

Chapter 10



Effective Practices in Reading: Specialty Supplies

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Chapter 10



Effective Practices in Reading: Specialty Supplies

This chapter deals with the very essence or foundation of adult education: reading and comprehension, the posts and beams used to form the support structure of an academic building. Research has indicated that reading lies at the core of many of the struggles of students with basic skills needs; this is often why, when reading skills are inadequate, the faulty construction affects all areas of academic success. Even if you are not a reading instructor, the very important anatomy of reading found in this chapter will help you to become a better teacher.

How important is this basic skill across the curriculum? The foundational role of reading cannot be understated. Lack of reading skills has been identified by mathematics instructors as one of the key difficulties in solving word problems. Career Technical faculty often report that students have difficulty reading technical manuals. In the workforce, 62.5% of employers identify reading comprehension as an important skill for the workforce and 38.4% of employers report that reading is a major deficiency in new employees with a high school diploma (The Conference Board, p. 13). In *To Read or Not to Read: A Question of National Consequence*, the data on current reading in the United States led to three conclusions. First, Americans are spending less time reading by choice, between 7-12% less time than in the previous decade. Second, essential reading skills are being lost, reducing comprehension. And third, “these declines have serious civic, social, cultural, and economic implications” (National Endowment for the Arts, 2007, p.7). This chapter looks at the essential discipline of reading in three sections. Part I addresses the reading process; Part II discusses effective reading practices; and Part III provides specific metacognitive approaches. We hope that you can use these building materials to assist students with basic skills needs to become more successful readers.



Let's start off with a little quiz about reading!

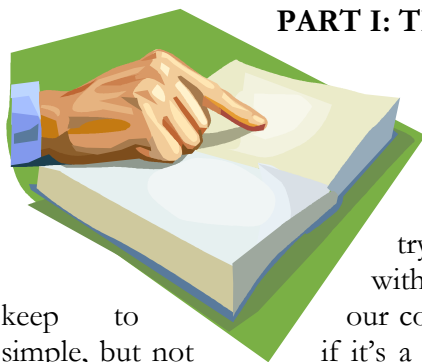
Are the following questions true or false?

1. Reading, once you have learned it as a child, is a relatively simple and straight forward process.
2. Reading is incomplete until comprehension occurs.
3. When people slow down to read and to think about the text,

they are disrupting a beautiful reading flow, one that is necessary for the learning process.

4. The task of comprehending reading involves primarily literal comprehension.
5. Effective practices in reading involve several stages including before reading strategies, during reading strategies and after reading strategies.
6. Metacognitive strategies for reading should only be taught by reading instructors in a reading course, because they are the experts.
7. Reading should not be incorporated into mathematics or writing because it is a discrete skill, which should be taught as discrete subject matter only.
8. Adult students are more likely to master reading if the materials they are using relate to coursework they are presently taking.

*Answers to the quiz are found in Appendix 1.



PART I: THE READING PROCESS

keep to simple, but not needs through this arduous task, but those who teach other subjects may not appreciate all that is involved. Let's begin by reviewing the steps required for successful reading. If you are already more than familiar with them, you may want to skip ahead to the effective practices portion of this chapter.

Most of us who teach are also good readers and take for granted the processes we actually engage in to make meaning from text. It's like walking – something that seems simple to many of us, yet if you've ever had a serious leg injury and are trying to recover your facility with a task you once accomplished without thinking, you know that it involves many difficult steps. Or, to our construction metaphor, it's like hammering a nail – something very if it's a new job to you. Reading teachers lead students with basic skills

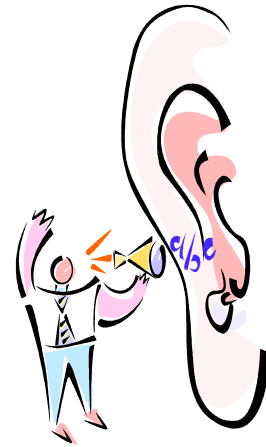
“Only a fool would deny that reading is a complex process. Reading clearly involves many subprocesses, and those subprocesses must be skillfully coordinated” (Gough, Hoover, and Peterson, 2007, p. 1). Reading begins with a process called decoding, which is making meaning from printed text. The decoding process includes the following steps:

- Eyes move across the printed page and register word forms.
- The words are recognized by the brain.
- The brain assigns meaning to those words.
- The words are fitted together into grammatical sentences (syntax) that make sense and have meaning.

For reading to be complete, however, comprehension must follow. To comprehend the reader must:

- Use syntactical information (the organization of words in sentences) to determine sentence meaning, often using inferences and background knowledge to make meaning.

- Relate the meaning of the sentence to all previous sentences, and input the overall meaning to the brain, again using inference and background knowledge.
- “Finally, the reader must decide what to do with this information, if she decides that it is true and valuable, she must incorporate it into her body of knowledge; she must learn” (Gough, Hoover, and Peterson, 2007, p. 2).



An easy way to think about this is to realize that reading and listening are similar communication events. In each case, the individual receives and makes meaning from a message. In reading, the message is in print and must be decoded. In listening, the message is auditory. In both cases the receiver must comprehend the message.

In reading, decoding and comprehension are closely related and problems for the reader can develop in either one or both processes (Gough, Hoover, and Peterson, 2007, p. 2). A simple example of this occurs in reading classes. As a reading teacher, you know the typical answers you might receive if you ask students what they do when they encounter a word that they do not know. If you are not a reading teacher, but are perusing this chapter to learn about how you can help the students in your discipline read better, put down this handbook and conduct an experiment. Ask them. You might be surprised to hear students reply: “I skip the word” or “I stop to look it up in the dictionary”, or very commonly for non-native speakers of English, “Look it up in the dictionary and then translate it into my first language”.

Perhaps you’re pleased to hear this, but think about how much time this takes. When asked how this process affects their reading, students will often reply, “It makes it too difficult to understand.” “It slows me way down”, and when they learn the language of reading they will say, “It hurts my comprehension.” Thus the inability to assign meaning to a word directly affects the comprehension of the entire reading. If you consider the general academic vocabulary that students must master in college and add to that the vocabulary specific to a discipline, you can see that vocabulary is vital for comprehension.

To truly read and make meaning, the reader must be skilled at both decoding and comprehension. As readers become more skilled, they rely less on decoding skills and more on mental structures around comprehension and meaning making. Students learn a great amount of their reading skills from kindergarten to third grade where there is considerable focus on literacy. After third grade the emphasis changes from “learning to read” to “reading to learn”. Little formal instruction on improving reading skills occurs after that time except in learning to read literature. Academic reading ability is just expected to grow as students progress through high school. If this growth does not occur, it may explain why many of our community college students lack skill in college level academic reading. As students get into classes with more sophisticated vocabulary and meaning, we often fail to teach them to learn to read a particular discipline-specific language to gain discipline-specific meaning. This is like failing to teach them how to read building plans. How can they construct meaning or a room in their academic house if they don’t know how to comprehend the plans?

The question is: how best to improve academic reading in community college students? Reading instructors generally hold that adult learners improve reading best by reading actual material relevant to a class, rather than through isolated and repetitive skill exercises and memorization. The skilled teacher uses **authentic** reading experiences to instruct and enhance skills in decoding and comprehension. That typically means using actual college texts or reading material. What is really important for students is that we, as instructors, make very explicit what these decoding and comprehension processes are, how successful readers use them, and then give the learner plenty of opportunity to practice, improve and reflect on his or her skills. If you are not a reading teacher, you can still do this within your discipline. Keep reading! We are going to provide you with exercises you can use in your own classroom to teach and assess these skills.


So, what does this comprehension process actually look like? Silent reading is an internal process of constructing meaning from text. It is impossible to observe what is happening by watching the reader. Mastery of these skills requires assessment by the instructor to provide evidence of reading competency. Constructing meaning through the process of reading is a thinking process that happens on three levels:

- **Literal level:** Understanding the information presented (this is the who, what, when and where). It involves understanding author's main idea or thesis and requires knowledge of vocabulary and organizational structures.
- **Interpretive level:** Understanding what the author meant by what was said (this is the how and why). It includes making inferences and understanding author's purpose and tone.
- **Critical Thinking level:** Analyzing, applying, synthesizing and evaluating the information. The graphic that follows may help illustrate these levels.


Just as in a conversation between two people where communication occurs when the listener understands the meaning of the message being sent, so is reading a conversation between the reader and the writer.

The Complex Task of Reading Comprehension


**Critical Thinking
Comprehension**
Analyzing, Applying, Synthesizing,
Evaluating

An icon on a yellow background showing a person in silhouette thinking, with a lightbulb above their head, a globe to the left, and a briefcase to the right.

Interpretive Comprehension
Understanding why and how the author
said something
Tone and Author's purpose

An icon on an orange background showing a person in silhouette running and catching a lightbulb in a net, with several other lightbulbs floating in the air.

Literal Comprehension
Who, What, Where, When
The author's main idea

A simple icon of a single lit lightbulb.

As readers progress from literal to interpretive comprehension and ultimately to critical thinking, the level of complexity of thought rises. Students cannot critically analyze that which they cannot literally understand. This fact shows itself over and over again in our classrooms. Instructors would like students to analyze a piece of literature or an essay, think critically about something they read about in sociology or political science, or draw a logical conclusion in a science lab. But the student will have difficulty with these thinking tasks, if they are having difficulty *literally* understanding what the author wrote. Reading teachers often ask developmental reading students how they read their math books. Generally, blank stares are the reply! Indeed, as you already know, one of the most frequent complaints of instructors in the disciplines is that students do not (*or cannot*) read their texts.

But – do not give up hope! There is much we can do to help our students.

PART II: EFFECTIVE PRACTICES IN READING

Reading may seem really mysterious. It happens internally, so it seems difficult to demonstrate, but there are many approaches to reading that work well and can be easily learned by classroom teachers and taught to students in both the reading classroom and in the content classroom. Any teacher can take these strategies and employ them in their classroom to help their students better read their textbooks, lab manuals, journal articles, literature and essays.



A Reading Toolbox That Works:

Joel Levine from Southwestern College has developed “Our Reading Toolbox” which he successfully uses in his college reading classes. The approach provides eleven specific tools for reading comprehension that teachers can employ to help students better understand their reading and facilitate deeper interaction with the text. Notice that corresponding with each of the tools are the “elements of thinking” that each tool is designed to achieve. These thinking levels correspond to comprehension levels ranging from literal, to interpretive to critical thinking.

OUR READING TOOLBOX

Elements of Thinking

<p>Paraphrasing Putting a sentence that you have read into your own words.</p>	INFORMATION
<p>Headline Created Creating a headline (title) that you think expresses the main idea of the reading.</p>	PURPOSE
<p>Significant Sentence Selected Selecting the one sentence you think is most important in the reading, and telling why you selected it.</p>	INFORMATION
<p>Vital Question Posed Stating a question to the author or someone in the reading that you would really like an answer to.</p> <p>-----</p> <p>Identifying the main question at issue (problem) raised in the reading.</p>	QUESTION & PROBLEM
<p>Purpose Stating why you think this reading was written.</p>	PURPOSE
<p>SEEI <i>S</i>tating, <i>E</i>laborating, <i>E</i>xemplifying, and <i>I</i>llustrating certain words and concepts in the reading that you need to better understand.</p>	CONCEPTS
<p>Conclusion Identifying what you think is the most important conclusion the author comes to in the reading.</p>	CONCLUSION
<p>Assumptions Stating what you think the author is taking for granted in the reading.</p>	ASSUMPTIONS
<p>Implications & Consequences Stating what you think would happen if we follow, or do not follow what the author is suggesting we do.</p>	IMPLICATIONS & CONSEQUENCES
<p>Solution/Recommendation Stating what you think should be done to deal effectively with the issue or problem being presented in the reading.</p>	INFERENCE
<p>Speaking in the Author's Voice Stating ideas or answering questions about the reading as if you were the author herself or himself.</p>	POINT OF VIEW

Having reviewed the eleven tools, it should be noted that teachers could use all of the tools for a specific reading or choose from among them as appropriate. Think of these tools as specific building supplies that you can employ to construct certain parts of any structure. Like sheet rock or two-by-fours, these tools would work well within a reading class or across disciplines. They could also be used to assess students' abilities early in a semester to ascertain how they would manage these tasks prior to instruction in a reading course, or in a content course to see how well they are able to decipher the course texts. To see a specific assignment in which Joel Levine applies "Our Reading Toolbox" to a reading in his class, see Appendix 2.



Metacognition in Reading:

Within each of the levels of comprehension previously described exist metacognitive techniques that good readers are aware of, use and monitor.

Metacognition is thinking about how one learns and processes information.

Less skilled readers may lack these metacognitive skills, but they can be easily taught.

Let's take our previous vocabulary illustration and show how metacognition may work in a skilled reader versus a less skilled one.

When encountering difficulties with vocabulary or word meaning, a less skilled reader may skip the vocabulary word and just forge on through the reading hoping it will make sense if she continues. The further on she goes, the more and more confused she gets because the more vocabulary she is missing the less meaning she will be able to make from the text. Here's an example from a short scientific text used in a Microbiology class. What do you think a less skilled reader who doesn't stop to look up vocabulary will get out this?

"Prions are resistant to inactivation by heating to 90°C, which will inactivate viruses. Prion infection is not sensitive to radiation treatment which damages virus genomes. Prions are not destroyed by enzymes that digest DNA or RNA. Prions are sensitive to protein denaturing agents, such as phenol and urea" (Black, 2008, p. 301)

In contrast, a skilled reader is aware of the processes she uses in reading and will monitor how well they are working. A skilled reader will know a variety of vocabulary strategies to employ when encountering an unknown word and will know to stop, slow down, read aloud, or annotate, in order to make comprehension more complete. The skilled reader would tackle the above text with a dictionary in hand, learning that the text above describes Mad Cow disease, an infectious and deadly disease caused by an abnormal protein and spread through contaminated meat.

Metacognitive skills including reader's purpose, activating prior knowledge (schema), predicting, and monitoring and correcting incomplete comprehension are means by which skilled learners regulate their own reading. Each will be described in detail later. In addition, an elevated level of thinking about what was read (Bloom's Taxonomy) is ultimately the sign of the accomplished college reader.

In reading, the metacognitive processes can be divided into three parts often referred to as **active reading strategies**. They are:



Before reading strategies

- **Previewing** what is to be read to get an overview of content and structure. Through previewing the reader determines the topic and organization of what is to be read. The reader will also become aware of key vocabulary that she may need to pre learn or pay special attention to.
- **Predicting** what will be covered to begin to actively interact with the text.
- **Generating questions** (mentally or written) that will guide the reading. A simple way to do this is by turning headings and subheadings, and major vocabulary and concepts into how, what, and why questions.
- **Activating prior knowledge** (schema) by which the reader learns more easily because she is connecting the new information to knowledge she already has. Research shows that we build new knowledge by building upon prior knowledge.
- **Determining a purpose for reading** and the level of comprehension required. Not everything needs to be comprehended 100%.
- **Determining an approach** to the reading based on purpose. The reader can decide whether to take notes, summarize, and annotate for deep learning (for a test for example), or just skim the reading for a class discussion.

Active Reading Strategies

Before reading strategies

Previewing
Predicting
Generating questions
Activating prior knowledge
Determining purpose
Determining approach

During reading strategies

Monitoring comprehension
Anticipation – what’s next
Connecting new and old information
Visualizing content
Checking understanding
Vocabulary
Concept maps
Annotations

After reading strategies

Review/reread
Paraphrase and summarize
Self test
Evaluate and synthesize
Reflection

A note here on annotation! Annotating a text is marking it with one’s reaction and questions as one reads. It also involves marking the text for important points, processes, vocabulary and conclusions. It is the way in which the reader **converses** with the author as she reads. Through annotating, a reader can go back to the text and “find” information easily for use in analysis, review and for study.

(See Appendix 3.) Students are often afraid to annotate their texts because they are anxious to resell them at the end of the semester. **Encouraging them to write in their books, while having a negative financial affect, will help them to learn more deeply.** Explaining the options to students may help them to make clearer choices.



During reading strategies:

- **Monitoring comprehension.** What this means is that the reader is conscious of what is happening to him or her as they are reading. They continue to monitor their comprehension to see if they are learning well or losing comprehension.

A simple illustration here: Instructors often ask students if, after reading 20 pages or more of their textbooks have they ever sort of “woken up” and wondered where they had been for the past half hour! The giggles in response to this question indicate that this is quite a common occurrence. Certainly, this has happened to all of us.

If the student had been monitoring her comprehension, she would have stopped herself as soon as she realized she was zoning out and problem-solve a response to help herself “get back into” the reading.

Below are some indicators that the reading is going well and the reader is gaining meaning and should keep reading:

- The ability to anticipate what is coming next.
- The ability to connect new information to prior knowledge.
- The ability to visualize processes, settings, and pictures.
- The ability to check the completeness of one’s understanding in several ways including answering questions, note taking in one’s own words, and annotating the text.

If the reader cannot do the items above, then he or she may correct comprehension in several ways depending on what is causing the problem, such as:

- If there is quite a bit of **vocabulary** that is difficult she may need to pre learn the vocabulary, look it up in the dictionary, work to expand general and academic vocabulary and/or make a point to learn specialized and technical vocabulary
- If the writing is quite technical and dense, the reader knows to **slow down** and extract the meaning from each word and phrase before proceeding.
- If the reader has a more kinesthetic or auditory learning style, he or she may need to **read aloud, make models, draw diagrams or concept maps** to make the meaning clear.

- And often just the simple act of **reading to answer questions**, writing the answers to the questions and/or **annotating** the text will keep the reader engaged.

As you can see, reading needs to be an active process of interaction with the text – a conversation with the author. Instructors often say to students they should read sitting forward, ready to attack, rather than reclining ready to sleep!



After reading strategies involve techniques intended to help the reader remember what was read, attach it to their prior knowledge and long term memory, and think about the material in deeper and different ways. Some of these strategies include:

- **Reviewing or quickly rereading material** to reconnect it into a whole, especially if the reader has had to slow down to understand it. Review any study notes, talk with a study group and connect reading notes with lecture notes.
- **Paraphrase and summarize** difficult passages to check understanding.
- **Self test** on knowledge, memory and application of material.
- **Evaluate and synthesize** the reading by voicing and supporting one's own opinion as it relates to the material. The reader can and should challenge the author when appropriate.
- **Reflecting** on the reading and applying it to new situations, comparing it to other readings and/or applying it to one's own life. Reflecting may also include reflecting on the effectiveness of the reading strategies the student used during the reading, and evaluating the effectiveness of the approaches.

Again, the key here is that college reading is an active process of thinking, applying, reflecting, synthesizing, analyzing and evaluating what was read and how it was read. The following strategies will help students to comprehend the reading that you assign. In addition to detailing the strategies in the next section, the appendix to this chapter contains assignment forms for some of these practices used by reading teachers throughout the state in a variety of disciplines.



Part III: Specific approaches that employ metacognitive techniques

There are tools and techniques -- building supplies if you will -- that students can learn and use to improve reading comprehension across disciplines. A content teacher can take a few minutes at the beginning of a semester to introduce these techniques to their students and then reinforce their use as the semester goes along. Many of these make great in-class activities or can be used as homework that will either be turned in or used as notes for quizzes and tests. They are:

SQ3R:

Survey: Preview the text before reading to ascertain the main topics, organization, and to activate prior knowledge.

Question: Generate a list of questions to guide ones' reading – read with a questioning mind.

Read: Actively read the text with the intention of looking for answers to questions, annotating important points and one's reactions, and interacting with the text.

Recite: After reading, actively do something with what was read, for example write answers to questions, talk about the reading with someone, teach it to a classmate

Review: Review the section that was read to put it back into a coherent whole, review one's notes and annotations, connect reading notes with lecture notes.

This technique is the granddaddy of all textbook reading approaches. It works well for all learning styles. For example, in the “recite” step - in which the reader “does something” with what she has learned – she can appeal to her learning style by talking about the learning (auditory learners) with others (social learners), visualizing or in some other way diagramming what was read (visual learners), and/or taking notes and annotating (kinesthetic learners). See Appendix 4 and 5 for more information on this technique.

KWL+:

This technique seems simple but it is extremely powerful and can be used by everyone all the time! In this technique one asks four questions about what is to be read or learned:

What do you **KNOW** about the subject? (Activates prior knowledge and stimulates commitment to learn).

What do you **WANT** to know about the subject? (Creates intention and purpose for reading).

What did you **LEARN** about the subject from the reading? (Provides review, comprehension check and opportunity for reflection on what was learned).

What do you still want to **LEARN**? (Provides opportunity for deeper exploration).

This is especially helpful when introducing a new reading or a new topic in class. It helps to activate schema, and lets an instructor know where he or she has to help build background knowledge so students will be able to understand the reading or topic. It also helps engage the students in their own learning by having them actively declare what they want to learn from it, and finally it helps the instructor to assess how accurately and completely they learned by how completely they are able to describe their learning either orally or in writing (See Appendix 6).

PPPC:

This strategy involves another method of previewing, predicting and pre-reading to engage in the text, and then a technique for note taking and annotating once one has read. You will see similarities between PPPC, SQ3R and KWL, now that you are becoming expert!

Preview: Preview the selection looking at the topics, organization and to activate prior knowledge.

Predict: Predict what the reading will be about to set expectations, and begin to generate a questioning mind.

Pre-read: Using skimming techniques read the first sentence of every paragraph because that is often where the main idea is in textbooks. It will give the reader a good context for reading the text in depth.

Code: Take notes, write reactions to the text, generate questions that still need answering etc. This is the way to review, record and test what has been learned. (See Appendix 6 for more detail on this technique and others)

According to Mokhtari and Reichard (2002, pp. 249-259) the approaches above can be organized into three metacognitive strategies used by skilled readers:

- *Global strategies* --broad strategies which include the pre-reading strategies above
- *Problem solving strategies* -- which include the comprehension monitoring and correcting strategies above
- *Support Reading strategies* -- which include note taking, paraphrasing and summarizing, annotating and highlighting, and discussing the text with others.

Mokhtari and Reichard have created the Metacognitive Awareness of Reading Strategies Inventory (MARSII) that helps students see what metacognitive strategies they employ and which they may need to develop. The survey is reproduced for you in Appendix 7.

Metacognition is not the goal of reading, but it is a process by which students can become more independent and confident in monitoring their reading comprehension and learning. All teachers can become reading teachers by introducing these strategies to students, adapting them to their specific discipline, and making explicit to their classes how best to learn the material of their discipline. Through metacognitive strategies, students take more control over and responsibility for the reading process and become more self-regulated learners.

Here are a couple of specific examples.

A Biology instructor that we know asks students to use the SQ3R process to study for an exam. The final step is to create possible questions for the exam. Though the instructor does not use all the questions generated, the students end up using them to help them study.



This instructor studied the SQ3R questions and found that those students who could not generate them as part of the assignment could also not pass the exam. It served as a predictor of success and also provided her with a means to identify those students who needed more help.

An English instructor teaches both PPPC and KWL on the first day of class and then asks students to use these methods with several difficult homework texts during the course of the semester. Students who complete a written record of these activities may use their notes for the quiz on the reading during the next class.



This instructor has assessed the efficacy of this method by comparing the quiz scores of those who used the techniques and therefore their notes on the quiz to those who “forgot” to PPPC or KWL and did not. You will not be surprised to learn that those who used the techniques had consistently higher scores. Duh!

Reading Apprenticeship:

Reading Apprenticeship (RA) is an approach to reading that stresses both the affective and cognitive processes that students use to understand and make meaning of complex text. It is an approach originally researched and created in middle and high school that is finding success at the community college level as well. RA is the work of the Strategic Literacy Initiative of the nonprofit organization, WestEd. Explore their information at www.wested.org/cs/sli/print/docs/sli/home.htm. The intention of RA is to help students learn strategies, gain knowledge and improve attitudes for success in literacy. RA focuses on the social, personal, cognitive and knowledge-building dimensions around literacy. Like many of the previously listed metacognitive approaches, it focuses on *how* to read, *why* read (purpose) as well as *what* is read. One advantage of RA is that it is a program that includes extensive professional development for practitioners.

The RA approach focuses on reading in the content classroom. With this approach, the teacher, as expert, models how to read in the content area. Students learn the best way to read and respond in that content area. (Schoenback, Braunger, Greenleaf, and Litman, 2003) Strategies for reading are introduced, and a safe community of sharing is established in the classroom. Students explore their own attitudes about reading and becoming more responsible for their reading. Background knowledge in the subject is also expanded to help the student understand and learn better. In addition, students learn to reflect on what and how they have learned as a part of the process.

Several community colleges in California are successfully implementing the RA approach including Los Medanos and City College of San Francisco. Included in the Appendix is a sample lesson plan that gives a detailed example of how Nancy Ybarra implemented RA in the classroom (Appendix 8), and a reading scaffold used by Lisa King in a class to help students read (Appendix 9).

After reviewing the appendices, what do you notice that RA has in common with the other approaches mentioned above?

Let's conclude this section on reading with the conversation analogy. Have you ever had to converse with someone when you didn't want to? Or have you tried to have a conversation with a person who didn't actively reply to your questions or ask you any questions in response? What happens to the conversation? Is the conversation difficult? Do you find your mind wandering off to other topics? Do you just wish it would all END!!

Reading isn't so much different. A positive attitude toward reading and purpose for reading make reading much more effective. Reading with a questioning mind and actively interacting with the text using annotation and other techniques keeps the conversation going and makes the comprehension much better.

AND....

Have you ever found yourself reflecting later on what was said during a conversation to find the deeper meanings? Or, have you ever had an "AHAH" moment when the meaning of a conversation became clear later after a subsequent event, perhaps?

Just as the full impact of a conversation may not register until later, to get the full impact of reading, the reader must reflect on what was read and attach it to prior knowledge or build the knowledge



base on which to attach it. Just as personal conversation is more or less meaningful depending on what one brings to it, so is reading. The good news is that now you have some tools and techniques to help students engage more fully in their reading and to help them reflect on what they have read.

Integrated Reading and Writing

There are several models currently in use that support the integration of reading and writing as an effective strategy. In these models, the teaching of reading strategies and skills is used to strengthen writing and writing strategies are used to strengthen reading. Remember that reading and listening are parallel processes involving decoding and making meaning. Writing is like speaking. It is through writing – as in speaking – that the message is created. Writers use a process of words, grammar and organization to give structure and exposition to ideas, just as the reader uses words, grammar and organization to decode what is read.



Good readers tend to be good writers. Through reading, learners are exposed to lots of language, vocabulary, the way in which the language is organized and the ways in which messages are composed. Through writing, learners create meaning, and explain ideas. They become the authors.

There are several effective strategies for integrating reading and writing.

- **Co-Requisite Reading and Writing Classes:**

In this structure, an English and reading class at the same level (developmental or college level) may be paired as co-requisites with shared or coordinated student learning outcomes (SLOs). This pairing can be quite formal as in linked classes where the English and reading instructors share assignments, and students take the two classes together as a cohort. In this type of arrangement, the connection between the reading and writing classes is clear and the instructors make explicit these connections.

A less formal structure is when sections of a particular level of English and reading are co-requisites, but there is little coordination of assignments and students do not take the classes as cohorts together. In this case, it is left to the instructors to make explicit connections between the reading and writing processes, but the classes may or may not be learning the same parts of these processes at the same time. Below are the student learning outcomes of a developmental English course (English 905) and reading course (Reading 961). Look at how the SLOs overlap.

English 905: English Fundamentals (one level below college level English)

Upon completion of English 905, students will

- ❖ Write an essay of 500–750 words that has a controlling idea; logical organization based on purpose, topic and audience; multiple levels of development; and sentence correctness.
- ❖ Demonstrate in writing the ability to read a selection, identify its main ideas, analyze those ideas, and arrive at relevant conclusions.

Reading 961: Effective Reading

Prerequisites: READ 960, or ESL 970RW, ESL 970G and ESL 970LS, or qualifying score on the placement test.

Upon completion of Reading 961 the student will:

- Utilize vocabulary skills to comprehend assigned readings.
- Determine and differentiate main ideas and supporting details in assigned readings.
- Make appropriate inferences in assigned readings.

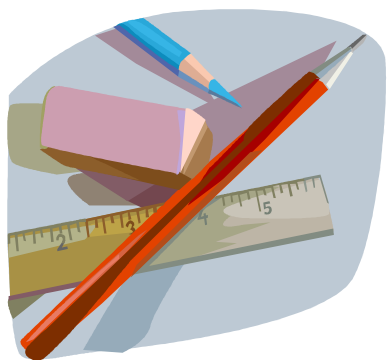
- **Learning Communities with Reading or English Components:**

The learning community movement has taken hold in many community colleges in California. Cañada College in Redwood City is one in which many Learning Communities exist with reading and/or English components. These learning communities are often paired with a course in another discipline and the learning takes place around a shared theme. Students enroll in all the linked courses and learn together as a cohort. The learning communities can range from fully integrated, in which the instructors share all assignments and are often in each others' classes, to less integrated where students learn in a cohort and instructors support the same theme and may agree on some shared assignments, but do not team teach the classes together. For more information on Learning Communities at Cañada College, go to their website at: <http://canadacollege.net/fye/communities.html>.

- **Embedded Reading and Writing Courses:**

A third type of integrated reading and writing course is one in which the reading and writing are integrated into one class. Often in this format, the embedded class meets for less time than the stand alone English and reading classes. For example, each developmental reading and writing class may be three units for a total of six units. Often the embedded class will be a four or five unit class, allowing for economies that occur when for example, students are able to use the same articles for reading practice and writing responses. The connection between reading and writing becomes very clear as, for example, the teacher is able to instruct on the similar structures of main idea (for reading) and topic sentence (for writing) together. In these classes either one teacher trained in both reading and writing instructs, or a pair of teachers (one reading and one writing) team-teach.

For ideas on how to assess these types of course structures, see Chapter 16 of this handbook: *Advanced Assessment: Multiple Measures*. For more in-depth information on this topic, see English Chapter 7 of this handbook on *Integrated Reading and Writing*.



Reading and Mathematics

Reading in mathematics requires a specific approach. Mathematics reading involves deciphering material that is factually very dense and has its own vocabulary that sometimes students find as difficult as learning a foreign language. It also often requires visualizing as one reads. In addition, reading and understanding word problems involves the higher level thinking skills of application, analyzing, and synthesizing, in addition to literal comprehension.

Reading in mathematics requires students to SLOW way down, **reading at approximately 10% of their normal reading rate**, pulling the meaning out of every word, phrase and sentence, and testing understanding before moving on. Students should sketch graphs, study sample problems, and refer back to explanations as they work through homework problems in a chapter.

Mathematics, like learning a foreign language, is progressive. What a student doesn't learn in Chapter 1 will haunt them in Chapter 2, and by Chapter 3 they are often lost. Students need help not only to read mathematics, but also in management skills that teach them to keep current in order to be successful.

Sierra College teaches a workshop on how to read word problems to help students with a major hurdle in mathematics reading. What follows is a description of their program.

Reading and Mathematics Connections

When developmental students have difficulty with reading, they can also have trouble with many other subjects they take while in college. In fact, many educators agree that reading lies at the very heart of all other disciplines. All courses have some component of reading embedded in their content, so it is logical to assume that the inability to effectively decode the written word can greatly hamper the learning process for students.

At Sierra College, mathematics professors agree that reading is an integral part of students' ability to solve word problems. Many of these same professors agree that the computational part is not what causes student difficulty with word problems. In fact, if the problem itself is set up for students without them having to read and decode it, they are able to complete the mathematics portion of the problem. The difficulty arises when students don't read the problem carefully and cannot visualize or interpret the words so that they know what it is they are looking for. That is why the steps of pacing, annotating, translating, and paraphrasing are important to finding success with word problems.

As a means of helping students understand the process of decoding mathematics word problems, Sierra College offers a free ninety-minute Student Success Workshop nearly every semester. Students can attend this workshop and learn a great deal about the process of understanding the reading of word problems, and they are given specific tools to help them turn the written word into a mathematical equation. Below is an explanation of the process mathematics and reading faculty use to teach this workshop as well as handouts they use with students during the workshop itself. Sara Pries, Sierra College mathematics instructor explains the workshop process:

Word Problems Made Easy

I open by talking about word problems being puzzles that need to be taken apart and put back together in a logical sequence. Then each student is given five puzzle pieces that they must put together to form a square. I then talk to them about the importance of understanding what they are reading and of having a logical approach to solving any word problem. I stress that the workshop will not focus on the actual answers but on the process. Then I hand out **“Seven Reading Problems”** (See Appendix 10) for them to do. For example: Is it legal in North Carolina for a man to marry his widow's sister?

Lisa Rochford, reading instructor, then hands out and discusses **“How to Annotate a Text”** and **“Word Problems Step-by-Step”** that go through Pacing, Annotating, Translating and Paraphrasing. Then we give them **“Five Word Problems: Practicing Pace, Annotate, Translate, and Paraphrase”** (see Appendix 9) and model how to use what she has just gone over. We write variable statements and equations for each one but do not work out the equations. We stress being able to sort out what it is they are trying to find (the main idea) and what the supporting details (facts) are.

Lynn Hargrove, mathematics instructor, then hands out and discusses key words and other information on **“Math Facts Information,”** and she goes over **“Tips for Solving Word Problems Involving Multiplication and Division of Fractions,”** **“Solving Application Problems,”** and the **“Three-Step Problem Solving Procedure.”** (See Appendix 11)



Assessing Reading

How do you know that students are reading well? Now that you have seen profiles of effective practices in teaching reading, can you assess if they actually work? Assessing reading outcomes and individual assignments can be done in many ways. Rubrics work well and allow students to know and understand how their work will be scored. The following rubrics have been used in a variety of ways.

The rubric that follows, shows how Michelle Andersen Francis assessed students' annotations in response to lessons on how to annotate a text.

Annotation Rubric

	Did Not Attempt Expectation	Below Expectation	Meets Expectation	Exceeds Expectation
Paraphrasing (writing it in your own words)	There are no notes in the margin.	Annotations are exactly as written by author of text. Is unable to think about what author wants reader to know.	Can think about what the author wants reader to know and can write annotations understandably in margin.	Is able to determine author's intent and write ideas in margin as a paraphrased text.
Structure of annotations	There are no annotations in the margin, but things might be underlined in text.	Annotations in the margin are written without regard for text structure.	Is able to delineate text using underlining in the annotations.	Is able to underline margin annotations, enumerate ideas, and break the text into a logical structure in the annotations.
Ideas in annotations	No annotations.	There are only one - four words written about each paragraph and writing doesn't match main idea.	Ideas in annotations closely match the main ideas, but some details and examples might be missing.	Ideas in annotations cover the main ideas, the details, and any examples that will help the reader later on.
Opinions in the annotations.	There are no opinions expressed.	Annotations are strictly text based and do not include any of the reader's opinions.	Annotations in the margin address reader's opinions about the text.	Annotations in the margin express reader's opinions about the text as well as possible questions and other outside connections to the text.

By Michelle Andersen Francis, reading instructor,

The following rubric shows how instructor Lisa Vasquez, Mission College, uses a very detailed rubric for writing summaries of short stories. Also included, following the rubric, are the documents she uses for preparing students to write the summary. They include: **How To Read A Short Story**; **A Guide to Writing Summaries**; and a **Summary Evaluation Checklist** for students to use to self-evaluate prior to being assessed.

Rubric for Summary Writing

5 (Above Standard)

- The writer clearly addresses all parts of the “during” section from “How to Read a Short Story” handout.
- The first sentence includes the citation (author, title, name of publication, date) for the material being summarized.
- The first sentence includes the topic of the reading and the author’s purpose (to inform, persuade, to entertain).
- The summary includes a clearly, well-presented central idea (topic sentence) with all relevant facts and details taken from the reading text (short story).
- Each main point is supported with evidence (facts, examples, definitions, explanations, reasoning...).
- The writer maintains a consistent organizational structure, including paragraphing where necessary. The structure of the summary generally follows the structure of the writing being summarized and ideas are connected to make the writing flow well.
- The writing includes a variety of sentences and good word choice.
- The summary is in the writer’s own words.
- There are no opinions and/or personal ideas stated in the summary.
- The writing contains good use of transitional/pivotal words to link statements (supporting details) together.
- The summary is 20% or less than the original length of the material.
- The writing contains few errors in conventions of English (grammar, punctuation, capitalization, and spelling). Errors made tend to be nearly “invisible.”

4 (At Standard or Proficient)

- The writer addresses most parts of the “during” section from “How to Read a Short Story” handout.
- The first sentence includes the citation (author, title, name of publication, date) for the material being summarized.
- The first sentence includes the topic of the reading and the author’s purpose (to inform, persuade, to entertain).
 - The summary includes a clearly, well-presented central idea (topic sentence) with most of the relevant facts and details taken from the reading text (short story).
- Most main points are supported with evidence (facts, examples, definitions, explanations, reasoning).
- The writer maintains a consistent organizational structure. There is paragraphing although there may be some mistakes made in when the writer does or does not break for a paragraph. The

structure of the summary generally follows the structure of the writing being summarized but the writer may change the order of a few of the details.

- The writing includes some sentence variety and appropriate word choice.
- The summary is in the writer’s own words.
- There are no opinions and/or personal ideas stated in the summary.
- The writing contains good use of transitional/pivotal words to link statements (supporting details) together.
- The summary is 20% or less than the original length of the material.
- The writing contains some errors in conventions of English (grammar, punctuation, capitalization, and spelling). Errors do not interfere with the reader’s understanding of the writing.

3 (Approaching Standard)

- The writer addresses only parts of the “during” section from “How to Read a Short Story” handout.
- The first sentence does not include the citation (author, title, name of publication, date) for the material being summarized.
- The first sentence does not include a clear topic of the reading and does not include the author’s purpose (to inform, persuade, to entertain).
- The summary may not have a clearly stated central idea (topic sentence) or it may only be suggested, not stated) and may omit important details or include details not in the original text (short story).
- Most main points are not supported with evidence (facts, examples, definitions, explanations, reasoning).
- The writer demonstrates an inconsistent organizational structure and does not demonstrate solid paragraphing. The structure of the summary is not consistent with the writing being summarized.
- The writing contains little sentence variety and simple but acceptable word choice.
- The writing may contain copying of key phrases taken from the reading text (short story) being summarized.
- There are some opinions and/or personal ideas stated in the summary.
- The writing does not contain good/strong use of transitional/pivotal words to link statements (supporting details) together.
- The summary is more or less 20% of the original length of the material.
- The writing contains many errors in the conventions of English (grammar, punctuation, capitalization, and spelling). Errors may interfere with the reader’s understanding of the writing.

2 (Below Standard)

- The writer addresses only parts of the “during” section from “How to Read a Short Story” handout.
- The first sentence does not include the citation (author, title, name of publication, date) for the material being summarized.

- The first sentence does not include the topic of the reading and the author’s purpose (to inform, persuade, to entertain).
- The writing contains a simple central idea (topic sentence) and omits many important facts.
- A few (1-2) main points are supported with evidence (facts, examples, definitions, explanations, reasoning...)
- There is little organizational pattern in the writing. The writing does not demonstrate any paragraphing. Ideas are in a random order and not logical.
- The writing displays a simple sentence variety and simplistic or even incorrect word choice.
- The writing contains copying of key phrases taken from the reading text (short story) being summarized.
- There are opinions and/or personal ideas stated in the summary.
- The writing contains simple use of transitional/pivotal words to link statements (supporting details) together.
- The summary is not a realistic length of 20% or less than the original length of the understanding of the writing.

1 (Ineffective Summary)

- The writer does not address any part of the “during” section from “How to Read a Short Story” handout.
 - The first sentence does not include the citation (author, title, name of publication, date) for the material being summarized.
 - The first sentence does not include the topic of the reading and the author’s purpose (to inform, persuade, to entertain).
 - The writing does not contain a central idea (topic sentence) and omits all important facts.
 - There are no main points supported with evidence (facts, examples, definitions, explanations, reasoning...)
 - There is no apparent organizational pattern in the writing. The writing does not demonstrate any paragraphing. Ideas are in a random order and not logical.
 - The writing displays no sentence variety and incorrect word choice.
 - The writing contains copying of phrases taken from the reading text (short story) being summarized.
 - There are opinions and/or personal ideas stated in the summary.
 - The writing does not contain any use of transitional/pivotal words to link statements (supporting details) together.
 - The summary is not a realistic length of 20% or less than the original length of the material.
 - The writing contains many serious errors in the conventions of English (grammar, punctuation, capitalization, and spelling). Errors interfere with the reader’s understanding of the writing.
-

How to Read a Short Story

Before

1. Look at the story's title. What *might* this story be about?
2. Use and develop your background knowledge about this subject. If the title is "The Lesson" (by Toni Cade Bambara) ask yourself what kind of lessons there are, what lessons you have learned, and so on.
3. Establish a Purpose for reading this story. "Because my teacher told me to" is one obvious purpose, but not a very useful one. Try to come up with your own question, one based perhaps on the title or an idea your teacher recently discussed in class. How about, "Why do we always have to learn the hard way?" if the story is titled "The Lesson"? Of course, you should also be sure you know what your teacher expects you to do and learn from this story; this will help you determine what is important while you read the story.
4. Orient yourself. Flip through the story to see how long it is. Take a look at the opening sentences of different paragraphs, and skim through the opening paragraph; this will give you a sense of where the story is set, how difficult the language is, and how long you should need to read the story.

During

1. Identify the main characters. By "main" I mean those characters that make the story happen or to whom important things happen. Get to know what they are like by asking such questions as "What does this character want more than anything else-and why?"
2. Identify the plot or the situation. The plot is what happens: The sniper from one army tries to shoot the sniper from the other army ("The Sniper"). Some writers prefer to put their characters in a situation: a famous hunter is abandoned on an uncharted island where, it turns out, he will now be hunted ("The Most Dangerous Game").
3. Pay attention to the setting. Setting refers not only to where the story takes place, but when it happens. It also includes details like tone and mood. What does the story sound like: a sad violin playing all by itself or a whole band charging down the road? Does the story have a lonely feeling-or a scary feeling, as if any minute something will happen?
4. Consider the story's point of view. Think about why the author chose to tell the story through this person's point of view instead of a different character; why in the past instead of the present; in the first instead of the third person.
5. Pay attention to the author's use of time. Some short story writers will make ten years pass by simply beginning the next paragraph. "Ten years later..." Look for any words that signal time passed. Sometimes writers will also use extra space between paragraphs to signal the passing of time.
6. Find the crucial moment. Every short story has some conflict, some tension or element of suspense in *it*. Eventually something has to give. This is the moment when the character or the story suddenly changes direction. A character, for example, feels or acts differently than before.
7. Remember why you are reading this story. Go back to the question you asked when you began reading this story. Double check your teacher's assignment, too. These will help you to read more closely and better evaluate which details are important when you read. You might also find your original purpose is no longer a good one; what is the question you are now trying to answer as you read the story?

After

1. Read first to understand ... then to analyze. When you finish the story, check to be sure you understand what happened. Ask: WHO did WHAT to WHOM? If you can answer these questions correctly, move on to the next level: WHY? Why, for example, did the character in the story lie?
 2. Return to the title. Go back to the title and think about how *it* relates to the story now that you have read it. What does the title refer to? Does the title have more than one possible meaning?
-

Guide to Writing Summaries

What is a summary?

A summary is a miniature version of a piece of writing, usually about 20% or less of the length of the original. It includes the main points (events), essential supporting details to the main points (events), and a source of information (citation). Summaries are the author's ideas written (translated) in your own words; they do not include your opinions.

Why write summaries?

1. The process of writing a summary is to identify important ideas and writing them in your own words—which will help you learn the material.
2. The product is the summary itself—it will provide you with good notes for review and emphasize that you understood the material.
Writing a summary will sharpen your reading analysis skills and help you concentrate on the major points (events) from the reading.
3. Writing a summary will stretch your vocabulary as you paraphrase (write in your own words) the author's ideas, points, words...
4. Writing a summary will help you practice writing precisely, using clear and simple grammar.
5. Writing a summary will help you organize and compile information for a research paper.

***Before* the writing process:**

1. Read, mark and annotate the text thoroughly.
2. Ask- what is the writer's purpose?
3. Be sure you understand terminology, vocabulary, phrases...
4. Create an outline, map, flow chart, graphic organizer, Cornell notes as a way of organizing important information for your summary.

***During* the writing process**

1. TYPE THE SUMMARY. ARE YOU AT A COMPUTER RIGHT NOW???
2. TYPE, TYPE, TYPE!!!
3. Work from the marked and annotated text—you have already highlighted the important points (events) and supporting details.
4. The first sentence includes the citation (author, title, name of publication, date) for the material being summarized.
5. The first sentence includes the topic of the reading and the author's purpose (to inform, persuade, to entertain).
6. The summary is to clearly state the main points the author is making about the topic.

7. Each main point is supported with evidence (facts, examples, definitions, explanations, reasoning...) from the article.
8. The summary is in your own words. Check that you have not copied phrases or sentences from the article.
9. You may choose to incorporate one quote (direct or indirect) from the reading that is essential to the understanding of the material.
10. The summary is clear, concise, and makes sense. Keep the language clear.
11. Be as brief as possible; distill ideas and discard unimportant information. Use transitional/pivotal words to link statements (thoughts) together.
12. No personal opinion or personal ideas in summary writing.
13. The summary is relatively free of grammar and spelling errors.
14. The summary is 20% or less than the original length of the material.

After the writing process:

1. Go away from your paper for a while after you have finished writing it. Come back later to proofread it with a fresh mind. It is much easier to spot errors when you distance yourself from the actual writing.
2. Read each sentence out loud. This forces you to slow down and pay attention to each word and phrase. Sometimes you will realize you have spoken something (a word, a word ending, a pause where punctuation is needed, etc.) that you did not write, but need to include or correct.
3. Have someone else read your paper out loud to you. In this way you will find out what you really wrote, including any errors that you missed in your own proofreading.
4. Focus on commonly made errors by students. The most common serious errors that students tend to make are run-ons, fragments, verb form errors, and verb agreement errors.
5. Learn the type of errors you tend to make and focus on fixing those errors. You can learn the type of errors you make from teachers' comments on your papers. Analyze the most common error types and look for them when you proofread.

Examples of how to begin a summary:

Title of magazine and newspaper articles, essays and short story titles are in quotation marks “ ”

In the article “Was he a killer’s accomplice?” by Brandon Bailey he states...

In the article “Was he a killer’s accomplice?” by Brandon Bailey he describes...

In the article “Was he a killer’s accomplice?” by Brandon Bailey he explains...

In the article “Was he a killer’s accomplice?” by Brandon Bailey he informs the reader about...

In the article “Was he a killer’s accomplice?” by Brandon Bailey he persuades the reader to...

Brandon Bailey’s article “Was he a killer’s accomplice?” states...

Brandon Bailey’s article “Was he a killer’s accomplice?” describes...

Brandon Bailey’s article “Was he a killer’s accomplice?” explains...

Brandon Bailey’s article “Was he a killer’s accomplice?” informs the reader about...

Brandon Bailey’s article “Was he a killer’s accomplice?” persuades the reader to...

Book titles, names of magazines (Time, Newsweek ...) and names of newspapers (San Jose Mercury News, New York Times ...) are underlined

In the book A Piece of Cake by Cupcake Brown she states...

In the book A Piece of Cake by Cupcake Brown she describes...

In the book A Piece of Cake by Cupcake Brown she explains...

In the book A Piece of Cake by Cupcake Brown she informs the reader about...

In the book A Piece of Cake by Cupcake Brown she persuades the reader to...

In the book A Piece of Cake by Cupcake Brown she entertains the reader with...

Cupcake Brown's book A Piece of Cake states...

Cupcake Brown's book A Piece of Cake describes...

Cupcake Brown's book A Piece of Cake explains...

Cupcake Brown's book A Piece of Cake informs the reader about...

Cupcake Brown's book A Piece of Cake persuades the reader to...

Cupcake Brown's book A Piece of Cake entertains the reader with...

Summary Evaluation Checklist

Yes	No	Evaluation Points
		1. The summary clearly addresses all parts of the “during” section from “How to Read a Short Story” handout.
		2. The first sentence includes the citation (author, title, name of publication, date) for the material being summarized
		3. The first sentence includes the topic of the reading and the author’s purpose (to inform, to persuade, to entertain).
		4. The summary includes a clearly, well-presented central idea (topic sentence) with all relevant facts and details taken from the reading text (short story).
		5. Each main point is supported with evidence (facts, examples, definitions, explanations, reasoning...) from the reading.
		6. The structure of the summary follows the structure of the reading being summarized and ideas are connected to make the summary flow well.
		7. The summary includes a variety of sentences and good word choice. (The summary is clear, concise, and makes sense.)
		8. The summary is in your own words.
		9. There are no opinions and/or personal ideas stated in the summary.
		10. The summary contains good use of transitional/pivotal words to link statements (supporting details) together.
		11. The summary is 20% or less than the original length of the material.
		12. The summary is relatively free of grammar and spelling errors.

Lisa Vasquez, reading instructor, San Jose City College

The following rubric is one used by Cynthia Silverman at El Camino College that describes student performance across several reading courses:

Reading Rubric English 80, 82, 84

- 6. Evidence of a critical reader who clearly gets the writer's point and thoughtfully engages the writer in a conversation about the text:**
 - finds stated main idea(s) or thesis and can infer implied main idea(s) or thesis
 - interprets information and ideas beyond a focus on the literal meaning of sentences and paragraphs
 - makes connections between parts of text, other texts, and prior knowledge.
 - reflects on the significance of the issues, ideas, and values embedded within text.
 - evaluates and challenges the information in text as well as the conclusions drawn by the author.
- 5. Evidence of a sometimes critical reader who clearly gets the writer's point and has begun to engage the writer in a conversation about the text:**
 - finds/restates main idea(s) and thesis
 - sometimes interprets information and ideas in addition to a focus on the literal meaning of sentences and paragraphs
 - sometimes makes connections between parts of text, other texts, and prior knowledge.
 - sometimes reflects on the significance of the issues, ideas, and values embedded within text.
 - sometimes evaluates and challenges information in text and the conclusions drawn by the author.
- 4. Evidence of a literal reader who gets the writer's point:**
 - can find the stated main idea/thesis in texts, but may have difficulty restating the point
 - focuses on the literal meaning of words, sentences, and paragraphs in text.
 - may make connections between parts of text but not to other texts, or prior knowledge
 - may reflect on the issues, ideas, and values embedded in the text
 - may evaluate the information in the text but may not challenge the conclusions drawn by the author.
- 3. Evidence of a struggling reader who attempts to get the writer's point:**
 - may be able to locate the main idea/thesis of a text
 - attempts to make sense of the whole text by focusing on words and sentences
 - sometimes makes personal connections to text
 - may reflect on sentence or paragraph meaning
 - accepts author's information and conclusions without challenge
- 2. Very limited evidence of a struggling reader who:**
 - may understand parts of text without understanding the whole
 - may focus on personal reactions unrelated to text
 - may reflect on meaning of isolated words or sentences
 - does not evaluate information or the conclusions drawn by the author
- 1. Reader does not independently respond to text** (Cynthia Silverman, El Camino College):

The following rubric was adapted from one used at Maricopa Community Colleges and gives levels of skills from Novice to Masterful in reading across college level reading skills.

Reading Rubric

Adapted from San _____ Rubrics, Maricopa Community Colleges.

	Vocabulary	Literal Comprehension	Inferential Thinking	Critical Thinking	Reading Strategies
Masterful <i>Exemplary College Reading Skills</i>	Determines, understands, and recalls meanings of new vocabulary words through context clues	Independently use main idea, supporting details and organizational patterns to guide reading approach to new reading situations.	Independently analyzes written materials for the following elements (when applicable): writer's purpose, tone, audience, bias, and point of view, allusions and assumptions.	Evaluates the logic and accuracy of evidence in support of the writer's main idea • Independently applies critical reading skills to support acceptance or rejection of written materials	Independently varies the use of critical reading techniques according to the type of material and purpose for reading, particularly for study reading tasks
Skilled <i>Expected College Level Reading Skills</i>	Determines and understands meanings of new vocabulary words through context clues	Uses main idea, supporting details and organizational patterns to guide reading approach in assigned reading situations.	Identifies the following elements (when applicable) in written material: writer's purpose, tone, audience, bias, and point of view, allusions and assumptions.	Applies critical reading skills to support acceptance or rejection of written materials, although not completely independently Identifies the logic and accuracy of evidence in support of the writer's main	Varies the use of critical reading techniques according to the type of material and purpose for reading, particularly for study reading tasks, although not completely independently
Able <i>Expected College Level Reading Skills</i>	Sometimes determines meanings of new vocabulary words through context clues, although sometimes avoids new words	Sometimes uses main idea, supporting details and organizational patterns to guide reading approach in assigned reading situations.	Sometimes identifies the following elements (when applicable) in written material: writer's purpose, tone, audience, bias, and point of view, allusions and assumptions	Sometimes identifies general support sentences • Applies literal reading skills to comprehend and support acceptance or rejection of written materials, although not independently	Uses critical reading techniques according to the type of material and purpose for reading, particularly for study reading tasks with teacher prompting
Developing <i>Basic College Level Reading Skills</i>	Determines meanings of new words through context clues with teacher prompting, otherwise avoids new words.	Uses main idea, supporting details and organizational patterns to guide reading approach in assigned reading situations with teacher prompting	Can sometimes identify language devices and language adaptations in written materials when directed that these are in the material	Rarely comprehends enough of written materials to logically comprehend, accept or reject the concepts	Uses the same literal reading techniques for all types of written materials regardless of type or purpose, even though study reading requires specific types of reading techniques
Novice <i>Beginning College Level Reading Skills</i>	Generally avoids new words in written materials.	Has difficulty in identifying main ideas, general support sentences and organizational patterns.	Has difficulty identifying language devices and language adaptations in written material even when directed that these are in the material.	Rarely comprehends enough of written materials to logically comprehend, accept or reject the concepts	Has difficulty using literal reading techniques for written materials regardless of type or purpose, even though study reading requires specific types of reading techniques
No Score	Response is not adequate for scoring	Response is not adequate for scoring	Response is not adequate for scoring	Response is not adequate for scoring	Response is not adequate for scoring

A Last Word

Reading is a complex process that is fundamental to student success in college, one that is critical if students are to successfully construct a building to house their academic dreams. The good news, which we hope we've made clear in this chapter, is that **all** students can improve their reading efficacy across disciplines. This requires all college teachers to be reading teachers. It is important for instructors to share strategies that work and their own insights into how they metacognitively manage their own reading in their discipline. Hopefully, with the tools and techniques, the building supplies and toolboxes included in this chapter you will feel empowered to assist students to erect a strong and enduring edifice, one that will serve as a lodge for their college and career success.

Appendix Chapter 10



Effective Practices in Reading: Specialty Supplies

Appendix 1: Answers to the Quiz

Appendix 2: Our Reading Toolbox Applied to a Reading by Cesar Chavez

Appendix 3: SQ3R - How to Read a Textbook

Appendix 4: Annotating a Text

Appendix 5: SQ3R Scaffold

Appendix 6: KWL+ & PPPC

Appendix 7: MARSI

Appendix 8: Reading Apprenticeship Lesson Plan

Appendix 9: Reading Apprenticeship Reading Journal and Vocabulary Lesson

Appendix 10: Seven Reading Problems

Appendix 11: Reading and Math

Appendix 12: Resources for Chapter 10

Appendix 1

Answers to the Quiz

Answer the following questions, true or false?

1. Reading, once you have learned it as a child, is a relatively simple and straight forward process.
FALSE. There are many activities before, during and after reading which must be learned to fully decode any reading material. It increases in complexity with various reading material.
2. Reading is incomplete until comprehension occurs.
TRUE.
3. When people slow down to read and to think about the text, they are really disrupting a beautiful reading flow, necessary to learn.
FALSE It allows cognition which is essential for true reading to occur.
4. The task of comprehending reading involves primarily literal comprehension.
FALSE There are 3 levels of comprehension.
5. Effective practices in reading involve several stages including before reading strategies, during reading strategies and after reading strategies.
TRUE
6. Metacognitive strategies for reading should only be taught by reading instructors in a reading course, because they are the experts.
FALSE
7. Reading should not be incorporated into math or writing because it is a discrete skill, which should be taught as discrete subject matter only.
FALSE
8. Adult students are more likely to master reading if the materials they are using relate to coursework they are presently taking.
TRUE

Appendix 2

Our Reading Toolbox Applied to a Reading by Cesar Chavez

Statement from César Chávez, Sacramento, April 3, 1991

A transcript of this speech is in the United Farm Workers Papers, Wayne State University.

Some people may ask, “Why should the farm workers be concerned about the condition of public schools in California?”

Let me answer them: Who do you think are in the public schools today in California?

Public schools serve more farm workers than any other publicly financed social institution in society.

Public schools provide the greatest opportunity for upward mobility to Hispanics and to all ethnic minorities in this state.

Yet today, it is a Republican governor and his allies in the legislature who are less concerned than we are about preserving public schools. That is ironic because it was not always the case.

In the 1960s and early ’70s, another Republican governor—Ronald Reagan—was leading the fight for more support of public education. But there was a big difference. Back then, the majority of public school children were white, and they were from middle- or upper middle-income families.

Today, the majority of children in our public schools are minority—African American, Hispanic, Asian—and they are from poor and working-class families.

Back then, under Ronald Reagan, Californians spent 5 cents out of every dollar of personal income on public schools. Today, under Pete Wilson, Californians spend a little over 3 cents out of every dollar on education. And if he has his way, it will go down even more.

There is another institution in society that is funded by the state and that is dominated by minorities: the state prisons—and they have fared very well.

Over the last nine years—under Governor Deukmejian and now Governor Wilson—California has carried out a policy of dramatically expanding state prisons while it starves public schools.

What message do those priorities send? Does this mean that the only way our sons and daughters can get recognition from the state of California is by using drugs and committing crimes?

We have looked into the future and the future is ours! Asians and Hispanics and African Americans are the future in California. That trend cannot be stopped. It is inevitable.

Then why do they want to cut funds for schools and other vital services—now? Why do Governor Wilson and his allies seek to reduce the commitment to public education—now? If the majority of children in school were white and if they lived in affluent suburban communities, we wouldn’t even be debating how much money to spend on public education.

But it is *our* children—the children of farm workers and Hispanics and other minorities—who are seeking a better life. It is for them, for their future—and for the future of California—that we must say “no” to suspending Proposition 98.

We must say “no” to cutting essential services for the needy instead of tax loopholes for the wealthy.

We must say “no” to making *our* children and *their* teachers scapegoats for the budget crisis.

THE WORDS OF CESAR CHAVEZ

Directions:

Read the words of Cesar Chavez concerning public education in California.
Use “Our Reading TOOLBOX” to respond to the following:

- Create a **headline** (title) for these words that could be used if we wanted to have this put in a newspaper.

- Select one sentence that you think is **most significant** in these words of Cesar Chavez.

- **Paraphrase** this sentence that you selected as being most significant.

- Tell **why** you selected this sentence as being the most significant.

- Complete this sentence: Cesar Chavez’s **purpose** in saying these words was

- Identify the main **question at issue (problem)** that Cesar Chavez raises in the reading.

- Complete this sentence: If we fail to follow Cesar Chavez’s words, the **implications** and **consequences** are

- State your **solution/recommendation** for what should be done to effectively deal with the issue being presented by Cesar Chavez in the reading.

Joel Levine
Southwestern College

OUR READING TOOLBOX	Elements of Thinking
Paraphrasing Putting a sentence that you have read into your own words.	INFORMATION
Headline Created Creating a headline (title) that you think expresses the main idea of the reading.	PURPOSE
Significant Sentence Selected Selecting the one sentence you think is most important in the reading, and telling why you selected it.	INFORMATION
Vital Question Posed Stating a question to the author or someone in the reading that you would really like an answer to. ----- Identifying the main question at issue (problem) raised in the reading.	QUESTION & PROBLEM
Purpose Stating why you think this reading was written.	PURPOSE
SEEI <u>S</u> tating, <u>E</u> laborating, <u>E</u> xemplifying, and <u>I</u> llustrating certain words and concepts in the reading that you need to better understand.	CONCEPTS
Conclusion Identifying what you think is the most important conclusion the author comes to in the reading.	CONCLUSION
Assumptions Stating what you think the author is taking for granted in the reading.	ASSUMPTIONS
Implications & Consequences Stating what you think would happen if we follow, or do not follow what the author is suggesting we do.	IMPLICATIONS & CONSEQUENCES
Solution/Recommendation Stating what you think should be done to deal effectively with the issue or problem being presented in the reading.	INFERENCE
Speaking in the Author's Voice Stating ideas or answering questions about the reading as if you were the author herself or himself.	POINT OF VIEW

Appendix 3 Annotating a Text

These are the handouts Lisa Rochford, Reading Instructor, gives out to discuss and model “**How to Annotate a Text**”, “**Word Problems Step-by-Step**”, and “**Five Word Problems: Practicing Pace, Annotate, Translate, and Paraphrase.**”

How to Annotate a Text

As an “active reader,” you already know that when you read textbook assignments, you should have questions in your mind. As you read, you should be looking for the answers to these questions. You should also have a pencil in hand so that you can “annotate” your text. As the word suggests, you “take notes” in your textbook.

Unlike “highlighting,” which is a passive activity, the process of annotating text helps you to stay focused and involved with your textbook. You’ll find that the process of taking notes as you read will help you to concentrate better. It will also help you to monitor and improve your comprehension. Annotating will also help you find important concepts for review. If you come across something that you don’t understand or that you need to ask your instructor about, you’ll be able to quickly make note of it, and then go on with your reading.

The following is a list of some techniques that you can use to annotate text:

- Underline important terms
- Circle definitions and meanings
- Write key words and definitions in the margin
- Signal where important information can be found with key words or symbols in the margin
- Write short summaries in the margin at the end of sub-units
- Write the questions in the margin next to the selection where the answer is found
- Indicate the steps in a process by using numbers in the margin
- Develop a personal system of symbols and abbreviations in the margins to find information quickly:

Symbols you can use to annotate. There are, naturally, many more symbols that could work well, but these are a place to start:

* ? + - →

Abbreviations you can use to annotate:

Def-definition

Sum-summary or summary statement

Ex-example

Questions to ask yourself:

Have you noted the source and date of the material or lecture?

Have you accurately captured all of the main ideas?

Can you summarize or paraphrase the material?

Word Problems Step-by-Step

The most important issue with any difficult reading problem is to establish a meaningful process. Here are some steps to think about in establishing your own process:

Before you begin, make sure you do two things:

- A. You THOROUGHLY review the math concepts you will be learning
- B. You know the terminology of the discipline

1. Pace (AKA, Reading Speed)

Make sure you slow down enough to read every word. In any chunk of text, there are more important items and less important items. An important rule of thumb is “The more difficult the text, the slower your pace.”

TIP: Touch every word with the tip of your pen or pencil. This will make sure your eye catches every word and will help you slow down.

TIP: You will need to read the problem at least twice. Read it slowly, using the above tip, before you do anything else. That way, you will get the actual comprehension out of the way.

II. Annotate (AKS, Mark the page)

If you annotate as you go, you are processing the information twice. Once to understand the words themselves and again to judge whether you should mark it or not. Consider crossing out unnecessary or introductory information.

TIP: Use a highlighter, different colored pen, or a system of notations (circles, stars, etc.) to draw your eye to the important pieces of information in the problem.
ALWAYS DO THIS ON YOUR SECOND READ THROUGH.

****Make sure you read the problem through at least once before you begin to annotate****

III. Translate (AKA, Say It In Math Language)

Take your annotations and carefully translate them into math language.

TIP: Make sure you have a thorough understanding of the math concepts you are learning before you begin your word problems. A review of terms (sum, add, subtract, divide) before you attempt a word problem is a very good idea.

SEE STEPS TO COMPLETE BEFORE YOU START

IV. Paraphrase (AKA, Say IT in Your Own Words)

Before you begin to solve your equation, see if you can say it to yourself using different words. If you can do this easily, you understand what you are doing. If you can't, you need to review. This step can also include visualization, drawing pictures or any other method you know that will allow you some ownership of the information you need.

TIP: Again, using your pencil, make sure you have accounted for everything you marked in your equation. Make necessary adjustments.

Five Word Problems: Practicing Pace, Annotate, Translate, and Paraphrase

1. Jim bought an 11-piece set of golf clubs for \$120, one dozen golf balls for \$9, and a pair of golf shoes for \$45. How much did he spend in all?
2. A hospital had 20 bottles of thyroid medication with each bottle containing 2,500 5-gram tablets. It gave 5 bottles of tablets to the Red Cross. How many tablets does the hospital have left?
3. A roofing company has purchased 1,134 squares of roofing material. One square measures 10 feet by 10 feet. If each cabin needs 9 squares of material, find the number of cabins that can be roofed.
4. A theatre owner wants to provide enough seating for 1,250 people. The main floor has 30 rows of 25 seats in each row. If the balcony has 25 rows, how many seats must be in each balcony row to satisfy the owner's requirements?
5. A Boeing 747 traveling 675 miles per hour carried 254 passengers. After three hours, it landed in Atlanta where 133 passengers deplaned before it continued on to Washington, D.C., its final destination, 900 miles away. How many passengers deplaned in Washington?

Appendix 4: SQ3R

How to Read a Textbook

One technique recommended for textbook reading is called **SQ3R**. The steps in SQ3R are as follows:

Survey: Spend no more than 10 minutes getting a “preview” of what is in the chapter. Doing this gives you an idea of how the chapter is organized. The steps to survey a textbook are:

1. Examine the **title** of the chapter. This tells you the subject you will be reading about.
2. Read **headings and subheadings** and notice the relationship between the important headings in each chapter. This tells you the major areas of information contained in the chapter.
3. Look at **diagrams, graphs, pictures and other visuals**. They give you more information about the chapter.
4. Quickly **skim the introductory and concluding sections** of the chapter. This tells you the major points to remember.
5. **Read any study questions** or review activities in the chapter. This tells you what you will need to learn and remember.
6. Now try to **predict** what the chapter will be about and **begin thinking about what you already know about these topics**. Using this technique is an excellent way to building knowledge and interest on a topic by “**activating your schema**” and helping you **organize to remember** what you have learned. **This technique can be used in all your classes to help you learn and remember.**

Question: Always read your textbooks with the purpose of answering questions. This will keep you actively involved in your reading and will help your concentration. To create questions you should:

1. Using **How, What, and Why** (and less importantly who, when, and where) turn chapter headings, subheadings, and italicized words into questions. You will read each section to find answers to these questions. **AND/OR**
2. Use the **study questions** in the chapter to guide your reading. Read to answer the study questions. **AND/OR**
3. **Always be asking:** What is the author’s main point and how is s/he supporting it?

Read: Now read the chapter, section by section, and **underline** as you find the answers to your questions. You should **number the answers** to your questions as you find them. You can also **annotate in the margin** of the book as follows:

? = If you do not understand something.

! = Something that looks important

T = This is probably going to be on a test.

V = Important vocabulary

C = This is a very important conclusion.

Write down any comments or questions you may have as you read. Agree with the author, challenge the author, connect this information with lecture and other readings.

Recite: Recite means to do something with the answers to your questions. Say them out loud, or write the answers down in a question and answer format to achieve a good set of study notes.

Review: Now that you have read each chapter section by section, do a final review. This final review pulls the entire chapter back together again. You should:

1. Reread each main heading
2. Review underlined and highlighted sections
3. Review your questions and answers again
4. Do all of this within 24 hours of your initial reading to have maximum retention.

Dianne McKay Reading 961 Mission College

Appendix 5 SQ3R Scaffold

The following handout can be used to scaffold students through a reading using the SQ3R steps. Students fill it out and turn it in as homework. From it the instructor can see how well the student is learning the material and the quality of the reading that is occurring.

Name: _____

How to Read a Textbook

This assignment is designed to help you apply the SQ3R technique to reading your textbook. Refer to the handout for more detail on completing each step.

Survey: Conduct a survey of the chapter or section of the chapter. What do you expect to learn in this section?

Freewrite: Activate your schema by writing down everything you already know about these topics.

Question: Write at least 5 Questions based on your survey to help guide your reading. Use “How”, “What”, “Why”. Use separate paper.

Read: Read the chapter to find the answers to your questions. Highlight and annotate as you go.

Recite: On separate paper, write the answers to your five questions in Question and Answer format.

Review: Review your questions and answers.

Finally, answer the following questions on separate paper: How well did you learn the material in this section? What contributed to your learning or lack of learning? Is SQ3R getting easier for you? Why or Why not?

Dianne McKay
Reading 961
Mission College

Appendix 6 KWL+ & PPPC

This example elaborates on KWL+ and PPPC. It also shows other prereading strategies.

PRE-READING STRATEGIES: The following strategies are designed to take you into, through, and in some cases beyond a variety of reading situations. They will help you to assimilate new information more easily and organize your study time more effectively.

KWL+

Step K: What Do I Know?

brainstorm
generate categories for ideas

Purpose: to activate schema and prepare to assimilate new information in an organized way

Step W: What Do I Want to Know?

develop interests and curiosities
ask questions

Purpose: to encourage active reading

Step L: What Did I Learn?

write what has been learned
use new learning as a set of reading notes

Purpose: to review and record new information for later reference

Step + What Do I Still Want to Learn?

check to see which questions (from Step W) still need to be answered
add any additional questions
what further research needs to be done?

Purpose: to develop additional reading projects, outline new areas of study

KWL+ works best when you are reading something about which you have some schema

PPPC Preview*Predict*Pre-read*Code

Preview To preview a selection, look for the title, information about the author, sub-headings, graphics, study questions, italicized or bolded words, sections, previews, or summaries

Purpose: to activate schema and to create expectations about the reading

Predict What will this reading be about? How long will it take?

Purpose: to create expectations, raise questions, and help with time management

Pre-read Read the first sentence of every paragraph. What main points do you think will be covered?

Purpose: to focus expectations, raise questions, create and activate schema

Code Take concise and relevant notes on main ideas, questions, comments, unfamiliar words, important details. Don't be afraid to write on your book.

Purpose: to record and review what you've learned

PPPC works even when you know nothing at all about the reading

BRAINSTORMING: Jot down ideas about a topic related to the reading; organize ideas into categories

Purpose: to activate schema and prepare to assimilate new information in an organized way

FREEWRITING: Write a few paragraphs about the topic the reading covers

Purpose: to activate schema and prepare to assimilate new information

Elizabeth Terzakis, reading and English professor, Cañada College

Appendix 7 MARSI

This is the inventory that can help students ascertain which metacognitive skills they use and to what level they use them.

Metacognitive Awareness of Reading Strategies Inventory (MARSI)

DIRECTIONS: Listed below are statements about what people do when they read academic or school-related materials such as textbooks, library books, etc. Five numbers follow each statement (1, 2, 3, 4, 5) and each number means the following:

- **1** means “I **never or almost never** do this.”
- **2** means “I do this **only occasionally.**”
- **3** means “I **sometimes** do this.” (About **50%** of the time.)
- **4** means “I **usually** do this.”
- **5** means “I **always or almost always** do this.”

After reading each statement, **circle the number** (1, 2, 3, 4, or 5) that applies to you using the scale provided. Please note that there are **no right or wrong answers** to the statements in this inventory.

TYPE	STRATEGIES	SCALE				
		1	2	3	4	5
GLOB	1. I have a purpose in mind when I read.	1	2	3	4	5
SUP	2. I take notes while reading to help me understand what I read.	1	2	3	4	5
GLOB	3. I think about what I know to help me understand what I read.	1	2	3	4	5
GLOB	4. I preview the text to see what it's about before reading it.	1	2	3	4	5
SUP	5. When text becomes difficult, I read aloud to help me understand what I read.	1	2	3	4	5
SUP	6. I summarize what I read to reflect on important information in the text.	1	2	3	4	5
GLOB	7. I think about whether the content of the text fits my reading purpose.	1	2	3	4	5
PROB	8. I read slowly but carefully to be sure I understand what I'm reading.	1	2	3	4	5
SUP	9. I discuss what I read with others to check my understanding.	1	2	3	4	5
GLOB	10. I skim the text first by noting characteristics like length and organization.	1	2	3	4	5
PROB	11. I try to get back on track when I lose concentration.	1	2	3	4	5
SUP	12. I underline or circle information in the text to help me remember it.	1	2	3	4	5
PROB	13. I adjust my reading speed according to what I'm reading.	1	2	3	4	5
GLOB	14. I decide what to read closely and what to ignore.	1	2	3	4	5
SUP	15. I use reference materials such as dictionaries to help me understand what I read.	1	2	3	4	5
PROB	16. When text becomes difficult, I pay closer attention to what I'm reading.	1	2	3	4	5
GLOB	17. I use tables, figures, and pictures in text to increase my understanding.	1	2	3	4	5
PROB	18. I stop from time to time and think about what I'm reading.	1	2	3	4	5
GLOB	19. I use context clues to help me better understand what I'm reading.	1	2	3	4	5
SUP	20. I paraphrase (restate ideas in my own words) to better understand what I read.	1	2	3	4	5
PROB	21. I try to picture or visualize information to help remember what I read.	1	2	3	4	5
GLOB	22. I use typographical aids like bold face and italics to identify key information.	1	2	3	4	5
GLOB	23. I critically analyze and evaluate the information presented in the text.	1	2	3	4	5
SUP	24. I go back and forth in the text to find relationships among ideas in it.	1	2	3	4	5
GLOB	25. I check my understanding when I come across conflicting information.	1	2	3	4	5
GLOB	26. I try to guess what the material is about when I read.	1	2	3	4	5
PROB	27. When text becomes difficult, I re-read to increase my understanding.	1	2	3	4	5
SUP	28. I ask myself questions I like to have answered in the text.	1	2	3	4	5
GLOB	29. I check to see if my guesses about the text are right or wrong.	1	2	3	4	5
PROB	30. I try to guess the meaning of unknown words or phrases.	1	2	3	4	5

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Metacognitive Awareness of Reading Strategies Inventory
SCORING RUBRIC

Student Name: _____ Age: _____ Date: _____

Grade in School: 6th 7th 8th 9th 10th 11th 12th College Other

1. Write your response to each statement (i.e., 1, 2, 3, 4, or 5) in each of the blanks.
2. Add up the scores under each column. Place the result on the line under each column.
3. Divide the score by the number of statements in each column to get the average for each subscale.
4. Calculate the average for the inventory by adding up the subscale scores and dividing by 30.
5. Compare your results to those shown below.
6. Discuss your results with your teacher or tutor.

Global Reading Strategies (GLOB Subscale)	Problem- Solving Strategies (PROB Subscale)	Support Reading Strategies (SUP Subscale)	Overall Reading Strategies
1. _____	8. _____	2. _____	GLOB _____
3. _____	11. _____	5. _____	
4. _____	13. _____	6. _____	PROB _____
7. _____	16. _____	9. _____	
10. _____	18. _____	12. _____	SUP _____
14. _____	21. _____	15. _____	
17. _____	27. _____	20. _____	
19. _____	30. _____	24. _____	
22. _____		28. _____	
23. _____			
25. _____			
26. _____			
29. _____			
_____ GLOB Score	_____ PROB Score	_____ SUP Score	_____ Overall Score
_____ GLOB Mean	_____ PROB Mean	_____ SUP Mean	_____ Overall Mean

KEY TO AVERAGES: 3.5 or higher = High 2.5 – 3.4 = Medium 2.4 or lower = Low

INTERPRETING YOUR SCORES: The overall average indicates how often you use reading strategies when reading academic materials. The average for each subscale of the inventory shows which group of strategies (i.e., global, problem-solving, and support strategies) you use most when reading. With this information, you can tell if you are very high or very low in any of these strategy groups. It is important to note, however, that the best possible use of these strategies depends on your reading ability in English, the type of material read, and your purpose for reading it. A low score on any of the subscales or parts of the inventory indicates that there may be some strategies in these parts that you might want to learn about and consider using when reading (adapted from Oxford 1990: 297-300).

Appendix 8

Reading Apprenticeship Lesson Plan

This lesson plan shows how one instructor uses Reading Apprenticeship in a specific class. It includes the lesson plan and the rubric and means of assessment of the lesson.

Nancy Ybarra Los Medanos College

English 70 Teaching Community Lesson Plan/Assessment #2

Course Outcome: Read to make meaningful connections, personally, socially and academically.

Learning Outcome for this Lesson : After reading an article or essay, students will identify the author's thesis and main supporting points and write a concise summary.

Reading Apprenticeship Model: Dimension Addressed

This lesson addresses both the cognitive and knowledge building dimensions of the reading apprenticeship framework

Assessment Criteria

High: The summary begins with a topic sentence that includes the author and title of the work being summarized as well as a paraphrased statement of the author's thesis.

This is followed by paraphrased statements of the author's main ideas and conclusion. The use of transitional phrases makes the summary coherent and helps the reader easily follow the author's main points. There is no reference to the ideas and opinions of the person writing the summary. Spelling and sentence errors are minimal or non-existent.

Medium: The summary begins with a topic sentence that includes the author and title of the work being summarized as well as a paraphrased statement of the author's thesis. This is followed by statements of the author's main ideas, but they may not be completely paraphrased and one or more key ideas may be omitted. The summary may be a little difficult to follow because main ideas are not well linked by transitional words or phrases. There are three or more sentence errors and/or spelling errors.

Low: The topic sentence does not include the author's thesis and the following sentences omit several main ideas of the author. The summary is difficult to follow because main ideas are not linked with transitional words or phrases. Spelling and sentence errors make the summary difficult to read. .

Lesson Plan:**Anticipation Guide:** Prelude to reading “Romantic Love”

Before reading the article which they will eventually be asked to summarize and respond to, students are asked to “take a position” on the following statements. Students literally move to the right, left or middle of the classroom, depending on whether they agree, disagree or partially agree with the these statements. They are asked to defend their position based on their knowledge and personal experience.

1. Love is blind.
2. I believe in love at first sight.

After this “debate”, students read the article “Romantic Love” in their text, *Connections*.

Background Knowledge Probe: What do you know about writing a good summary?

Read page 51 in your text, *Connections*: “What is a summary?” Now write down what you know about writing a good summary.

Think Aloud:

After working together as a whole class to identify the thesis statement of the article, and the topic sentences, students worked in pairs “thinking aloud” to paraphrase the thesis, topic sentences and author’s conclusion. They wrote these paraphrases down in list form.

I then gave a brief lecture on how to organize a summary paragraph and taught them the “formula” for the opening sentence – author, article name in quotations, and one of the hundred ways to say “said”, although I encouraged them to write their summary in the present tense.

Practice: Students wrote a first draft of a summary. I gave them feedback on their first drafts including marking spelling and sentence errors to be corrected.

Assessment Instrument: Students wrote a summary of Romantic Love.

Assessment Results: See student samples of high, medium, low

The range of scores was as follows:

High: 12 students

Medium: 4 students

Not handed in: 5 students

Appendix 9

Reading Apprenticeship Reading Journal and Vocabulary Lesson

This is another Reading Apprenticeship scaffold for a lesson. In addition it includes a vocabulary journal assignment for helping students learn their vocabulary words from their lessons.

Reading Journal: Hanging on to new teachers
By: C. W. Nevius
(Green Course Pack, 71-72)

STEP 1: Prepare to Read

1. Purpose: To practice annotation in different ways to:
 - a) Stay active!
 - b) Share our reading processes with others.

2. What do you predict this reading will be about? _____

3. How do you know? That is, what did you do to preview this article? What prior knowledge of the topic informed your prediction? _____

4. Read about annotation on pp. 48-49 of the green course pack. What are 3 different ways of annotating that you will try to do with this article? _____

STEP 2: Read Actively

After reading a paragraph, annotate your thoughts. You may write on the text itself as well as in the margins. You may use your own symbols and abbreviations, and you may use different colored pens and/or highlighters. The goal is to stay active, to record what you understand, and also to reveal places where you are not sure what the text means. *Remember: applaud confusion! If you ignore it, we can't fix it.*

STEP 3: Organize What You've Read

1. Choose 1 annotation that you think might not be clear to someone reading your text markings. First, copy your annotation (*note the paragraph number.*) Then explain what was going through your head as you wrote it. Refer to the text itself in your explanation.

My annotation exactly as I wrote it: _____

An explanation of my thinking at this point in the reading: _____

2. Copy one or more sentences that confused you when you first read it—your “road block” to comprehension. What did you do to try and understand? (Re-read it, read around it, kept reading, asked for help, etc.) What other information in the reading (or from your outside help, like a tutor) helped you figure out the meaning of this sentence(s)?

My “road block”: _____

How I handled the confusion: _____

3. How might this reading influence your decision about Luis Cardenas? Copy a specific sentence(s) that you connected to the case study and explain how you might use this information in your own essay (you could use it to argue for or against teaching.)

A sentence I connected to Luis Cardenas: _____

How I might use this idea in my essay: _____

Lisa King, San Francisco City College

Academic Word List (AWL) #6

Definition, Pronunciation, and Part of Speech	Word Parts & Usage Notes	Word Forms	My Sentence
<p>sustain (sə-stān') <i>v.</i> 1. To keep in existence; maintain.</p> <p><i>Hard Truths About Soft Skills</i></p>		-sustainable adj.	
<p>consistent (kən-sis'tənt) <i>adj.</i> uniformity of successive results or events; always happening in the same way.</p> <p><i>Hard Truths About Soft Skills</i></p>	con=_____	--consistently <i>adv.</i> --consistency <i>n.</i>	
<p>innovation (in-ə-vā'shən) <i>n.</i> Something newly introduced, such as a method or product.</p> <p><i>Hard Truths About Soft Skills</i></p>	in=_____ nova=_____	--innovate <i>v.</i> --innovative <i>adj.</i> --innovator <i>n.</i>	
<p>mediate (mē'dē-āt) <i>v.</i> To resolve or seek to resolve differences by working with all conflicting parties.</p> <p><i>Hard Truths About Soft Skills</i></p>	med=_____	-mediation <i>n.</i> -mediator <i>n.</i>	
<p>initiative (sīt) <i>n.</i> 1. The ability to begin or follow through with a plan or task</p> <p><i>Characteristics of a Good Employee</i></p>	in=_____ take initiative	-initiate <i>v.</i> -initiator <i>n.</i>	

1, 2, 3?	Word in Context	What I think the word means and WHY
	It can be difficult to <u>sustain</u> a commitment to getting a college degree if you lack family support.	It can be difficult to _____ a commitment...if you lack family support.
	My husband may not do a lot around the house, but his contribution is <u>consistent</u> -- he always does the dishes.	...his contribution is _____--he always does the dishes.
	Because John and Linda could not agree, they had to meet with a <u>mediator</u> to work out a fair divorce settlement.	Because John and Linda could not agree, they had to meet with a _____ to work out a fair divorce settlement.
	Hybrid cars are still an <u>innovation</u> in the automotive industry, but hopefully they will become as common as gasoline-only vehicles.	Hybrid cars are still an _____ in the automotive industry...
	If you must be absent from class, take the <u>initiative</u> to find out what you missed and make up the work; don't wait for someone to tell you what to do.	...take the _____ to find out what you missed...don't wait for someone to tell you what to do.

Lisa King, San Francisco City College.

Appendix 10

Seven Reading Problems

This is the handout that Sara Pries, Sierra College mathematics instructor uses to begin her workshop:

Seven Reading Problems

Directions: This is a “reading” test. Don’t let the numbers fool you. Think and picture rather than compute.

1. Does England have a fourth of July?
2. If you had only one match and entered a room where there was a lamp, an oil heater, and some kindling wood, which would you light first?
3. A woman gave a beggar 50 cents. The woman is the beggar’s sister, but the beggar is not the woman’s brother. Why?
4. Is it legal in North Carolina for a man to marry his widow’s sister?
5. A garden had exactly 50 different kinds of flowers, including 10 kinds of roses, 3 kinds of sweet peas, 2 kinds of alyssum, 5 kinds of carnations, 3 kinds of zinnias, 8 kinds of poppies, 4 kinds of snapdragons, 5 kinds of gladiolus, and 6 kinds of phlox. How many different kinds of flowers did the garden have?
6. A rooster is sitting on the peak of a roof and lays an egg. Which way does the egg roll: to the right or to the left?
7. Abbott, Baker and Casper are a detective, an entomologist, and a farmer, although not necessarily in that order. Abbott was the mother of healthy twins yesterday. Casper has a deadly fear of insects and will not even get close enough to kill if she sees it. The farmer is getting worried because she and her husband are getting old and will not be able to run the farm for too many more years, and she has no children. Casper, unmarried, especially likes to date brunettes. What is the occupation of each of the three women?

Appendix 11

Reading and Math

Lynn Hargrove, Mathematics Instructor, gives out and discusses key words and other information with the following handouts.

Math Facts Information

Problem Solving

There are five general rules to follow when trying to solve word problems. They are:

1. Read through the entire problem from beginning to end at least once. Some people miss important facts because they “skim” the problem rather than actually reading it.
2. Look for the main idea. In word problems, it is usually the question. At this step, you are looking for what it is that the question wants you to find.
3. Decide on the operation. There could also be a combination of operations you need to use to answer the question. Look for key words. Draw pictures if necessary to help you “see” the problem.

Some examples of key words are

- **Addition:** in all, add, altogether, total, sum, combine
 - **Subtraction:** difference, minus, more than, less than, subtract, take away
 - **Multiplication:** product, times, of
 - **Division:** how many are in, how many times smaller or larger, average, quotient
4. Pick out the details that will support your operation. Be careful. Many times extra information is added that has no bearing on solving the problem.
 5. Solve the problem and label the answer.

Problem-Solving Words

Math Symbols

Key Words

+	The sum of, plus, added to, joined with, increased by, more than, more
-	The differences of, minus, subtracted from, take away, decreased by, less than, less, reduced by, diminished by, exceeds
X	The products of, times, multiplied by, equal amounts of, goes into, over
=	The same as, is equal to, equals, is, was, are, makes, gives the result of, leaves, will be
2●	Twice, double, two times, twice as much as

$\frac{1}{2} \bullet$	Half, one-half times, half as much as n (any letter). What number, what part, a number, the number, what amount, what percent, what price
$2 \bullet n$	Twice a (the) number, double a (the) number
$\frac{1}{2} \bullet n$	Half a (the) number, one-half a (the) number
\div	The quotient of, how many are in, how many times smaller or larger, average

Tips for Solving Word Problems Involving Multiplication and Division of Fractions

General Guidelines:

1. Read the problem and ask yourself what you are looking for.
2. Always look for indicator words. However, you may not always find these indicator words.
3. Use at least three steps. To set up the problem, work it and check it.
4. If necessary change the fractions to whole numbers and work that way. Then go back and use the fractions.
5. Does your solution make sense to you?

Multiplication Tips:

1. Remember that multiplication is repeated addition.

Example: For an annual pancake breakfast $\frac{2}{3}$ cup of Bisquick is needed per

person to make the pancakes. If about 135 people are expected to attend, then how much Bisquick will you need?

1a) x = total amount of Bisquick needed for pancake breakfast

$$1b) x = \frac{2}{3} \bullet 135$$

$$1c) x = 90 \text{ cups}$$

2. If the word “of” is used most times it means multiplication. Usually you are finding a fraction of something which means to multiply. The word “of” must follow a fraction.

Example 1: Sociologists have discovered that $\frac{2}{5}$ of the people in the world are shy. A

sales manager is interviewing 650 people. How many of these people might be shy? (Notice the word “of” follows a fraction)

X = the number of shy people being interviewed

$$X = \frac{2}{5} \bullet 650$$

$$X = 260 \text{ people}$$

Example 2: After Jack takes the CBEST teaching exam he can earn \$88 working a full day as a substitute teacher. How much would he receive if he works $\frac{3}{4}$ of a day?

A = amount earned working

$$A = \frac{3}{4} \cdot 88$$

$$A = \$66$$

3. Most times when you have information given that has ***different measures***, you will multiply.

- a. Example 1: How much salmon is needed to serve 30 people if each person gets $\frac{2}{5}$ pound? (Notice you have servings and pounds and you need to find pounds for your answer).

X = pounds of salmon needed

$$X = \frac{2}{5} \cdot 30$$

$$X = 12 \text{ lb.}$$

- b. A sandwich shop sells submarine sandwiches by the foot. If one serving is $\frac{2}{3}$ foot long, how many feet would you need to feed 30 people? (Notice the measures are different)

N = number of feet of sub sandwich needed

$$N = 30 \cdot \frac{2}{3}$$

$$N = 20 \text{ ft.}$$

4. The measures are ***always the same*** when finding area of a figure.

Example: Find the area of the backyard if it measures $14\frac{2}{3}$ feet by $10\frac{2}{5}$ feet.

A = area of the backyard

$$A = 14\frac{2}{3} \cdot 10\frac{2}{5}$$

$$A = 152\frac{8}{15} \text{ sq. ft.}$$

Division of Fractions Tips:

1. Be careful because order does make a difference and is important!
2. If the words say split, divide, taken off, break into groups or anything hinting at taking apart, then you divide.

3. a. Example 1: The school district purchased $\frac{3}{4}$ ton of clay. The clay is to be distributed equally among the district's 6 schools. How much does each school receive? (Key word: distributed equally means divide)

X = amount of clay each school receives

$$X = \frac{3}{4} \div 6$$

$$X = \frac{1}{8} \text{ ton of clay}$$

4. When it seems that you “take away” repeated amounts from the whole, you divide. Also notice that the measures are the same and the answer is a different measure.

Example 1: The air guard uses \$9 million to spend on new helicopters. If each helicopter costs $\frac{3}{4}$ million, how many helicopters can be bought?

(Notice repeated “take aways”. You start with \$9 million and take away how much till there is none left).

N = number of helicopters to be bought

$$N = 9 \div \frac{3}{4}$$

N = 12 helicopters

Example 2: The market prepackages Swiss cheese into $\frac{3}{4}$ pound packages.

How many packages can be made from a 15 pound block of Swiss cheese?

X = number of packages of cheese

$$X = 15 \div \frac{3}{4}$$

X = 20 packages

Solving Application Problems

Solving with One Unknown

I. Translating into a Variable Statement

A. Addition

<u>Phrase</u>	<u>Algebraic Expression</u>
1. the sum of a and 8	$a + 8$
2. 4 plus c	$4 + c$
3. 16 added to m	$m + 16$

- | | |
|----------------------|----------|
| 4. 4 more than n | $n + 4$ |
| 5. 20 greater than m | $m + 20$ |
| 6. t increased by r | $t + r$ |
| 7. exceeds y by 35 | $y + 35$ |

B. Subtraction

<u>Phrase</u>	<u>Algebraic Expression</u>
1. the difference of 23 and p	$23 - p$
2. 550 minus h	$550 - h$
3. w less than 108	$108 - w$
4. 7 decreased by j	$7 - j$
5. m reduced by x	$m - x$
6. 12 subtracted from g	$g - 12$
7. 5 less f	$5 - f$

C. Multiplication

<u>Phrase</u>	<u>Algebraic Expression</u>
1. the product of 4 and x	$4x$
2. 20 times b	$20b$
3. twice r	$2r$
4. $\frac{3}{4}$ of m	$\frac{3}{4}m$

D. Division

<u>Phrase</u>	<u>Algebraic Expression</u>
1. The quotient of r and 10	$r \div 10$ or $\frac{r}{10}$
2. a divided by b	$a \div b$
3. the ratio of c to d	$c \div d$
4. k split into 4 equal parts	$k \div 4$

II. Combining variable expressions with more than one operation.

<u>Phrase</u>	<u>Algebraic expression</u>
1. Sum of twice a number and 9	$2n + 9$
2. Opposite of a number decreased by 5	$-n - 5$
3. Sum of opposite a number and -5	$-n + -5$ or $-n - 5$
4. Product of twice a number and 8	$(2n)(8)$
5. Five times the sum of twice a number and -5	$5(2n - 5)$
6. Six times the sum of twice the opposite of a number and -8	$6(-2n - 8)$
7. Product of 7 and the sum of a number and ten	$7(n + 10)$
8. Sum of 3 times a number and -4 multiplied by 5	$3n - 4(5)$
9. Sum of -10 and 6 times the opposite of a number	$-10 - 6n$
10. The product of 7 and 6 less than a number	$7(n - 6)$

II. Algebraic Equations

Procedure

1. Choose a variable to represent what is missing in the problem.
2. Write an equation using the variable.
3. Solve the equation.

Examples

1. Four more than 6 times a number is the same as 9 times the number increased by 10.
Find the number.
 - a) $n =$ the missing number
 - b) $4 + 6n = 9n + 10$
 - c) $n = -2$
2. A number plus 5 more than 3 times the number is 27.
 - a) $n =$ a number
 - b) $n + 5 + 3n = 27$
 - c) $n = 5.5$

Solving Applications Problems with Two Unknown Quantities

I. Hidden Values: Coin Problems

A. Remember that when using coins that each has a decimal value when thinking in terms of dollars.

a. Pennies = \$0.01

b. Nickels = \$0.05

c. Dimes = \$0.10

d. Quarters = \$0.25

e. Half dollars = \$0.50

B. When talking about how many of each coin you have and you have a total value in dollars, don't forget to put the decimal amount next to the coins. For example:

If you have a total of \$4.25 in quarters and dimes, remember:

$$(\$0.25 \times \text{quarters}) + (\$0.10 \times \text{dimes}) = \$4.25$$

$$0.25q + 0.10d = \$2.45 = \$4.25$$

C. **Coin Problem:** Elaine has quarters and dimes totaling \$2.55. If she has one more dime than quarters, how many of each does she have?

	Amount	x	Value	=	Total
quarters	q		0.25		0.25q
dimes	(1 + q)		0.10		0.10(1 + q)
mix					2.55

a. $q = \text{quarters}$

$d = \text{dimes} = 1 + q$

b. $0.10d + 0.25q = 2.55$

$$0.10(1 + q) + 0.25q = 2.55$$

$$0.10 + 0.10q + 0.25q = 2.55$$

$$0.10 + (0.10q + 0.25q) = 2.55$$

$$0.10 + 0.35q = 2.55$$

$$\underline{- 0.10} \qquad = 0.10$$

$$\frac{0.35q}{0.35} = \frac{2.45}{0.35}$$

$$q = 7$$

quarters

c. $q = 7$ quarters

$$d = 1 + q$$

$$= 1 + 7$$

$$= 8 \text{ dimes}$$

II. Geometry Problem

A. Procedure:

- Use the text to look up formulas for perimeter, area, volume, and circumference for various geometric figures.
- Use substitution to solve the given geometric problems.
- Make sure to label answers with the correct label.
 - Use the measure for perimeter and circumference.
 - Use square units for area.
 - Use cubic units for volume.

B. The width of a rectangle is 3 feet less than the length. If the perimeter is 22 feet, what are the length and the width of the rectangle? (sketch the figure)

1. What information is given and what is it you are looking for?

a. Given: $W = \text{width} = L - 3$

$L = \text{length}$

$P = \text{perimeter} = 22 \text{ ft.}$

$L - 3$

L



b. $P = 2L + 2W$

2. Three Steps

a. $L = \text{Length}$

$L - 3 = \text{Width}$

b. Equation: $22 = 2L + 2(L - 3)$

Work:

$$22 = 2L + 2(L - 3) \qquad W = L - 3$$

$$22 = 2L + 2L - 6 \qquad 7 - 3$$

$$22 = 4L - 6 \qquad 4$$

$$+ 6 = \quad + 6$$

$$\underline{28 = 4L}$$

$$4 \quad 4$$

$$7 = L$$

c. State the solution: $L = 7 \text{ feet}$ $W = 4 \text{ ft.}$

III. Work-Rate Problems

A. Procedure

1. Formulas: **Rate = $\frac{\text{work done in one situation}}{\text{Time it takes in one situation}}$**

$$\text{Work completed} = (\text{rate of work}) \times (\text{time})$$

2. First calculate the rate for each person. Then, use the work completed formula to figure out the missing factors. Use a chart if possible to figure out information.

B. It takes an experienced carpenter 3 days to build a wooden deck on the back of a house. It takes an apprentice 4 days to do the same job. How long would it take for them to do the job together?

1. Given information: Experienced carpenter takes 3 days.

Apprentice carpenter takes 4 days.

$T = \text{time to do the job together}$

1 = indicates one complete job

	Rate	x	Time	=	Work
Experienced Carpenter	$(\frac{1}{3} \text{ of the job in 1 day})$		T		$\frac{1}{3} T$
Apprentice Carpenter	$(\frac{1}{4} \text{ of the job in 1 day})$		T		$\frac{1}{4} T$

2. Variable statement: T = time to complete the job together

3. Equation:
$$\frac{1}{3}T + \frac{1}{4}T = 1$$

4. Solve:
$$\frac{1}{3}T + \frac{1}{4}T = 1$$

$$\frac{4}{4}\left(\frac{1}{3}\right)T + \frac{3}{3}\left(\frac{1}{4}\right)T = 1$$

$$\frac{4}{12}T + \frac{3}{12}T = 1$$

$$\frac{7}{12}T = 1$$

$$\left(\frac{12}{7}\right)\left(\frac{7}{12}\right)T = (1)\left(\frac{12}{7}\right) \qquad T = \frac{12}{7}$$

5. Solution: $T = 1 \frac{5}{7}$ days

Mixtures

A. Procedure: Two or more components are combined to produce a mixture with a certain value.

1. Read information and make a table to determine the amount of each component and the value of each component.
2. There might be hidden components with cost and amount bought, so be careful.

B. Coffee Grounds Inc. has two kinds of coffee. Coffee A costs \$9 per kg. and Coffee B costs \$6 per kg. If you buy 100 kg. of Coffee A, how many kilograms of Coffee B should be combined to obtain a blend worth \$1200?

Coffee	Amount	Value	Total
A	100	9	100(9)
B	b	6	6b
Mix		1200	9(100) + 6b

1. Variable statement: b = amount of Coffee B

2. Equation $9(100) + 6b = 1200$

$$900 + 6b = 1200$$

$$- 900 \qquad = - 900$$

$$\underline{6b = 300}$$

$$6 \qquad \qquad \qquad 6$$

$$b = 50$$

3. Solution: $b = 50$ kg.

- C. The manager of a movie theater noted that 411 people attended a movie but neglected to note the number of adults and children. Admission was \$7.00 for adults and \$3.75 for children. The receipts were \$2678.75. How many adults and children attended the movie?

Movie Attendees	Amount	Value	Total
Adults	a	\$7.00	7 a
Children	c	\$3.75	3.75c
Mix	a + c = 411	\$2678.75	7a + 3.75c = 2678.75

1. Variable statement: a = adults
c = children

2. Equations: a + c = 411

$$a \begin{array}{r} -c = \\ \hline \end{array} = 411 - c$$

$$a = 411 - 61$$

$$a = 350$$

3. Solution: a = 350 adults
c = 61 children

$$7a + 3.75c = 2678.75$$

$$7(411 - c) + 3.75c = 2678.75$$

$$2877 - 7c + 3.75c = 2678.75$$

$$2877 - 3.25c = 2678.75$$

$$\begin{array}{r} -2877 \\ \hline \end{array} \quad \begin{array}{r} = -2877 \\ \hline \end{array}$$

$$-3.25c = -198.25$$

$$\begin{array}{r} -3.25 \\ \hline \end{array} \quad \begin{array}{r} -3.25 \\ \hline \end{array}$$

$$c = 61$$

V. Distance Problems: $D = R \times T$

A. The distance between Houston, Texas and Austin, Texas is 180 miles. A car

leaves Houston traveling toward Austin at an average rate of 68 miles per hour. At the same time, a van leaves Austin traveling toward Houston at an average rate of 52 miles per hour. Assuming they are traveling on the same route, how long will it take until they meet?

/

d r t

Car			
Van			

B. Keith leaves his home in Sacramento traveling east on I-80 at an average rate of 65 miles per hour. Three hours later his wife leaves home and takes the same route traveling at an average rate of 70 miles per hour. How many hours will it take his wife to catch up to him?

d r t

C. Bret drove for 4 hours on the freeway, then decreased his speed by 20 MPH and drove for 5 more hours on a country road. If his total trip was 485 miles, then what was his speed on the freeway?

d r t

Three=Step Problem Solving Procedure

First: Variable Statement

Second: Equation

Third: Solution stated with labels.

Example: You want to buy several items that cost \$245, \$123, and \$678. What is the total cost of the items?

- a. $c = \text{total cost}$
b. $c = 245 + 123 + 678$

Work:

$$\begin{array}{r} 245 \\ 123 \\ + 678 \\ \hline 1046 \end{array}$$

- c. $c = \$1046$

Solving Algebraic Equations

1. Whatever is done to one side of the equation it must be done to the other side of the equation, too.

2. Addition and subtraction problems. (Addition Property of Equality)

a. $\begin{array}{r} 5 + a = 12 \\ \hline -5 \quad = -5 \\ \hline a = 7 \end{array}$	b. $\begin{array}{r} y - 10 = 8 \\ \hline + 10 = +10 \\ \hline y = 18 \end{array}$
--	--

3. Multiplication problems. (Multiplication Property of Equality)

a. $\begin{array}{r} 4x = 20 \\ \hline 4x = 20 \\ \hline 4 \quad 4 \\ \hline x = 5 \end{array}$	b. $\begin{array}{r} 120 = 5y \\ \hline 120 = 5y \\ \hline 5 \quad 5 \\ \hline 24 = y \end{array}$
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Three-Step Problem Solving Procedure for Proportions

First: Variable Statement

Second: Equation

Third: Solution stated with labels.

Example: It was time for your notebook check and you completed everything but your test corrections. This means that you have lost 5 points. What was your percentage score if the total points you could earn was 25 points?

- a. $p =$ your percentage score (%)
- b. $\frac{100 \text{ perfect } \%}{25 \text{ perfect points}} = \frac{p \text{ your } \%}{(25-5) \text{ your points}}$

Work: $25p = 100(25-5)$

$$25p = 100(20)$$

$$25p = 2000$$

$$\underline{25p = 2000}$$

$$25 \quad 25$$

$$p = 80\%$$

- c. $p = 80\%$

Appendix 12

Resources for Chapter 10

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