

# SREB

## **Developing Proficient Readers by Embedding Literacy Skills in Career and Technical Programs**

**Pre-conference to  
ACTE Conference  
Charlotte, North Carolina  
December 3, 2008**

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## Essential Questions

- Which reading skills are essential for all students to be ready for careers and postsecondary studies?
- How do these skills match content in career and technical classes?
- Which strategies can help students learn the essential reading skills?
- How can we embed reading skills into authentic activities, projects and problems?

## SANDY AGENDA

8:30 a.m.     **Welcome, introductions and distribution of materials**

### **Which Literacy Skills are the Most Important for Students to Master? How Do These Match Content of Career/Technical Classes?**

Participants will review research behind six critical reading skills and match those to content and processes used in their classes.

### **How Can We Help Students Read Better? Summarizing and Paraphrasing Techniques**

- Two-column notes
- 3-2-1
- Carousel Brainstorming

### **How Can We Help Students Read Better? Vocabulary and Categorizing Strategies**

- Frayer Model
- Word Sorts
- Word Walls

Noon     **Lunch**

### **How Can We Help Students Read Better? Predicting and Inferring Strategies**

- Anticipation Guides
- Metaphors/Similes/Analogies
- RAFT

**4:30**     **How Can We Embed Reading Skills Into Authentic Learning?  
Wrap-up, plotting the course**

## Essential Reading Skills for All Students

Skill	Evidence	Strategies
<b>Summarizing</b> <i>– capturing the main ideas in as few words as possible</i>	<p>To effectively summarize, students must analyze information at a fairly deep level (Marzano, 2001)</p> <p>Teaching adolescents to summarize text had a consistent, strong, positive effect on their ability to write good summaries. (Graham, 2007)</p>	
<b>Paraphrasing</b> <i>–putting another’s ideas into one’s own words</i>	<p>Verbatim note taking is the least effective way to take notes (Marzano, 2001)</p>	
<b>Categorizing –</b> <i>classifying items based on similarities and differences</i>	<p>Identifying similarities and differences enhances students’ understanding of and ability to use knowledge. (Marzano, 2001)</p> <p>Nonlinguistic representations elaborate on knowledge (Marzano, 2001)</p>	
<b>Inferring –</b> <i>reading between the lines to connect ideas, determine themes or analyze implied meaning</i>	<p>Students must be asked to decide what’s important in a text; synthesize information and draw inferences (Vacca, 2002)</p> <p>Creative notetaking requires extraction and reaction (explain, sort, classify, respond) (Jacobs, 2006)</p>	
<b>Predicting –</b> <i>making inferences about future events based on current evidence.</i>	<p>Getting students to think about key concepts before they read about them provides a tangible purpose for reading. (Daniels, 2004)</p>	
<b>Recognizing academic/ technical vocabulary –</b> <i>using context clues or morphology to determine meanings</i>	<p>To be academically literate, students need a strong and constantly growing vocabulary base (Short, 2007)</p> <p>Vocabulary is not learned effectively by memorizing lists and definitions, but by seeing words in use, in their customary contexts. (Daniels, 2004)</p>	

## Reading and Writing Enhances Learning in All Classes

<b>Big Ideas</b>	<b>Details</b>
Purchasing a car analogy	
Traits of proficient readers	1. 2. 3. 4. 5. 6. 7.
Reading problems	1. 2. 3.
Phases of reading	1. 2. 3.
To remember:	

For more information on Cornell note-taking, see *Literacy Across the Curriculum*, pages 121-123.

# Reading and Writing Enhances Learning in all Classes

## By Doug Buehl

Excerpt from *High Schools That Work* publication: *Literacy Across the Curriculum: Setting and Implementing Goals for Grades Six to Twelve*

**1** Imagine for a few moments how adults access literacy strategies as an integral part of a day's routine. For example, let's say you are in the market for a new vehicle. You begin your research of potential automobile models by consulting magazine and on-line sources which detail strengths and weaknesses of various makes and styles of cars, mini-vans, and SUVs.

As you read, you focus on information especially pertinent to your family's desires and needs in a vehicle. You consider past experiences with various cars, and recall what you have previously read as well as what others have related to you about various models. Questions begin to occur to you, such as: "Will this particular vehicle be convenient for our family camping trips?" "How important is fuel efficiency compared to other variables?" "What would be the disadvantages of this vehicle if we choose to keep it several years?" "How expensive is it to maintain this vehicle?" "What is its safety record." And so on.

These questions help you prioritize the most important information to seek as you continue your research. You may need to obtain further sources to ensure that you gain satisfactory answers to your most critical concerns. And throughout your reading, you find yourself visualizing how various options relate to you. As you visualize embarking on a camping trip, you may ponder the advantages of a SUV, but when you visualize hauling materials for home improvement projects, you realize that the versatility of a mini-van might be the better overall choice.

Throughout this process, you are constantly making inferences about your reading. You generate predictions about how various models might be ranked based on the narratives provided in an article. You infer the personal values of the "expert reviewer" when you scan his "best buys" advice. You make inferences between the advantages and disadvantages of buying a lower priced versus a higher priced option. And as you complete your research, you create a synthesis of what you have learned, which includes a summary of key aspects of your choices and a personal conclusion about what makes the most sense for you.

Of course, to assist assembling a coherent compilation of information and ideas, you have been jotting down notes. Your lists of strengths and weaknesses have helped you eliminate some choices and narrow down to those models that you wish to test drive. Included in your notes are key questions that you wish to pose to dealers about features, maintenance, reliability, and other factors. You will undoubtedly consult with friends to add to and revise your list. When you walk into a showroom, you are prepared to make a decision that matches your needs and interests.

## 2 Traits of a Reader

What you have been doing in the above scenario is what proficient readers do as a matter of habit. Research on proficient readers reveals that they employ a host of comprehension strategies as they read and learn. These comprehension strategies provide the bedrock for learning in content classrooms. What are these “traits of a reader”?

Proficient readers actively **make connections** between what they already know and new material. These connections activate previous learning and tap into past experiences, which helps the readers understand new information and establish interest and motivation for reading a specific text.

- Proficient readers pose questions to themselves as they read, because they are curious and they realize that **self-questioning** helps them sort through information and make sense of it.
- Proficient readers **visualize** while they read, using their imagination to help them picture in their minds what an author represents in prose. They can “see” what an author is describing.
- Proficient readers are able to **determine what is most important** in a text. They differentiate key ideas and information from details, so that they are not overwhelmed by a mass of facts. Instead they target main themes and salient details.
- Proficient readers **make inferences**, they “read between the lines,” which enables them to discern implicit meanings as well as explicitly stated messages. They make predictions, read critically, and realize that authors do not necessarily always directly state everything they wish to communicate.
- Proficient readers are adept at summarizing the essence of what they read into a personal **synthesis of meaning**. As a result, they are able to make evaluations, construct generalizations, and draw conclusions from a text. In addition, their perceptions of the gist of a text influence how they might decide to act upon what they have read.
- Proficient readers **monitor their comprehension** while reading. They make extensive use of *fix-up strategies* as they read. If they encounter breakdowns in their comprehension—difficult vocabulary perhaps, or references to unfamiliar information—they pause to make a determination whether to adjust their reading, or to kick-in additional strategies to make sense of the unclear passage. Proficient readers are comfortable choosing from a variety of problem solving options to guarantee that they understand a text and that they achieve their purposes for reading it.

Proficient reading abilities are integral to the literacy challenges and choices we make as adults each day of our lives. We employ our literacy skills to accomplish our jobs in the workplace, to access useful and interesting information, to undertake self-improvement activities, and to pursue pleasure and fulfillment as part of our lifestyles.

Likewise, proficient reading abilities are integral for learning. For students to achieve success in learning in social studies and science, literature and mathematics, in all curricular areas, they need to develop strategic literacy behaviors. In short, students will become better learners in all their

curriculum subjects if they are taught to use reading and writing strategies to learn meaningful content.

### **3 Integrating Literacy Strategies into Content Curriculum**

Proficient reading abilities—connecting to prior knowledge and experiences, self-questioning, visualizing, determining importance, making inferences, synthesizing, and monitoring comprehension—develop throughout a student’s years of schooling. Middle and high school teachers can not assume that their students will automatically and skillfully employ these strategies as they complete assignments in their classes. In fact, teachers can readily attest that many of their students struggle with these thinking behaviors when attempting to learn important content.

How teachers integrate reading and writing into their classroom routines can make a significant difference in their students’ abilities to use literacy strategies as learners of course content. The following three descriptions of classroom reading are typical illustrations of student behaviors that indicate ineffective use of literacy strategies to learn.

**Ping-pong reading.** Many text materials overemphasize reading for details, or literal understanding. When answering questions of this sort, students soon realize that they can merely skim a text, locate clues like bold-face vocabulary, and then copy down definitions and pertinent details which follow. In effect, students can satisfactorily complete assignments of this nature without a careful reading or really learning the new material. These students interact with a text for the minimal amount of time necessary to complete the assignment. Frequently, they engage in “ping-pong” reading, glancing at a question, skimming for the answer, checking the next question, moving back to the text for more skimming, and so on. In essence, they read to “get done” rather than read to learn.

Students who use ping-pong reading often complain that they are poor test-takers, because they are unable to handle test items even though they experienced no difficulty completing homework. In reality, they were able to work through assignments without learning, making it likely that they would be unprepared to be tested on the material.

**Mindless reading.** Another indicator of ineffective reading occurs when students dutifully “read” an assigned passage, but do not think about what is being communicated to them. Their eyes may be looking at the print, they may indeed be reading words, but the thinking described above as traits of proficient reading is absent. They may tell a teacher, “I read it but I didn’t understand it!” Clearly, their act of reading did not result in learning the material, and as a result, frustrated teachers lose confidence in student independent reading. Instead, teachers may resort to other means to teach the material, such as lecturing or class presentations to explain “what the book said.” Students soon realize that they really don’t have to rely on their personal reading to be successful because the teacher will tell them everything they will need to know. They do not develop independent reading and learning behaviors, and become limited learners who are dependent on the teacher as the source for all class information.

**Forgetful reading.** A third indicator of ineffective use of literacy strategies is how quickly students forget what they have read. Because many students are not connecting to personal knowledge, posing questions as they read, predicting, inferring, and synthesizing, they are engaged in a very superficial read of a class assignment. As a result, much of what they read “doesn't stick.” It is “in one ear and out the other,” so to speak. Students may hand in their homework, but learning remains tenuous at best, and many will have trouble relating reading assignments to class discussions and will struggle with tests. Even students who perform satisfactorily on exams may forget much of a unit's content in a short period of time. Because students did not employ literacy strategies that involved a deeper processing of class content, information never proceeds beyond what brain researchers refer to as “working memory,” learning which is retained for only a short period of time and then discarded. Obviously teachers want important concepts and information to be wired into the student's long term memory, becoming knowledge which remains over time and influences how a person perceives and understands the world.

**4** Integrating effective reading and writing strategies into classroom learning involves devising lessons that encompass three phases: pre-reading, during reading, and after reading.

**Pre-reading.** The pre-reading components of a lesson prepare students for learning by **activating** their prior knowledge about the topic to be studied. Pre-reading activities also build relevant student knowledge about a topic for those individuals whose background knowledge and command of key concepts and vocabulary may be insufficient. In addition, pre-reading activities help students with **focusing** their attention on what is most important in a text during reading.

As a result of pre-reading activities, students are more likely to be motivated to read about a topic, because they already have had an opportunity to make personal connections to their background knowledge and experiences. These activities also provide guidance about what to notice and remember as students read. Proficient reader traits that are usually emphasized in pre-reading strategies are making connections, generating questions, and determining importance.

Pre-reading activities are often referred to as **frontloading**, which involves laying the groundwork for successful reading by teaching about a topic before a reading assignment. Unfortunately, researchers have discovered that pre-reading activities are frequently neglected in middle and high school classrooms, and that it is common for students to be sent into a reading assignment “cold,” with little preparation for learning. Instead, researchers argue, classrooms should emphasize more frontloading activities, which in effect re-positions much of teaching to before students read, rather than after, which is currently the prevalent practice.

**During reading.** During reading activities continue to emphasize the proficient reader traits of making connections, generating questions, and determining importance. During reading activities also prompt students to visualize, to make inferences, and to monitor their comprehension. As mentioned above, students may resort to ping-pong reading, mindless reading, or forgetful reading when they are assigned texts to read in their classes. During reading activities should instead elicit the types of thinking characteristic of proficient readers.

In particular, during reading activities need to help students with **selecting** what is most important from a text, and with **organizing** the new information that they are encountering. All too

often, students find themselves overwhelmed by the magnitude of new information in a chapter in biology, for example, or with details in a novel. During reading activities should help students prioritize what is most essential and to connect this information in some sort of meaningful and organized way.

Six common ways information is organized in a text are *cause/effect*, *compare/contrast*, *problem/solution*, *concept/definition*, *proposition/support*, and *goal/action/outcome*. In effect, these **text frames** provide the structure for segments of text, and enable a reader to connect information in a meaningful way. Activities which signal these text frames help students avoid just reading for isolated details. Instead, students are guided to perceiving the relationships amongst information and they are better able to detect what material in a text is most important and warrants close attention.

**After reading.** After reading activities should deepen understanding, and in addition to the proficient reader traits accentuated in the pre- and during reading phases, should help student summarize and synthesize what they read into a coherent personal understanding. Hence, after reading activities go beyond merely identifying what was read and instead help students with **integrating** their new learning with their previous knowledge and with **applying** the new knowledge in some way to their lives.

After reading activities should acknowledge that students will probably forget much of what they read unless they process their learning at a deeper level, and make connections to things they already know and have experienced. In particular, students need to be able to verbalize their new understandings, and probe the implications of what they have learned to a variety of situations. Asking students to merely recall specific factual information for a test will not provide them with the necessary impetus to really wire new learning into their memories.

Although writing activities are central to learning throughout the three phases of reading, they are especially critical after students have completed reading. Writing allows students the opportunity to personally explore their new insights and to verbalize their understandings. Writing answers to questions, especially questions that target a low level of thinking, do not, however, sufficiently engage students in the meaningful thinking that will consolidate and expand new learning. Instead, writing assignments must be challenging, requiring students to go beyond the text to arrive at conclusions and make judgments about the author's intent.

What It Says	What I Need to Know and Do
<p>Use this <i>fax report form</i> to report any fatal or serious accident or any accident with the potential to be fatal or disabling. The "Person Preparing Report" is to FAX the information to the Headquarters Office of Safety and Health, the Construction Program, and the district construction safety coordinator. Fax an Initial Report immediately, even if information is minimal. The <i>Initial Report</i> is intended to notify management as-soon-as possible. An <i>Updated Report</i> may be used to provide supplementary information when deemed necessary. Follow district procedure for notifying personnel within the district.</p>	<p>Submit to:</p> <ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> </ol> <p>Submit when:</p> <ol style="list-style-type: none"> <li>1.</li> <li>2.</li> </ol>
<p>A SERIOUS INJURY IS ANY INJURY MEETING ONE OF THE FOLLOWING CRITERIA:</p> <ul style="list-style-type: none"> <li>• The injured person misses three days or more of work (submit report if deemed possible).</li> <li>• Two or more employees miss more than one day of work (submit report if deemed possible).</li> <li>• Any injury resulting in hospital admission other than for medical observation. If the medical condition of the victim is unknown, but the victim was transported by ambulance then the injury should be considered as serious until more information becomes available.</li> </ul>	<p>Conditions:</p> <ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> </ol>
<p>REQUIRED CONTENT OF FAX REPORT FORM</p> <ul style="list-style-type: none"> <li>• Contact information about person preparing report (name, and phone number).</li> <li>• Contract identification (contract number, any federal project number, county, route, and kilo-post limits, resident engineer, and the prime contractor).</li> <li>• Basic incident information (date, time, specific location, and prevailing weather conditions). This should be in sufficient detail to enable the Construction Program to obtain the California Highway Patrol's or local police report if necessary.</li> <li>• Names of the persons involved in the incident and their affiliation with the contract (contractor, consultant, state employee, or private citizen).</li> <li>• Description of the incident and how it occurred (facts only).</li> </ul>	<p>Content:</p> <ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> </ol>

<ul style="list-style-type: none"> <li>• Identification of other agencies making an investigation, and the names, badge numbers and report numbers when this information is available.</li> </ul>	
<p>The resident engineer should take sufficient photographs or videotapes to document the conditions that existed at the time of the incident, including all signing and traffic control features that may have been in effect at the time of the accident. Depending on district policy and the nature and severity of the accident, additional documentation may be required. The construction safety coordinator should be consulted for additional information in such cases.</p>	<p>Additional documentation:</p>

# Teaching Secrets: Take Charge of Your Classroom

By Gail Tillery

"If he were my teacher, I'd make him cry," remarked a sophomore at my high school after a teacher we'd just hired did a "shadow day." Although I didn't share that specific comment, I did reiterate to our new colleague that classroom management would be his biggest challenge. And so it was.

As mentoring coordinator at our large suburban high school, I'm in charge of inducting about 25 teachers a year. The teachers of most concern, of course, are the ones I affectionately dub the "baby teachers" (though not to their faces). Usually, these novice educators are very young—most have just graduated from college—and they are still feeling their way in life, much less in the classroom. Suddenly they may find themselves standing in front of a room filled with 35 seniors, some of whom are only three years younger than they are. In many cases, the disaster is coming on fast.

The first day of teaching school is something that must be experienced to be believed. Novice teachers think they are ready, but they are not. Based on years of working with these wonderful young people, I present the following advice.

**What happens on the first day will happen on the last day.** This means you must decide in advance what you want your classroom atmosphere to be. What will a typical day look like in your room? In order to make your vision happen, you must have a concrete, simple plan. Harry Wong's excellent book, *The First Days of School*, is an invaluable resource for setting up routines that will allow your daily learning activities to function efficiently.

**You are the king or queen of your room.** Students this age will act as if they want to be in charge. They don't. They are looking to you to set the atmosphere and the agenda. Be their leader instead of letting them run the show. This means setting boundaries, making consequences clear, and following through if necessary. Your students do not need a new friend. They need a teacher—and a leader. It's your responsibility to take the point position and lead them where they need to go.

**Dress the part; act the part; speak the part.** Particularly when you are young, you must set yourself apart from your students. I have actually advised young female teachers to buy some suits and cut their hair. And yes, for males, ties are a must. Professional clothing not only makes you look more mature and in charge; it makes you feel that way. Don't even

*think* of flip-flops. *Ever*. And *never* use the word “like” except as a verb. Even then, question its use!

**Act the part, Part II:** Take down your Facebook and your MySpace pages. Period. They will find it. Do not discuss your private life with your students—especially if you choose to drink. While they cognitively understand that it’s legal for you, they’re not experienced enough to filter it. Thus, they will say: “But Ms. Smith drinks, so it must be cool.”

**Realize that you are a public figure.** Understand that, while in my generation, your name was discussed at the ball field, this generation of students (and parents!) will be discussing you online and via text. As your first-period students leave the classroom on the first day of school, they will text on their way to second period about you. You’re a new teacher, which makes you interesting to them. What do you want them to be saying about you, in 140 text characters or less?

**Let go of your need to be liked.** Novice high school teachers want so badly to be popular with their students that they lose sight of the truth that teaching is not a popularity contest. My favorite TV show ever is M\*A\*S\*H, and one of my favorite scenes involves Major Margaret Houlihan and a young, wounded G.I. He’s in pain, afraid, confused, and very far from home. As she gives him a sponge bath, he says furiously, “I hate your guts!” To which she very calmly replies, “My guts are not here for you to love.” Adopt this sentence as your motto, and believe it in your heart. Understand that you must earn your students’ respect; 99 percent of the time, their love will follow.

After 24 years of teaching, the best compliment I ever received continues to be this: “She’s tough, but she’s fair.” Show me a teacher who has a sense of her own power in the classroom, and I’ll show you students who feel safe and comfortable and who are learning to their utmost because there’s no drama and chaos in the room. Understanding that you are the leader will make your experience, and your students’ experience, a pleasant and rewarding one. And you won’t be suicidal at Thanksgiving.

*Gail Tillery is mentoring coordinator at a suburban high school in northeast Georgia. Teacher Magazine, August 20, 2008,*

# 3-2-1

Ask students to write the numerals, 3, 2, and 1 down the left side of their paper (a half sheet is fine), leaving a few lines of space between each number. Then post or announce prompts for each number, asking students to write three of something, two of something and then one of something. For example, students might explain three new things they learned from the lesson, two areas in which they are still confused and one way they might apply what they have learned to another area. The specific prompts will vary with the lesson content and your instructional goals, but many teachers make the “one item” task more challenging than the “three item” task.

Examples:

- 3 – Identify three characteristics of Renaissance art that are different from those of art in the Middle Ages.
  - 2 – List two important scientific debates that occurred during the Renaissance.
  - 1 – Provide one good reason that “rebirth” is an appropriate term to describe the Renaissance.
- 
- 3 – Identify three places in which the story is set.
  - 2 – Identify the two types of conflict that the protagonist faced.
  - 1 – Explain the one main theme of the story.

*Adapted from Summarization in Any Subject by Rick Wormeli, ASCD, 2005.*

## **Redefining Rigor**

The authors [Norton Grubb and Jeannie Oakes] call for proponents of standards to consider conceptions of rigor aside from what they deem the conventional approaches. Such approaches, in their view, include requiring higher scores on standardized tests and requiring presumably demanding courses such as Algebra 2 and Advanced Placement courses.

The expanded view of rigor that the authors advocate includes an emphasis on students' demonstration of their depth of learning, rather than their familiarity with a vast array of content areas.

They also call for keener attention to helping students acquire more-sophisticated levels of understanding, including higher-order-thinking skills, and to ensuring that they can apply learning in unfamiliar settings.

For instance, the authors say, the ability to respond to questions about *The Catcher in the Rye*, a staple of high school English classes, does not translate into an ability to understand voter pamphlets, fill out complex applications, write instruction manuals, or read auto-repair manuals.

The paper also calls for greater attention to increasing the capacity of schools serving disadvantaged students to meet high standards.

"The problem isn't that standards don't exist, but that too many students do not meet them—and that a large proportion of these students are working-class, immigrant, African-American, and Latino," the paper says.

Those calling for higher standards, the paper contends, have been weak on ideas for how to help schools meet those standards.

The paper also urges the fostering of "multiple pathways through high school" that provide students with opportunities to develop multiple conceptions of standards.

That idea involves creating more theme-based programs, or pathways, somewhat akin to the academic majors and concentrations of postsecondary education, the paper says.

Some pathways could be broadly occupational, such as business or medical occupations, and others could focus on such issues as social justice or environmental concerns, they suggest.

"[A]ll of them would provide room for examining the important occupational, political, and social issues of adult life in the process of teaching disciplinary subjects," the authors write.

*Excerpted from "Push to Revamp High Schools Off Track, Scholars Say" published in Ed Week, October 10, 2007*

## Carousel Brainstorming

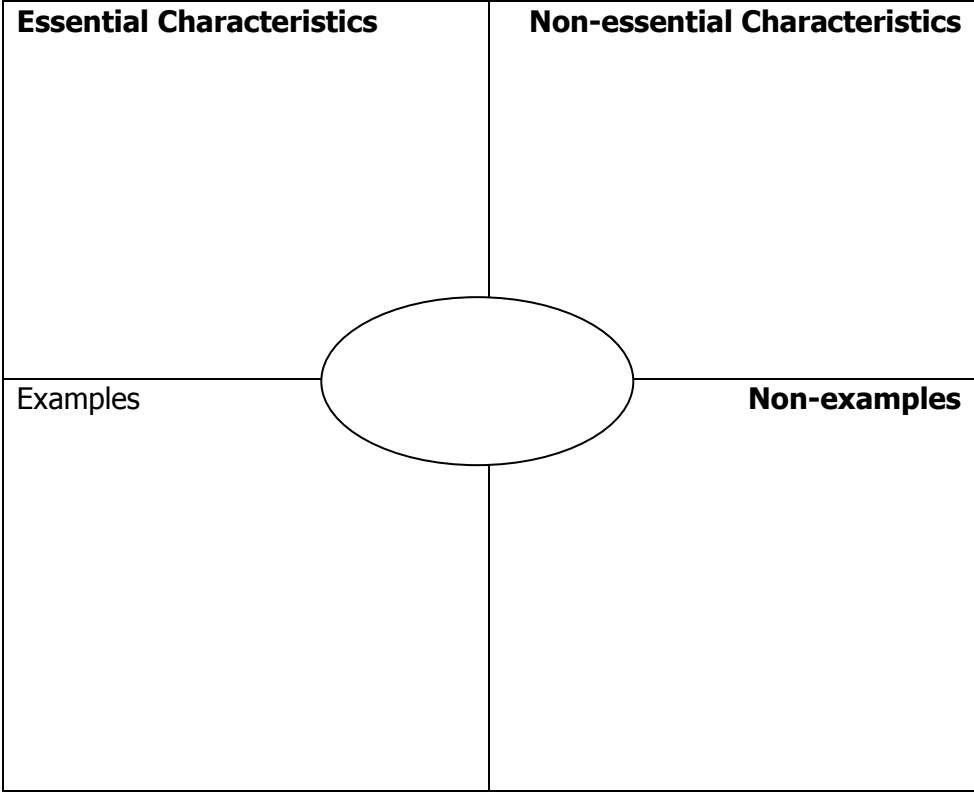
1. Generate X number of questions for your topic of study and write each question on a separate piece of poster board or chart paper. (Note: The number of questions should reflect the number of groups you intend to use during this activity.) Post questions sheets around your classroom.
2. Divide your students into groups of 5 or less. For example, in a classroom of 30 students, you would divide your class into 6 groups of five that will rotate around the room during this activity.
3. Direct each group to stand in front of a homebase question station. Give each group a colored marker for writing their ideas at the question stations. It is advisable to use a different color for tracking each group.
4. Inform groups that they will have X number of minutes to brainstorm and write ideas at each question station. Usually 2-3 minutes is sufficient. When time is called, groups will rotate to the next station in clockwise order. Numbering the stations will make this easy for students to track. Group 1 would rotate to question station 2; Group 2 would rotate to question station 3 and so on.
5. Using a stopwatch or other timer, begin the group rotation. Continue until each group reaches their last question station.
6. Before leaving the final question station, have each group select the top 3 ideas from their station to share with the entire class or write a brief summary of the ideas at the station.

Lipton, L., & Wellman, B. (1998). Patterns and practices in the learning-focused classroom. Guilford, Vermont: Pathways Publishing.

### Questions Used in This Exercise:

- Why do students need to learn to summarize and paraphrase information?
- How are 2-Column Notes likely to improve student learning?
- How can students use 2-column note-taking beyond high school?
- How might 3-2-1 question prompts improve student performance in our classrooms?
- What are occasions that you might use Carousel Brainstorming in your teaching?
- What obstacles may arise as you use these strategies and how will you overcome them?
- How can your administrators support you in using these strategies effectively?
- How might integrating these strategies into instruction change a classroom?
- What reasons could you give to a parent who questioned why you were "teaching reading"?
- Why do high school teachers need to be concerned with students' reading skills?

# Fruyer Model



The **Minute Paper** is the single most commonly used classroom assessment technique. It really does take about a minute and, while usually used at the end of class, it can be used at the end of any topic. Its major advantage is that it provides rapid feedback on whether the *professor's* main idea, and what the *students* perceived as the main idea, are the same. Additionally, by asking students to add a question, this assessment becomes an integrative task. Students must first organize their thinking to rank the major points and then decide upon a significant question. As we quickly realize, really good questions are hard to formulate.

Students need not necessarily be asked to list the most important or main point of a session. Sometimes a professor may wish to probe for the most disturbing or most surprising item. The Minute Paper is creatively variable to match the teaching/learning environment.

The Minute Paper assists students to organize a "chunk" of information and reduces the threshold for expressing ignorance by making it easier (and more private) to ask a question. Minute Papers generally provide positive reinforcement for the professor and have the added surprise that students DON'T all have the same questions. Professors can read about four Minute Papers per minute.

---T.A. Angelo and K. P. Cross, 1993. *Classroom Assessment Techniques*, 2nd ed. San Francisco: Jossey-Bass., p.148-53.

## **Traffic Stripes and Pavement Markings**

### **4-8401 General**

This work consists of applying painted and thermoplastic traffic stripes and pavement markings. The special provisions may also allow the contractor to substitute traffic striping and pavement marking tape. The engineer's estimate and the contract plans will indicate when and where the contractor must use paint or thermoplastic.

### **4-8402 Before Work Begins**

Before work begins, the resident engineer should discuss the operation with the maintenance striping superintendent or supervisor. Ask if there are any particular striping or marking concerns or requests that should be addressed. In addition, the resident engineer should take the following preliminary steps:

- Discuss materials to be used with the contractor. If the contractor plans to use solvent-borne or acetone-based paint, ensure its use conforms to the regulations of the local agency for air pollution control.
- Review striping and marking plans, standard details, and any special requirements.
- Review existing field conditions. Consult with district traffic unit personnel if any changes appear to be necessary.
- Verify the receipt and proper distribution of Form CEM-3101, "Notice of Materials to Be Used," which covers striping tape, paint, thermoplastic material, and glass beads.
- Examine the material as it arrives on the project. Look for identification tags indicating that personnel from the Office of Materials Engineering and Testing Services previously inspected the material.
- Read the manufacturer's instructions for striping tape and thermoplastic materials. When primer is required, determine the type the manufacturer recommends. Also determine the application temperature range for the thermoplastic material.
- Inspect the contractor's equipment for specification compliance either in the contractor's or subcontractor's yard or on another project. Examine the contractor's methods for checking spread rates of paint and glass beads, application temperatures of thermoplastic material, and maximum temperatures of paint.
- Ensure that the contractor's stencils will produce correctly dimensioned pavement markings.

### **4-8403 During the Course of Work**

During the work, do the following:

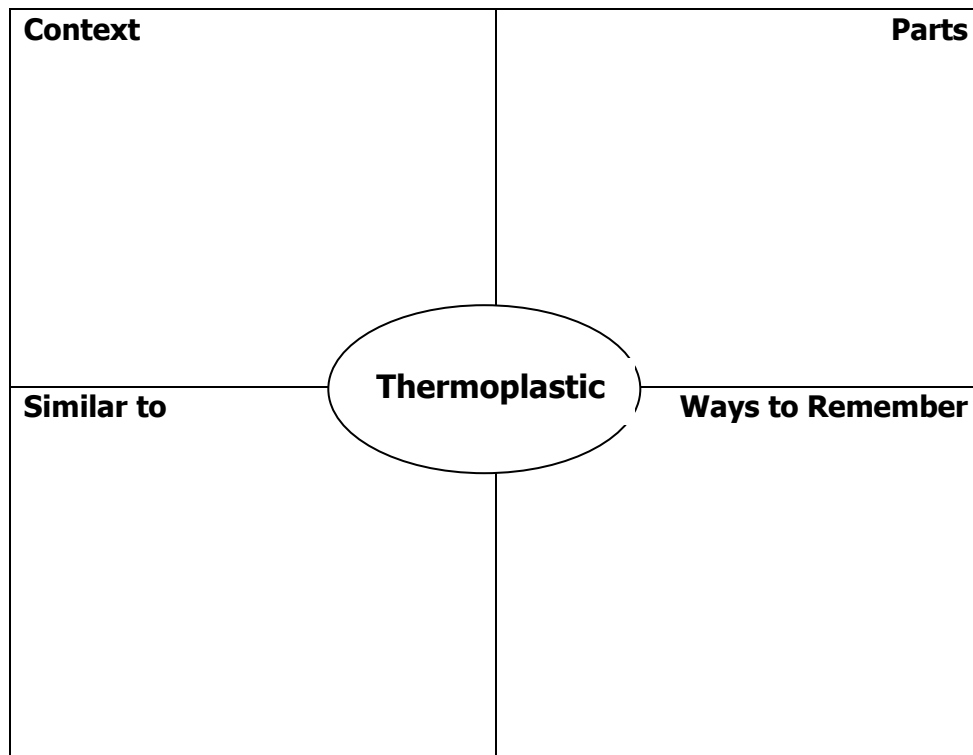
- Check the contractor's layout work. Determine that traffic stripes and pavement markings will be correctly located. Where necessary, assist the contractor to match existing striping cycles. Require that thermoplastic material be placed within the specified temperature range. Thermoplastic material heated to excessive temperatures can flash and splatter when exposed to air. Check for accuracy the temperature gages mounted on heating equipment. Employees working around thermoplastic material should wear suitable personal safety equipment, long-sleeved shirts, and eye protection.
- Before applying thermoplastic material, check and document the pavement temperature.
- Before applying paint, check and document the atmospheric temperature and expected weather conditions. Never apply paint when rain, fog, or condensation could damage the freshly painted surface.
- Require that paint temperatures not be allowed to exceed the specified maximums for solvent-borne or water-borne paints.
- Before applying striping or marking, check the condition of the pavement. Require the pavement to be dry and clean as specified.

- Check traffic stripes for the correct width and edge definitions, lengths of gaps and individual stripes, alignment, direction of application, and correct superimposition of second coats.
- Require the contractor to remove drips, overspray, improper markings, and material tracked by traffic.
- Check that the applied thermoplastic material complies with thickness requirements.
- Check application rates for glass beads and paint. Inspect the stripes to ensure that glass beads are spread uniformly and properly embedded.
- Check thermoplastic markings for workmanship as the markings are applied. Do not permit bumps resulting from overlaps in extruded materials.
- After application, look for any damage to striping or marking and document any rejections.
- Conduct and document an immediate night inspection to ensure the reflectivity of the installed material. If you encounter any problems, notify the contractor immediately for corrections.

#### 4-8404 Measurement and Payment

Measure the striping and markings according to the units and manner specified in the *Standard Specifications* and the special provisions. Record such measurement in the daily reports and the calculation sheets to support partial and final payments. The *Standard Specifications* require measurements along the line of the traffic stripe. Such measurement would normally be done with a measuring wheel or a vehicle-mounted electronic measuring device. The areas of the various standard pavement markings are shown in the *Standard Plans*. You may use these areas in calculations to determine pay quantities. Where the areas are variable, such as for limit lines of variable lengths, you will need to make field measurements.

[http://www.dot.ca.gov/hq/construc/manual2001/chapter4/chp4\\_84.pdf](http://www.dot.ca.gov/hq/construc/manual2001/chapter4/chp4_84.pdf)



# Frayer Model

The Frayer Model (Frayer, Frederick and Klausmeier, 1969) is a graphic organizer that differentiates characteristics which define an important concept and characteristics merely associated with it. As students complete a Frayer Model grid, they are prompted to distinguish between examples that represent the concept and non-examples, which lack some key attribute of the concept. As a result, students construct rich and sophisticated meanings of important vocabulary terms.

A Frayer Model grid contains four compartments for recording information about a concept: essential characteristics, nonessential characteristics, examples and non-examples. (*See Rhombus example in Exhibit 11.*) A Frayer Model grid could be given to students as a worksheet or could be developed by the teacher on the chalkboard or overhead transparency. It could also serve as a study guide for students as they read.

To introduce this activity, the teacher can break students into cooperative groups with the task of listing as many examples of the concept as they can. These examples are recorded on the chalkboard and students are encouraged to add to the list or to challenge examples already offered. Then students analyze these examples to ascertain what all seem to have in common. During this phase, students began to identify the key characteristics of a concept.

As students read, they locate information which belongs in each of the four Frayer Model quadrants: *essential characteristics* (what all have); *non-essential characteristics* (what some have and others don't); *examples* (these are . . . “a rhombus”) and *non-examples* (these are not . . . “a rhombus”). A natural result of this activity is that students confirm or reject information generated earlier from the class as they complete the grid.

After reading, the teacher leads a discussion on the examples and characteristics that students were able to confirm from the text. Other characteristics and examples are then placed in the non-essential and non-examples sections. Further study may be needed to determine whether some items are examples or non-examples.

As a final step, students write a definition of the concept that includes all the key or defining characteristics. The Frayer Model activity emphasizes making connections, self-questioning, determining importance, making inferences and synthesizing.

See *Literacy Across the Curriculum*, pages 119-120.

## Word Sorts or List-Group-Label

Word Sorts are vocabulary exercises in which small groups of students collaborate to categorize key vocabulary terms. As a pre-reading activity, students do not have to know the words; guesses for meaning can be just as effective as prior knowledge.

The steps in developing a Word Sort:

1. The teacher selects key vocabulary terms from the reading or concept. Consider that each possible "cluster" should contain at least three like terms.
2. Before students read, or after they have completed a reading selection, organize them in small groups.
3. Give students a set of index cards or small pieces of paper with one term printed on each.
4. Students then classify or "sort" the words into clusters that they determine and label.
5. Students present their clusters and why they chose these clusters.

Variations:

- As a strategy to confirm meanings of the terms, students may be allowed to look up the actual meanings or contexts in which the words are used.
- It is helpful to include some terms that all students will have in common knowledge.
- Students can post their clusters on chart paper or newsprint for further reference. This becomes a word wall.

Based on strategies in Daviels and Zemelman, *Subjects Matter*.

Words in this activity from Chapter 1, *Electrical Principles and Practices* by Mazur and Zurlis. ATP.

Law of charges	Fossil fuel	Potential energy	Fission
Hydroelectric	Thermal	Valence shell	Semiconductor
Element	Sulfidation	Molecule	Compound
Atom	Electron	Neutron	Proton
Positive	Negative	Matter	Conductor
Insulator	Gas	Solid	liquid

(Slip Opinion) OCTOBER TERM, 2007

Syllabus

NOTE: Where it is feasible, a syllabus (headnote) will be released, as is being done in connection with this case, at the time the opinion is issued. The syllabus constitutes no part of the opinion of the Court but has been prepared by the Reporter of Decisions for the convenience of the reader. See *United States v. Detroit Timber & Lumber Co.*, 200 U. S. 321, 337.

## SUPREME COURT OF THE UNITED STATES

Syllabus

PLAINS COMMERCE BANK *v.* LONG FAMILY LAND & CATTLE CO., INC., ET AL.  
CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE EIGHTH  
CIRCUIT

No. 07–411. Argued April 14, 2008—Decided June 25, 2008

Petitioner Plains Commerce Bank (Bank), a non-Indian bank, sold land it owned in fee simple on a tribal reservation to non-Indians. Respondents the Longs, an Indian couple who had been leasing the land with an option to purchase, claim the Bank discriminated against them by selling the parcel to nonmembers of the Tribe on terms more favorable than the Bank offered to sell it to them. The couple sued in Tribal Court, asserting, *inter alia*, discrimination, breach-of-contract, and bad-faith claims. Over the Bank’s objection, the Tribal Court concluded that it had jurisdiction and proceeded to trial, where a jury ruled against the Bank on three claims, including the discrimination claim. The court awarded the Longs damages plus interest. In a supplemental judgment, the court also gave the Longs an option to purchase that portion of the fee land they still occupied, nullifying the Bank’s sale of the land to non-Indians. After the Tribal Court of Appeals affirmed, the Bank filed suit in Federal District Court, contending that the tribal judgment was null and void because, as relevant here, the Tribal Court lacked jurisdiction over the Longs’ discrimination claim. The District Court granted the Longs summary judgment, finding tribal court jurisdiction proper because the Bank’s consensual relationship with the Longs and their company (also a respondent here) brought the Bank within the first category of tribal civil jurisdiction over nonmembers outlined in *Montana v. United States*, 450 U. S. 544. The Eighth Circuit affirmed, concluding that the Tribe had authority to regulate the business conduct of persons voluntarily dealing with tribal members, including a nonmember’s sale of fee land.

<http://www.supremecourtus.gov/opinions/07pdf/07-411.pdf>

## Word Walls

Word walls are sheets of paper on which students and the teacher write interesting, confusing and important words from what they are reading. The words are then posted in a prominent place in the classroom. Students refer to the words on the word wall for writing activities, comprehension assistance and for word-study activities.

The steps in developing a **word wall** are

1. Provide students with an article or excerpt that has key information and vocabulary for a unit being studied.
2. Students preview the article to identify up to five words that they do not know, think are very important to the content or that others may not know. Each word is written on a separate sheet of paper or large card.
3. With a partner, students use the context in which the words occur and write their own definitions on the sheets with the words.
4. In larger groups or as a whole group, all definitions for a single word are discussed. The group agrees on a common definition based on the context in which the word is used.
5. The "accepted" definition is posted on the word wall for all students.

There are many ways to vary the process of developing a **word wall**.

- Include the pronunciation for difficult or foreign words.
- Write a new sentence in which the word is used correctly.
- Identify the part of speech
- Post all definitions until all the passage is read and then have students vote on the best definition.
- Allow students to write some definitions that sound reasonable but are not accurate as a way of assessing understanding.
- Let the teacher pre-select the terms.
- At the end of the unit, select words that may be applicable to the next unit or are the most important concepts and move those words to a permanent word wall.

Possible Extension Activities (from Janet Allen's *Reading History*)

- Explain the word so that a friend could understand it.
- Describe how this word would be used in a specific time, place, event or situation.
- Choose one of the characters or historical figures that we have encountered and write some dialogue for a scene in which that person would use this word.
- List other words someone might use in place of this word.
- Make a prediction for a situation in which someone might use this word.
- Write about a personal connection you have with the word.
- Write a question that this word would answer.
- Use this word in a news headline and then write the first paragraph for the headline that shows why the word was in the headline.
- Illustrate the word's meaning and then illustrate its opposite.
- If you saw this word on a sign, what would your next action be?

## Anticipation Guide for “Enduring Impressions”

**Choose True or False for each of the following statements.**

\_\_\_\_\_ No wood is best for shingles.

\_\_\_\_\_ The best wood for decks is ebony.

\_\_\_\_\_ Red cedar splits easily.

\_\_\_\_\_ Pine is used outdoors because it doesn't decay easily.

\_\_\_\_\_ Treated woods don't require special fasteners.

\_\_\_\_\_ Treated woods pose no problems for installers.

\_\_\_\_\_ The best way to dispose of scrap pieces of pressure-treated wood is by burning.

## Enduring Impressions

Select the right wood for outdoor projects that will stand the test of time.

You want your outdoor projects to last—Mother Nature doesn't. Very few wood species can endure the combined effects of wind, rain, and sun. Two, however, do hold up well outside: western red cedar and pressure-treated pine.

### Western Red Cedar

Western red cedar is one of the most decay-resistant species in America; it's completely nonresinous, so it offers no "food" for decay. It grows along the coastal ranges of western Canada and the United States, from Alaska south through British Columbia,

Washington, and Oregon, and east to Idaho and Montana. Western red cedar's tendency to split makes it perfect for shingles, which are generally sawn smooth, and shakes, made by splitting the wood. When exposed, red cedar weathers to an attractive silver gray. Because it isn't a very strong wood, though, it's a poor choice for furniture under stress, such as a chair.

### Pressure-Treated Pine

Pressure-treated pine is the most common wood used in outdoor construction because pine readily accepts wood preservatives, making it inexpensive to produce. Four distinct levels of protection are based on the intended use of the lumber. Varying degrees of chemical retention also help in keeping costs to a minimum. In general, the thicker the wood, the higher the preservative rating. The highest chemical retention level is reserved for permanent wood foundations. Second, ground-contact protection is designed for 4-by and 6-by lumber. And the third level is approved for above-ground use; it applies to 2-by lumber. Decking lumber—or 5/4-inch-thick deck planks—receives the lowest level of protection. These end-use ratings are printed on labels stapled to the boards.

### Special Fasteners

Although it may be well known that corrosion-resistant fasteners should be used when building outdoor furniture, it may come as a surprise that new pressure-treated wood requires fasteners with higher levels of protection. Your best bet is to use stainless steel fasteners whenever possible. Or, look for hot-dipped galvanized fasteners with a G-185 rating (1.85 ounces of zinc is used for every square foot of metal). Previous choices, such as G-60 or G-90 fasteners, will break down over time if used with the new preservatives.

### Proper Handling

Finally, when using pressure-treated lumber, take care to protect yourself from the chemicals used to treat the lumber, and wear gloves, eye protection, and a quality dust mask. Also, you should never burn scraps of preservative-treated wood; both the fumes and the ashes can be toxic.

Labels stapled to the ends of pressure-treated lumber detail the treatment rating and project usage.

[http://www.lowescreativeideas.com/idea-library/projects/Enduring\\_Impressions\\_0307.aspx](http://www.lowescreativeideas.com/idea-library/projects/Enduring_Impressions_0307.aspx)



**Anticipation Guide—Student and Teacher Work**

***On a six- point scale (with 6 as the highest), rate how strongly you believe each statement is true.***

Before Reading		After Reading
1 2 3 4 5 6	1. The harder teachers work, the more their students learn.	1 2 3 4 5 6 Evidence:
1 2 3 4 5 6	2. Teachers work harder than students in most classrooms.	1 2 3 4 5 6 Evidence:
1 2 3 4 5 6	3. The person who does the work learns the most.	1 2 3 4 5 6 Evidence:
1 2 3 4 5 6	4. Having the students do the work reduces the amount that students learn.	1 2 3 4 5 6 Evidence:
1 2 3 4 5 6	5. Unorganized teachers have students do more work.	1 2 3 4 5 6 Evidence:

By John Norton, *Teacher Magazine*, September 25, 2007

## Let the Students Do the Work

"The fact that the teacher does most of the work at school explains why there is little learning in school," Harry Wong, author of *The First Days of School*, has written. "The research says that the person who does the work is the only one doing the learning."

TLN member Claudia Swisher, an English teacher from Oklahoma, agrees. "It's amazing how much kids will sit back and let teachers do the work for them," she says. "And if we let it happen, who can blame them? I haven't read my syllabus to my high school students for years. They read it and each student writes a quiz based on the content. They also write a key to the quiz. I collect the quizzes and distribute them. Everyone takes a quiz then returns it to the 'author' who grades it. By the end, kids have been through the material three times, and I haven't strained my throat or bored the socks off all of us. I always tell my students, 'I wrote it; I don't have to learn it!'"

Ginny White teaches gifted classes in a Florida middle school. She has this sign prominently posted on her classroom wall: My goal this year is for everyone to go home equally tired. "It's a good reminder for me to see on a daily basis," she says. "It prompts me to talk with the kids about shared responsibility for learning and keeps me thinking about ways to make sure I'm clear with them about the what and why of the work, but that they are doing the work."

Another Florida teacher, Mary Anne Kosmoski, shares a timely tip from her student-teacher days nearly 30 years ago. "In 1978, my cooperating teacher looked at me as I labored cutting out letters and pictures for an activity and said, 'Don't ever do something the kids can do.' It was simple advice," Kosmoski says, "but over the years it has saved me thousands of hours, and given my kids many extra opportunities to learn. They have paged through historical photos looking for just the right ones. They have manipulated stencils and found creative ways to divide the labor. They have assumed responsibility for everything from delivering and recycling newspapers to deciding what needed to go into a first aid kit for a field trip. It has helped develop classroom community and discussions. Sometimes it's just easier to do it yourself. But letting the kids do it is worth it in the long run."

## Anticipation Guide

### Description:

The purpose of the anticipation guide is to create a mismatch between what students may know and believe and what is presented in the text. The anticipation guide was first developed by Herber who suggested that comprehension may be enhanced if students make predictions about concepts covered in the text.

### Process:

**Step One:** The teacher identifies the major concepts and supporting details in the reading selection, lecture or film.

**Step Two:** The teacher elicits the students' experiences and beliefs that relate to the major concept(s) previously identified. The teacher could ask students to write down all the words that they associate with the concept.

**Step Three:** The teacher creates statements reflecting personal beliefs concerning a topic that may contradict or modify the beliefs of the students. The teacher should include some statements that are consistent with the students' experiential background and with the concepts presented in the material or lesson.

**Step Four:** The teacher arranges the statements on a sheet of paper, overhead transparency, PowerPoint slide or the chalkboard. The students respond positively or negatively to each statement on an individual basis. Students should then record their justification for each response in writing, so they will have a reference point for discussion.

**Step Five:** The teacher engages students in a pre-reading discussion by asking for a hand count of response to the statement. Students can then share the justifications for their responses.

**Step Six:** Read the selection.

**Step Seven:** The teacher engages students in a post-reading discussion comparing their reactions with the statements before and after the reading. This discussion may take place either in small groups or as a class activity.

See *Literacy Across the Curriculum*, pages 113-114.

# Inferring Relationships

(Adapted from Marzano's *Classroom Instruction That Works*)

## Metaphors/Similes

Two items are connected by an abstract or nonliteral relationship

Metaphor	Literal	General, Abstract	Literal
Love is a rose	Rose: sweet to smell and pleasant to touch, but thorns can stick you	Something is wonderful and you want to go near it, but getting too close may hurt.	Love: makes you feel happy, but the person you love may hurt you.
The cell is like the Starship Enterprise.	Nucleus	Something that runs the system	The Bridge
	Selectively permeable membrane	Part that keeps out bad things and lets in good	Transporter Room
Making a sandwich is like writing an essay.	Bread	Holds things together	Introduction and Conclusion
	Filling	"real" meat—what is important	Body
	Condiments	Tastes better	Details

## Analogies

A:B::C:D

### **Examples:**

Oxygen is to humans as carbon dioxide is to plants.

Eighty is to eight as dime is to \_\_\_\_\_

Mean is to average as mode is to \_\_\_\_\_

Robert Frost is to poetry as \_\_\_\_\_ is to \_\_\_\_\_

\_\_\_\_\_ is to \_\_\_\_\_ in *The Scarlet Letter*

Digital is to computer as \_\_\_\_\_ is to \_\_\_\_\_

See Marzano's *Classroom Instruction That Works*.

# RAFT

- R** Role (Who are you?)
- A** Audience (To whom are your writing?)
- F** Format (What form will your writing assume?)
- T** Topic (What are you writing about?)

See *Literacy Across the Curriculum*, pages 110-112.

<b>Role</b>	<b>Audience</b>	<b>Format</b>	<b>Topic</b>
<b>Teacher</b>	<b>Parents</b>	<b>Memo</b>	<b>Why we need to read more</b>
<b>Principal</b>	<b>Students</b>	<b>Speech</b>	<b>Why we need to write more</b>
<b>Student</b>	<b>Teachers</b>	<b>Ad</b>	<b>Why we need to buy more books</b>

### Examples of RAFT Assignments

ROLE	AUDIENCE	FORMAT	TOPIC
Newspaper Reporter	Readers in the 1870's	Obituary	Gen. Custer's Qualities
Lawyer	U.S. Supreme Court	Appeal Speech	Dred Scott Decision
Abraham Lincoln	Dear Abby	Advice Column	Frustrations with his generals
Oprah	Television Public	Talk Show	Women's Suffrage in Early 20 <sup>th</sup> Century
Frontier Woman	Self	Diary	Hardships in West
Constituent	U. S. Senator	Letter	Need for Civil Rights Legislation in 1950's
News writer	Public	News Release	Ozone Layer Has Been Formed
Chemist	Chemical Company	Instructions	Dangerous Combinations to Avoid
Graham Cracker	Other Graham Crackers	Travel Guide	Journey Through the Digestive System
Plant	Sun	Thank You Note	Sun's Role in Plant's Growth
Scientist	Charles Darwin	Memo	Refute a Point in Evolution Theory
Square Root	Whole Number	Love Letter	Explain Relationship
Julia Child	TV Audience	Script	How Yeast Works in Bread
Doctor's Association	Future Parents	Web Page	Need for Proper Prenatal Nutrition
Advertiser	TV Audience	Public Service	Importance of Fruit Announcement
Lungs	Cigarettes	Complaint	Effects of Smoking
Huck Finn	Jim	Telephone Conversation	What I Learned During the Trip
Joseph Stalin	George Orwell	Book Review	Reactions to <i>Animal Farm</i>
Comma	Ninth-Grade Students	Job Description	Use in Sentences
Mozart	Prospective Employer	Job Interview	Qualifications as a Composer

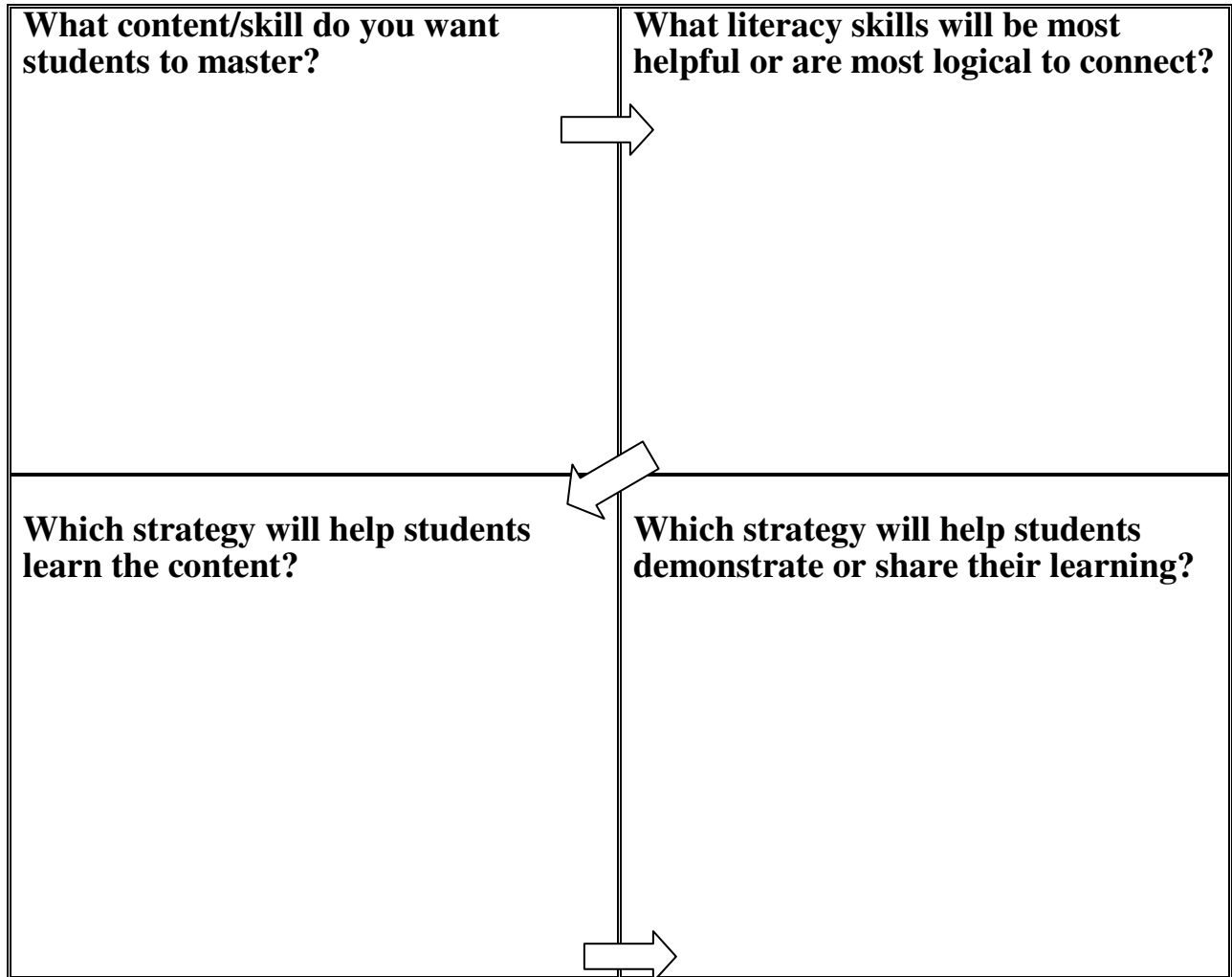
Buehl, D. (2001). *Classroom Strategies for Interactive Learning, 2<sup>nd</sup> Edition*. Newark, DE: International Reading Association, page 115.

## Our RAFT

<b>Role</b>	<b>Audience</b>	<b>Format</b>	<b>Topic</b>
Workshop Participant	Others in my department	Memo	What I learned

## Planning to Combine Literacy and Real-world Content

<p><b>What content/skill do you want students to master?</b></p>	<p><b>What literacy skills will be most helpful or are most logical to connect?</b></p>
<p><b>Which strategy will help students learn the content?</b></p>	<p><b>Which strategy will help students demonstrate or share their learning?</b></p>



The diagram consists of a large rectangle divided into four equal quadrants by a horizontal and a vertical line. The quadrants contain the following text:

- Top-left: **What content/skill do you want students to master?**
- Top-right: **What literacy skills will be most helpful or are most logical to connect?**
- Bottom-left: **Which strategy will help students learn the content?**
- Bottom-right: **Which strategy will help students demonstrate or share their learning?**

Four arrows indicate a clockwise flow between the quadrants:

- An arrow points from the top-left quadrant to the top-right quadrant.
- An arrow points from the top-right quadrant to the bottom-right quadrant.
- An arrow points from the bottom-right quadrant to the bottom-left quadrant.
- An arrow points from the bottom-left quadrant to the top-left quadrant.

## Sample Daily Plan (Viruses: Wanted Dead or Alive) (adapted from Career Solutions Publishing Group)

**Getting started:** (5 minutes) Respond to journal prompt: Viruses are always bad and can never be treated. Have one or two students share their writing.

**Engage:** (10 minutes) Have students complete an anticipation guide with the following statements:

1. Viruses live independently of other organisms.
2. All viruses appear to be harmful.
3. You can treat a virus with antibiotics.
4. A virus can infect every living thing, including bacteria.
5. The genetic material of all viruses is the same.
6. Viruses cannot copy themselves without a living host cell.
7. Viruses can adapt to their environment and copy themselves quickly, mutating into new strains.
8. Viruses can be used to destroy harmful cells.
9. Two or more viruses can exist together in a host cell, and, while copying themselves, re-sort their genetic material to form a new virus.

**Explore:** (10 minutes) Students will share their answers and discuss what they know about viruses. Information is collected on a group graphic organizer on the board.

**Explanation:** (15 minutes) The teacher explains that most patients think they know how to treat viruses based on what others have told them. Talking with patients who already “know” what treatments should be used is a challenge for medical personnel.

The teacher shows the website, What the heck is a virus? (<http://people.ku.edu/~jbrown/bugs.html>) and asks students to locate the answers to the anticipation guide.

**Practice Together:** (10 minutes) As a group, the class visits another of the “bugs” on the website and creates a list of five statements for an anticipation guide. The teacher guides the discussion to information that people may think they know but is false for good statements.

**Practice in Teams:** (10 minutes) Student pairs select another “bug” and create an anticipation guide.

**Practice Alone:** (15 minutes) Students complete each other’s anticipation guides and then visit the website again to check for correct answers.

**Evaluate Understanding:** (10 minutes) Anticipation guides are returned to writers for checking.

**Closing:** (5 minutes) Reflection/exit slip: What have you learned about viruses today that will impact how you share information with patients?

## EMBEDDING LITERACY IN AUTHENTIC ANCHOR PROJECTS: EIGHT STEPS

The criteria for developing the prototype design template for **Authentic Anchor Project Units** at a minimum will include the following eight-step process.

1. Identify and describe a major project that is rich with reading and writing content that career/technical faculty will have students complete during each 12 weeks of school.
2. Identify the embedded reading and writing standard(s) and use of technology tools that can be taught through the authentic integrated project units. This will involve taking the reading and writing standards and being deliberate about identifying the specific knowledge and skills students are expected to apply, the types of materials to be read and the types of writing to be produced.
3. Identify the habits of success that students will be expected to apply in advancing their mastery of academic and technical content and skills. This will involve the identification of behavior expectations for individual and for teamwork; and specifications of other key habits of success important to the 21<sup>st</sup> century workplace.
4. Develop a summative assessment that incorporates reading, writing and technical content questions and the use of technology questions at the end of the unit. Describe re-teach strategies for those students who fail to demonstrate mastery and indicate the benchmark level that would be acceptable for demonstrating mastery at the proficient level.
5. Develop a process to pre-assess students' current knowledge and skills as it pertains to reading, writing, technical content, technology and tools embedded in the unit. Determine how students will be pre-assessed for current level of knowledge and skills in each of these five domains – reading, writing, technical content, the use of technology, and other skills and habits essential to success. Identify the methods and techniques for assessing students' understandings and skills in these areas including questioning, observations, worksheets, group learning activity, vocabulary, etc.
6. Develop how career/technical faculty will engage students with literacy and technical content and the use of technology and tools embedded in the **Authentic Anchor Project Unit**. This will involve identifying 1) a series of teacher-directed instructional activities; 2) student assignments aimed at helping students understand the reading, writing and technical content; and 3) ways technology will be used to enhance learning. Identify a series of activities that deal with how the students will be introduced to these literacy and technical concepts and language and to the technology tools and materials involved in completing this project.

7. Develop how English/language faculty will engage students with reading, writing and technical content and the use of technology and tools embedded in the **Authentic Anchor Project Unit**. Develop related contextual reading and writing assignments using the embedded literacy concepts in the unit. This will involve having students to work through assignments that are similar to those embedded in the career/technical project. It also involves using examples with varying levels of difficulty going from the basic, proficient to advanced level. Describe how teachers will check for understanding and determine which concepts can be team taught by the English/language arts and career/technical teachers.
8. Describe how students will demonstrate their understanding of reading, writing and technical knowledge and skills by completing the project as well as completing assignments designed to provide additional practice.

Once the eight steps have been completed, English/language arts and career/technical teachers will develop a daily and weekly instructional plan using the SREB/*HSTW* template provided during training to identify what the career/technical and English/language arts teachers will do to implement seven elements for teaching reading and writing for **Authentic Anchor Project Units**:

1. Introduce the career/technical lesson (career/technical teacher)
2. Assess students' reading and writing awareness (career/technical teacher)
3. Work through embedded example (career/technical teacher)
4. Work through traditional reading and writing examples (English/language arts teacher)
5. Work through related, contextual examples (career/technical and English/language arts teachers)
6. Students demonstrate understanding (career/technical and English/language arts teachers)
7. Formal assessment (career/technical and English/language arts teachers)

## Ten Strategies That Every Teacher Can Implement

1. **Admit Slips**—Students respond to one question at the beginning of class, such as “Which problem was hard for you?” or “What did you learn from your homework?”
2. **Exit Slips**—As students leave class, they give their teacher a slip on which they have responded to two questions: “What did I learn?” and “What am I confused about?”
3. **Double-entry or Two-column Note Journals**—Each page has a line drawn down the middle. On the left side are the main ideas from reading or a class lecture; on the right are the details. It can also be used as an explanation process. On the left is a sample problem; on the right side are the steps to solve the problem.
4. **Weekly Reflection**—at the end of the week, students write for three to five minutes reflecting on what they did and learned that week. Possible topics include how I solved a problem, how I used reading skills to learn this week, the most valuable thing I learned and how I will use what I learned on a real job.
5. **Open-response Questions**—On each test, students should have at least one open-response question that asks them to explain a process to solve a problem, compare different processes or ideas, analyze the importance of certain ideas or apply learning. Questions should be scored by a rubric.
6. **KWL Charts**—Used as a pre-reading and notetaking strategy, KWL charts have three columns, “What I Know (before reading),” “What I Want to Learn,” and “What I Have Learned (answers to the questions).” Class discussion focuses on the columns.
7. **Jigsaw Reading**—Students are divided into groups of four. They number from one to four. All “number ones” get the same article to read. After reading their article, all those who read article one, for instance, group together and discuss the main points. They return to their home groups and share the main ideas from all articles. Each group then makes a one-minute presentation to the whole class on the common ideas.
8. **Graphic Organizers**—As students read a passage, they outline the main ideas according to the organizational pattern of the text. Venn diagrams can be used, for example, for a passage that is organized by comparison/contrast. Cause and effect matrices can be used when nonfiction is organized that way. As students gain more experience, they select the organizer that matches the organizational pattern. They are also known as mind maps or thinking maps.
9. **Re-telling**—Pairs of students have the same passage. Student one reads aloud the first section (one or two paragraphs). Student two, without looking at the text, summarizes what the first student read aloud. They both look at the text and compare it to their understanding. They switch turns until the passage is finished.
10. **RAFT**—Students learn to focus their writing by defining their Role, Audience, Format and Topic, such as “As a graphic arts student, I am writing a letter to an editorial cartoonist to ask him how he designs his cartoons.

# Valuable Resources

## **From *High Schools That Work*:**

Literacy Across the Curriculum: Setting and Implementing Goals for Grades Six through 12

Getting Students Ready for College and Careers: Transitional Senior English

Getting Students Ready for College-preparatory/Honors English

High School Experiences That Improve Reading Proficiency: What States and Schools Can Do

## **For More Vocabulary Strategies:**

Allen. *Words, Words, Words*. Stenhouse.

## **For More Summarizing Strategies:**

Wormeli. *Summarization in Any Subject*. ASCD

## **For More Reading Strategies:**

Daniels and Zemelman. *Subjects Matter*. Heineman

Marano, Pickering and Pollock. *Classroom Instruction That Works*. ASCD

## Planning for Effective Strategy Use

Strategy	Key Points	Big 6 Skills Addressed	For More Information...	I am going to use when I...
<b>Cornell Notes</b>	<ul style="list-style-type: none"> <li>• Big ideas on left, supporting details on right</li> <li>• Good for review by folding page</li> <li>• Easy to differentiate by providing some information</li> </ul>	<p><b>Strongly:</b> Summarizing Paraphrasing</p> <p><b>Also addresses:</b> Categorizing Vocabulary</p>	<i>LAC 121</i>	Preview chapter 6
<b>3-2-1</b>				
<b>Carousel Brainstorming</b>				

<b>Strategy</b>	<b>Key Points</b>	<b>Big 6 Skills Addressed</b>	<b>For More Information...</b>	<b>I am going to use when I...</b>
<b>Frayer Model</b>				
<b>Word Sorts</b>				
<b>Word Walls</b>				
<b>Anticipation Guides</b>				

<b>Strategy</b>	<b>Key Points</b>	<b>Big 6 Skills Addressed</b>	<b>For More Information...</b>	<b>I am going to use when I...</b>
<b>Metaphors Similes/ Analogies/</b>				
<b>RAFT</b>				

