattern as most of the other organization strategies in this section. PRSR stands for preview, read, self-test, and review. Text organization, paraphrasing, and self-evaluation are stressed.

Preview

Read the title and introduction. What do you already know about the subject? Read the headings and subheadings to determine the main ideas covered in the text. Examine the illustrations for additional information. Look at the words in italics or bold print. Read the summary and then skim any review questions or discussion questions at the end of the chapter.

Read

Form the headings into questions and then read with the goal of answering those questions. Identify important points by underlining or taking notes. Use think-aloud to work through the meaning of the text. Clarify meanings further with visual imagery.

Self-Test

Monitor understanding by answering self-made questions as well as review and discussion questions at the end of the chapter without referring to the text. Use summaries to organize important information. Try explaining key ideas and concepts to another person.

Review

Check answers to review questions against the text. Reconsider information that was forgotten or misunderstood. Repeat the self-test and review stages until the material is mastered. Then review periodically to keep the information in long-term memory.

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PROR STRATEGY

The PROR strategy (REFERENCE) is another variation of many of the reading organization strategies in this page.

Preread

Use the title, headings, introduction, and summary to form questions to guide reading. Recall prior knowledge related to the subject to form more questions.

Read

Read with the goal of answering the questions. Annotate key concepts, supporting details, and examples. Consider how illustrations relate to the text.

Organize

Develop rehearsal strategies to organize the important information and commit it to memory. Answer the questions aloud. Compare the text to lecture material.

Review

Reduce the information to the bare essentials. Target the information that was unclear. Talk through the material to yourself or another student.

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TEXT BOOK READING GUIDES

Guides to aid students in reading texts may be developed for nearly any subject or reading level. They help students to recognize the organization of information and to comprehend the main points of the reading. Facilitators or instructors may develop reading worksheets for students, or students may work

individually or in study groups to design their own.

Students and facilitators select from a set of questions and statements designed to guide readers through the major ideas and supporting details of the text. Or they can make up their own items. The strategy is especially useful when lecture information, course objectives, and prior exams are considered in making the reading guide.

Sample items that one might include in a text book reading guide are provided below (REFERENCE). Items may be phrased as statements or as questions.

- The main idea introduced is ...
  What is the main idea?

- The author's purpose for writing the text is ...
  What is the author's purpose of writing the text?

- The author's thesis is ...
  What is the thesis of the reading?

- The main idea is significant because ...
  Why is the main idea significant?

- The main idea may be defined as ...
  What is the definition of the main idea?

- Examples of the main idea are ...
  What are some examples of the main idea?

- The author elaborates on the main idea by discussing the differences between __ and __ .
  What two things or ideas are contrasted?

- Visual aids in the text show ...
  What do the visual aids tell us about the subject?

- Important dates discussed in the text are ...
  What are the important dates discussed in the text?

- The most significant contribution of ___ was ...
  What are the significant contributions of the people discussed in the text?

- The main idea is related to the reader's personal experiences of ...
  What personal experiences of the reader are related to the main idea of the text?

- The author's motivation for writing the text was ...
  What was the author's motivation for writing the text?

A reading guide was developed for the following excerpt from a chemistry book (REFERENCE). The sample reading guide and the completed reading guide are illustrated.

- "Different elements combine in proportions that are fixed and unvarying to form compounds. For example, the compound water has a fixed proportion of two elements: 11.9 % hydrogen to 88.1% oxygen by mass. Compounds are unlike mixtures, in which two or more elements can be present in varying proportions. Seawater is a mixture. It consists of sodium, chlorine, potassium, calcium, sulfur, magnesium, and other substances dissolved in water, but the percentages of each substance varies from place to place. The compound water is 11.9% hydrogen and 88.1% oxygen no matter where you find it."

  - The main idea introduced is _____ .
  - It can be defined as _____ .
  - An example is _____ .
  - The authors elaborate on the idea by discussing the differences between _____ and _____ .

  - The main idea introduced is compounds.
  - It can be defined as different elements combined in fixed and unvarying proportions.
  - An example is water (always 11.9% hydrogen and 88.1% oxygen) .
  - The authors elaborate on the idea by discussing the differences between compounds (water) and mixtures (seawater).

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EXERCISES IN MEANINGFUL ORGANIZATION

The following exercises may be used to demonstrate to students how important it is to preview texts before reading them in order to detect the meaningful organization of information. By examining the titles, headings, and illustrations of a text, the reader gains important insights of what the text covers and is able to activate prior knowledge of the subject.

The passages below are presented without titles, headings, or other contextual clues that indicate the subject of the text. Ask students to read the passages and try to summarize the content in one sentence. If they are unable to do so, give them the titles and see if the text makes more sense.

Exercise 1

- "With hocked gems financing him, our hero bravely defied all scornful laughter that tried to prevent his scheme. "Your eyes deceive." "It is like an egg, not a table." Now three sturdy sisters sought truth. Forging along, sometimes through calm vastness, yet more often over turbulent peaks and valleys, days became weeks as many doubters spread fearful rumors about the edge. At last, from nowhere, winged creatures appeared, signifying momentous success" (Ellis, year, p. 101).

- Summary:

Exercise 2

- "The procedure is actually quite simple. First you arrange things into different groups. Of course one pile may be sufficient, depending on how much there is to do. If you have to go somewhere else due to lack of facilities that is the next step; otherwise you are pretty well set. It is important not to overdo things. That is, it is better to do too few things at once than too many. In the short run this may not seem important but complications can easily arise. A mistake can be expensive as well. At first the whole procedure will seem complicated. Soon however, it will become just another facet of life. It is difficult to foresee any end to the necessity for this task in the immediate future, but one never can tell. After the procedure is completed one arranges the material into different groups again. Then they can be put into their appropriate places. Eventually they will be used once more and the whole cycle will then have to be repeated. However, this is part of life" (Nist and Diehl, year, p. 118).

- Summary:

Exercise Titles

- The title of the first exercise is "Columbus' Journey to the Americas."

- The title of the second exercise is "Doing the Laundry."

- The rather vague texts should make more sense knowing the titles and the subjects discussed. The reader may use the titles to trigger prior knowledge that is helpful in deciphering the material.

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KWL STRATEGY

Ogle (year) developed the KWL strategy to activate the reader's background knowledge and to show students how text can be related to what they know and what they want to learn. In this respect, KWL can be used to supplement or supplant some or all of the first stage of the directed reading activity

(DRA) strategy.

The strategy is intended for use by instructors, but some responsibilities fall on students as well. KWL ensures that teachers have a structure allowing students to control their own inquiry and extending the pursuit of knowledge beyond one reading selection. Students identify their own content-related questions and attempt to determine the author's purpose of writing the text.

KWL is a three-step process: (1) what one knows, (2) what one wants to learn, and (3) what one learned.

*What One **K**nows*

In this initial stage, students participate in brainstorming in response to a category or number of categories suggested by the instructor. The goal is to spark interest in the subject based on prior knowledge and experiences. The key to success in this step is to make the categories specific and relevant to the text. As Ogle (year, p. x) notes,

- when the class will read about sea turtles, use the words sea turtles as the stimulus, not 'What do you know about animals in the sea?' or 'Have you ever been to the ocean?' A general discussion of enjoyable experiences on the beach may never elicit the pertinent schemata. ... If there appears to be little knowledge of sea turtles in your students' experiences, then ask the next more general question, 'What do you know about turtles?'

Students may find the brainstorming process difficult at first; if so, model the process several times. Individual worksheets and group discussions are effective in this stage.

The ultimate goal is to move students to independence in this task. They should be able to reflect upon prior knowledge before reading a text without the intervention of the instructor.

*What One **W**ants to Learn*

This stage builds on the first. What is it that catches the students' interest and curiosity from the brainstorming in the *K* stage? The teacher can promote this by helping students identify when they have gaps in ideas, disagreements, intriguing ideas, etc. The goal should be to turn these into questions for individuals as well as the group. Finally, the questions should be converted into purposes for reading (at least the purpose should be to answer the questions).

*What One **L**earned*

Students should be encouraged to write down what they have learned as they complete the reading selection. Students must be encouraged to go beyond the single selection. They should follow their own learning interests rather than be satisfied with the purposes of the author of a single selection.
Modifications of the KWL Strategy

One modification of the KWL strategy involves the use of mapping as an aid to organizing the categories generated during brainstorming. Mapping techniques also can be used to reinforce comprehension subsequent to reading. A variety of mapping formats is available; they include word maps, spider or web

maps, herringbone maps, mind maps, and hierarchical charts.

For more advanced students, summarization activities can be added. Students should be taught to summarize the reading selection in writing. They should be taught to focus on the main idea, to eliminate redundancy, to collapse lists into a category, and to be certain they have captured the author's intent.

Cautionary Notes

The most important concern is that the KWL strategy should be directed at some learning goal. In other words, what is it that, under the best of circumstances, you want students to learn? When the procedure is used, the instructor should ask him/herself what it is that he/she wants the students to learn from the text. Identify what it is that students should comprehend and remember if they had no reading difficulties. Direct the KWL activities toward that end, if students don't do so on their own.

Second, KWL works best with expository text because their primary purpose is to provide precise explanations and set forth meanings about a topic. It can work with narratives, but it isn't the same because they have built-in structure that makes comprehending stories different. For stories, use a story map framework instead of KWL. Be certain that students can identify the different types of text and questions to be asked.

Finally, make provisions for students to become independent in the application of any of these techniques. Provide ample structure and guidance in the beginning and very little after students become proficient.

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DIRECTED READING ACTIVITY (DRA)

Details about the direct reading activity (DRA) will be available in August 1997.

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DIRECTED READING-THINKING ACTIVITY (DRTA)

Details about the direct reading-thinking activity (DRTA) will be available in August 1997.

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STORY STAR / STORY MAP FRAMEWORKS

The story star and story map strategies are organizational tools for summarizing the main ideas of a work of literature: characters, setting, and plot (Dr. Judy Van Voorhis, Education Department, Muskingum College).

The story star is a five-point star used to answer a number of questions about the reading. Each question and answer is placed on one point of the story star. A graphic representation of the story star will be available in August 1997.

- Where does the story take place?
- Who is in the story?
- When does the story take place?
- How does the story turn out?
- What is the story about?

The story map framework uses a series of boxes, similar to a flow chart, to summarize the characters, setting, and plot of the reading.

BOOK TITLE

Characters: 1. 2. 3. 4.	Time:	Place:

|
|

The Problem:

|
|

Action:

|
|

Resolution or Outcomes:

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GLEANING

Directions for Hulme's (1993) gleaning strategy are as follows.

1. Read the text.
2. Identify the main ideas of the assignment.
3. Represent the main ideas in shorthand, symbols and abbreviations.
4. Record the gleaned ideas on notecards.
5. Review the lesson by restating in complete sentences the main ideas of the lecture, based on the information recorded in shorthand on the notecards.

The following example of gleaning is from Hulme (1993, p. 404).

- Text: Spain Attempts to End Cuban Revolt of 1895
- "A change in United States tariff policy towards Cuba was a factor which contributed to the 1895 revolt. Cuban sugar was allowed to enter the United States duty free any time when the McKinley Tarrif Act of 1890 was enacted. As a result the Cuban sugar industry experienced exceptional prosperity and the island's economy mirrored this. But in 1894 a new tarrif reinstated a noteworthy duty upon Cuban sugar which caused sugar prices to fall. In the best of times Cuban workers were treated only somewhat better than slaves. As the state of the sugar industry worsened, conditions

for the workers in Cuba became despicable. This seeded discontent which in time erupted into an insurrection against Spanish rule. Sympathizers in the U.S. quickly responded to the call for aid which came from mobilized Cubans."

"When the Spanish government was unable to stop the Cuban revolt with its established police methods, it resorted to a hard line approach. It challenged the guerrilla warfare of the insurgents by gathering up the civilians from trouble zones and placing them into fortified towns. This 'reconcentration policy' was protested by the U.S. government. Epidemics of disease hit these concentration camps and were vividly reported in the American press. Newspapers kept things heated by exaggerating stories of Spanish atrocities. This constant bombardment by the emotional news stories stirred the American people and caused them to demand that the U.S. wage war to free Cuba from unjust Spanish rule."

- The main ideas gleaned from the text are outlined below in shorthand form.
    - "McKin Tarrif 1890 - sugr du free = profits
      1894 tarrif back - insurrect vs Sp
      Police meth ineffctv - guer warf = reconcent policy
      Disease, US news exag - rally free Cu"
- The last step involves reviewing the information by putting the shorthand ideas back into complete sentences.
    - Cuban sugar entered the U.S. duty-free because of the McKinley Tarrif Act of 1890. Profits soared.
    - Sugar tarrifs were reinstituted in 1894, leading to a Cuban insurrection against Spain.
    - Police methods were ineffective against the insurrection, and Cuban guerilla warfare was met with a reconcentration policy by the Spanish.
    - The spread of disease and other problems at reconcentration camps were exaggerated in the U.S. news, prompting a U.S. rally to free Cuba from Spanish rule.

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