

CONTENT LITERACY STRATEGY DESCRIPTIONS
for the
2008 LOUISIANA COMPREHENSIVE CURRICULUM

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Brainstorming

Rationale

Brainstorming involves students working together to generate ideas quickly without stopping to judge their worth. In brainstorming, students in pairs or groups freely exchange ideas and lists in response to an open-ended question, statement, problem, or other prompt. Students try to generate as many ideas as possible, often building on a comment or idea from another participant. This supports creativity and leads to expanded possibilities. The process activates students' relevant prior knowledge, allows them to benefit from the knowledge and experience of others, and creates an anticipatory mental set for new learning (Buehl, 2001; Dreher, 2000).

Teaching Process

1. Begin by posing a question, problem, or other prompt to students. For example, "How many ways can you..." "What would happen if...?" Frame the prompt in such a way as to generate ideas and input from as many students as possible. Make sure students understand the prompt being addressed and the purpose and background of the brainstorming activity.

Brainstorm Prompt for a Geography Lesson on New Orleans

We have been learning about how the unique geography of the New Orleans area contributed to the devastation caused by hurricane Katrina. With a partner, think of all the possible things that could be done to compensate for the area's geography that might help prevent another similar disaster. Be creative and remember that no idea is too far-fetched. Work quickly; you have five minutes.

2. Ask students to work with a partner or in designated groups to brainstorm responses to the prompt. State to the students in the very beginning that all ideas are welcome, including those that might be considered out of the ordinary. These often stimulate the best contributions from the group.
3. After a set period of time, invite students to share their brainstormed ideas. Ideas should be listed on the board, overhead, or flipchart and should be in view of all students. Either designate a group spokesperson or encourage all students to call out ideas while you write them down. Avoid being judgmental about ideas as they are shared.
4. Once an initial list is established, tell students to build on the suggested ideas and to connect ideas that are seemingly unrelated. Focus on quantity.
5. Frequently, after an initial burst of ideas, there will be a time of silence. Allow the group to be silent for a moment. Most of the time, additional ideas will begin flowing and this will generate the eventual solution to the question.
6. Connect the brainstormed ideas with the content and information to be learned in the upcoming lesson. This can be accomplished by making statements, such as "We now have all these interesting ideas; let's see what the author says about..." or "Now let's compare your brainstormed solutions to the problem with the process recommended on page..."

Sources

Buehl, D. (2001). *Classroom strategies for interactive learning*. Newark, DE: International Reading Association.

Dreher, M.J. (2000). Fostering reading for learning. In L. Baker, M.J. Dreher, & J. Guthrie (Eds.), *Engaging young readers: Promoting achievement and motivation* (94-118). New York: Guilford Press.

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DR-TA – Directed Reading-Thinking Activity

Rationale

DR-TA is an instructional approach that invites students to make predictions, and then check their predictions during and after the reading (Stauffer, 1980). The DR-TA teaches students how to self-monitor as they read and learn, which leads to an increase in attention, comprehension, and achievement (Duke & Pearson, 2002).

Teaching Process

1. First, activate and build background knowledge for the content to be read. This often takes the form of a discussion designed to elicit information the students may already have, including personal experience, prior to reading. Also direct students' attention to title, subheadings, and other textual and format clues. Students' ideas and information should be recorded on the board or on chart paper.
2. Next, students are encouraged to make predictions about the text content. Ask questions, such as "What do you expect the main idea of this text will be?" From the title, what do you expect the author to say in this piece?" Students are often asked to write their predictions, so as to preserve a record of them as they read the actual text.
3. Then guide students through a section of the text, stopping at predetermined places to ask students to check and revise their predictions. This is a crucial step in DR-TA instruction. When a stopping point is reached, ask students to reread the predictions they wrote and change them, if necessary, in light of new evidence that has influenced their thinking. Their new prediction and relevant evidence should be written down as well. This cycle gets repeated several times throughout the course of the reading. There are numerous opportunities for the teacher to model his/her predictions, revisions, and evidence. Also prod students' growing understanding of the text with questions, such as "What do you know so far from this reading?" "What evidence do you have to support what you know?" "What do you expect to read next?"
4. Once the reading is completed, students' predictions can be used as discussion tools. When students write and revise predictions throughout the reading, they have a great deal to say about the text. Ask, "What did you expect to learn before we began reading?" and "What did you actually learn?"
5. Students should be guided to employ the DR-TA process on their own when reading.

Sources

Duke, N., & Pearson, P.D. (2002). Effective practices for developing reading comprehension. In A. Farstrup & S.J. Samuels (Eds.), *What research has to say about reading instruction* (205-242). Newark, DE: International Reading Association.

Stauffer, R.B. (1980). *Directing the reading-thinking process*. New York: Harper & Row.

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GISTing

Rationale

The ability to summarize is perhaps the most important subskill involved in comprehension (Caccamise & Snyder, 2005; Friend, 2000). But it is a difficult skill to teach. Unskilled students are prone to say too little or too much in their summaries (Thiede & Anderson, 2003). GISTing is an excellent strategy for helping students paraphrase and summarize essential information. Students are required to limit the gist of a paragraph to a set number of words. Individual sentences from a paragraph are presented one at a time while students create a gist that must contain only the predetermined number of words. By limiting the total number of words students can use, this approach to summarizing forces them to think about only the most important information in a paragraph, which is the essence of comprehension (Brown & Day, 1983).

Teaching Process

1. For the first step in teaching GISTing, select appropriate paragraphs on which to write gists. It is best to start with relatively short paragraphs of no more than three to five sentences that are easily understood.
2. Next, establish a limited number of spaces to represent the total number of words of the gist, say 15 or so.
3. Students read the first sentence of the paragraph and, using only the spaces allowed, write a statement in those spaces capturing the essential information of the sentence. This is the beginning of their gist.
4. Have students read the second sentence of the paragraph and, using the information from the first and second sentences of the paragraph, they rewrite their gist statement by combining information from the first sentence with information from the second. Again, the students' revised gist statement should be no more than the allotted number of spaces. This process continues with the remaining sentences of the paragraph.
5. As students read each succeeding sentence, they should rework their gist statement by accommodating any new information from the sentence into the existing gist statement, while not using any more than the allotted number of spaces.
6. Finally, students should share their gists for comment and critique.

A GISTing Example

A social studies teacher taught the GISTing strategy while his class was learning about ancient Rome. He selected a sample three-sentence paragraph from the textbook to teach gist writing. He began by typing the first sentence of the paragraph on the computer and projected it on the screen for his class to see. He then directed students to write a summary of the first sentence using only 15 words. He allowed students to work in pairs. Afterward, he elicited the various first-sentence gists from several pairs of students and typed and projected a version the whole class could agree upon. The teacher and his social studies students went through the same process for the remaining two sentences of the paragraph. As they read the new sentences, they revised their original gist but kept it within the 15 word limit (See the paragraph and gist sentences below.) By conducting the GISTing lesson with his students, the teacher was able to model and clarify the process throughout, until a final acceptable gist was crafted for the entire paragraph.

Paragraph from social studies text

Julius Caesar was famous as a statesman, a general, and an author, but ancient traffic jams forced him to become a traffic engineer, too. These traffic snarls were so acute in the marketplace of Imperial Rome and around the Circus Maximus that all chariots and ox carts were banned for ten hours after sunrise. Only pedestrians were allowed into the streets and markets. Caesar also found it necessary to abolish downtown parking and establish one-way streets.

Class gist statements for each sentence of paragraph

1. Julius Caesar was famous for many things including traffic engineer. _____
2. As traffic engineer Julius Caesar banned chariots and ox carts from Rome during the daytime.
3. As traffic engineer Julius Caesar banned all but pedestrians from Rome during the daytime.
4. As Rome's traffic engineer Julius Caesar allowed only pedestrians, created one-way streets, and banned parking.

After several gisting activities using this approach, the teacher guided students in constructing summaries without having to gist each sentence of a paragraph. It is more important that students recognize that the gisting process is a mental one and not necessarily a written one. Eventually, the teacher was gathering overall gists for sections of text by having students combine essential information from summary statement made from several paragraphs.

Sources

- Brown, A., & Day, J. (1983). Macrorules for summarizing text: The development of expertise. *Journal of Verbal Learning and Verbal Behavior*, 22, 1-14.
- Caccamise, D., & Snyder, L. (2005). Theory and pedagogical practices of text comprehension. *Topics in Language Disorders*, 25, 5-20.
- Friend, R. (2000). Teaching summarization as a content area reading strategy. *Journal of Adolescent & Adult Literacy*, 44, 320-330.
- Thiede, K., & Anderson, M.C. (2003). Summarizing can improve metacomprehension accuracy. *Contemporary Educational Psychology*, 28, 129-161.

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Graphic Organizers

Rationale

Graphic organizers are visual displays teachers use to organize information in a manner that makes the information easier to understand and learn. Graphic organizers are effective in enabling students to assimilate new information by organizing it in visual and logical ways (Bromley, Irwin-Devitis, & Modlo, 1995). Flowcharts, semantic maps, t-charts, webs, KWL charts, and Venn diagrams are all examples of graphic organizers.

Using graphic organizers is associated with improved reading comprehension for students (Robinson, Robinson, & Katayama, 1999). In addition, graphic organizers have been effectively applied across other content areas, such as science, math, and social studies (Guastello, Beasley, & Sinatra, 2000; Hanselman, 1996).

Teaching Process

1. Select a graphic organizer that matches the concepts and information students will be reading and learning. For example, information that relates to steps in a process may be displayed in a flow chart; comparing and contrasting information is well suited to a Venn diagram; a branching, hierarchical chart can accurately display ideas supported by specific details.
2. Decide whether you will give students the graphic organizer partially filled in or blank.
3. Distribute the graphic organizer and review it with students. Make sure students are aware of the logic behind the particular visual format being used. Tell students the content they are about to learn can be organized in the format, making it easier to understand, study, and remember.
4. As content is covered, work with students to fill in the graphic organizer. It is useful to have students do this with a partner to create opportunities for oral language development.
5. Once the graphic organizer is completed, demonstrate for students how it can be used as a study aid for recalling important ideas, supporting details, and processes. Be sure to base assessments on visual displays to reinforce for students the value of organizing information and ideas in graphic formats.

Sources

- Bromley, K., Irwin-Devitis, L., & Modlo, M. (1995). *Graphic organizers: Visual strategies for active learning*. New York: Scholastic Professional Books.
- Guastello, E. F., Beasley, T. M., & Sinatra, R. C. (2000). Concept mapping effects on science content comprehension of low-achieving inner-city seventh graders. *Remedial and Special Education, 21*, 356–365.
- Hanselman, C. A. (1996). Using brainstorming webs in the mathematics classroom. *Mathematics Teaching in the Middle School, 1*, 766–770.
- Robinson, D.H., Robinson, S.L., Katayama, A.D. (1999). When words are represented in memory like pictures: Evidence for spatial encoding of study materials. *Contemporary Educational Psychology, 24*, 38-54.

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Learning Log

Rationale

A learning log is a notebook, binder, or some other repository that students maintain in order to record ideas, questions, reactions, and reflections, and to summarize newly learned content. Documenting ideas in a log about the content being read and studied forces students to “put into words” what they know or do not know (Audet, Hichman, & Dobrynina, 1996). This process offers a reflection of understanding that can lead to further study and alternative learning paths (Baker, 2003). It combines writing and reading with content learning (McIntosh & Draper, 2001; Sanders, 1985). Learning logs can become the place for virtually any kind of content-focused writing (Brozo & Simpson, 2007).

Teaching Process

1. Begin by requesting students to use a special notebook or binder for learning log entries. Students should be encouraged to personalize their logs by decorating the cover or in some other way to distinguish it as unique.
2. Share examples of log entries you have written to serve as models for students. Use these examples to explain the process and your expectations for entries.
3. Give students prompts for short content-focused writing and allow them to practice writing entries, discussing strengths and areas needing further development. For example, at the start of class you might ask students to predict what will be covered in the next chapter, or at the conclusion of class have students write a reflection of what was learned in that day’s lesson.

Sample Learning Log Prompt and Entry

Teacher Prompt: In your own words, tell what you have learned about the human brain from today’s reading and activities.

Student Log Entry: I learned that the brain has a right and left half that are called cerebral hemispheres. But really the brain has four main parts—the cerebrum, the pons, the cerebellum, and the medulla oblongata. I also learned that when the arteries in the brain become blocked it can cause strokes. The brain doesn’t get enough oxygen and is damaged.

4. Regularly, if not daily, prompt students to write in their learning logs. Log entries should be dated and include the prompt. A time limit for writing should be set, and students should be allowed to share their entries with a partner or the class for feedback and comments.
5. Consider ways in which learning logs can be evaluated. Since log writing is typically short in length, written within a limited amount of time, and does not require much if any revisionary effort, grading should be holistic. Most teachers give completion grades based on a weekly collection and check of the logs.

Sources

Audet, R.H., Hichman, P., & Dobrynina, G. (1996). Learning logs: A classroom practice for enhancing scientific sense making. *Journal of Research in Science Teaching*, 33, 205-222.

Baker, H.J. (2003). The learning log. *Journal of Information Systems Education*, 14, 11-14.

McIntosh, M.E., & Draper, R.J. (2001). Using learning logs in mathematics: Writing to learn. *Mathematics Teacher*, 94, 554-557.

Sanders, A. (1985). Learning logs: A communication strategy for all subject areas. *Educational Leadership*, 42, 7-10.

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Opinionnaire/Anticipation Guide

Rationale

White and Johnson (2001) discovered that opinionnaires are highly beneficial in promoting deep and meaningful understandings of content area topics by activating and building relevant prior knowledge and building interest in and motivation to learn more about particular topics.

Opinionnaires also promote self-examination, value students' points of view, and provide a vehicle for influencing others with their ideas.

Opinionnaires are developed by generating statements about a topic that force students to take positions and defend them. The emphasis is on students' points of view and not the "correctness" of their opinions. By taking a stand on issues related to the topic of study and engaging in critical discussion about those issues, students not only heighten their expectation of the content to follow but also made many new connections from their opinions and ideas to those of their classmates.

Similar to the opinionnaire, the anticipation guide involves giving students a list of statements about the topic to be studied and asking them to respond to it before reading and learning, and then again after reading and learning. While the opinionnaire works well with ideas that are open to debate and discussion, the anticipation guide strategy is better suited to information that is verifiable. Like opinionnaires, anticipation guides can activate prior knowledge of text topics and help students set purposes for reading and learning (Duffelmeyer & Baum, 1992; Merkley, 1996/97).

Sample Opinionnaire and Anticipation Guide Statements

Opinionnaire Statements

1. Algebra is relevant to me in my everyday life
Agree _____ Disagree _____
Explain:
2. Jack was silly for selling his cow for a sack of "magic" beans.
Agree _____ Disagree _____
Why:

Anticipation Guide Statements

1. There are cases when two negative numbers multiplied together do not yield a positive number.
True _____ False _____
2. Amelia Earhart was the first person to fly across the Atlantic Ocean from the United States to Europe.
Yes _____ No _____

Teaching Process

1. Begin by looking over the content you will be covering related to a particular topic. Decide whether the content lends itself to an open-ended discussion of issues or demands the learning of specific information and concepts.
2. Based on the content, craft statements that elicit either attitudes and beliefs or reactions to their accuracy and decide on a response mode. Statements may require an "agree" or "disagree" a "true" or "false" or a "yes" or "no." Statements do not have to be factually accurate.
3. Before exploring the new content, present students with the statements and response options. These can be given in handout form, written on the board, overhead, or

projected. Tell students to respond individually to the statements and be prepared to explain their responses.

4. Next, put students in pairs and have them compare and discuss their responses to the opinionnaire or anticipation guide statements before reading and learning. Emphasize that there is no “correct” answer at this stage of the lesson and that students should discuss freely.
5. Open the discussion to the whole class so as many different opinions, beliefs, points of view, and hunches about the accuracy of the statements are expressed.
6. Transition from the discussion by telling students that they are about to read and explore the topic (Any information source is amenable to the opinionnaire and anticipation guide strategies, such as a reading, a lecture, a *PowerPoint* presentation, a guest speaker, a lab experiment, etc.). Tell them to pay particular attention to content related to the statements.
7. Stop periodically as content is covered to consider the statements from the opinionnaire or anticipation guide and have students reconsider their pre-lesson responses. Students should revise their original responses to reflect their new learning.
8. If necessary, once the lesson content has been presented, engage students in a discussion around the statements. This gives you an opportunity to clarify any lingering misconceptions about issues, information, and concepts.

Sources

Duffelmeyer, R., & Baum, D. (1992). The extended anticipation guide revisited. *Journal of Reading, 35*, 654-656.

Merkley, D. (1996/97). Modified anticipation guide. *The Reading Teacher, 50*, 365-368.

White, B., & Johnson, T.S. (2001). We really do mean it: Implementing language arts Standard #3 with opinionnaires. *The Clearing House, 74*, 119-123.

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Professor Know-It-All

Rationale

Once coverage of content has been completed, the professor know-it-all strategy can be enacted. The strategy is appropriate after reading a story, a chapter from a novel or textbook, a lecture or presentation, a field trip, a film, or any other information source. Professor know-it-all is an effective review strategy because it positions students as “experts” on topics to inform their peers and be challenged and held accountable by them (Paris & Paris, 2001; Zimmerman, 2002). Other benefits are that students become well versed in the content, learn to ask a variety of questions at different levels of difficulty, and actively participate in the review process (Boekaerts, Pintrich, & Zeidner, 2000; Spratt & Leung, 2000).

Teaching Process

1. Begin by forming groups of three or four students. The students should be given time to review the content just covered. Tell them they will be called on randomly to come to the front of the room and provide “expert” answers to questions from their peers about the content. Also ask the groups to generate 3-5 questions that they think they may be asked about the content and tell them they can ask other experts.
2. To add a level of novelty to the strategy, some teachers keep on hand ties, graduation caps and gowns, lab coats, clip boards, or other symbols of professional expertise for students to don when it is their turn to be know-it-alls.
3. Call a group to the front of the room and asks them to face the class standing shoulder to shoulder. The know-it-alls invite questions from the other groups. Students should ask their prepared questions first, then add others if more information is desired.
4. When the strategy is first employed, demonstrate with the class how the professor know-it-alls should respond to their peers’ questions. Typically, students are asked to huddle after receiving a question, discuss briefly how to answer it, and then have the know-it-all spokesperson give the answer.
5. Remind students asking the questions to think carefully about the answers received and challenge or correct the professor know-it-alls if answers were not correct or need elaboration and amending. Initially, it may be necessary and helpful to model the various types of questions expected from students about the content.
6. After 5 minutes or so, a new group of professor know-it-alls can take their place in front of the class and continue the process of students questioning students.

Sources

- Boekaerts, M., Pintrich, P.R., & Zeidner, M. (2000). *Handbook of self-regulation* (pp. 13-39). San Diego, CA: Academic Press.
- Spratt, M., & Leung, B. (2000). Peer teaching and peer learning revisited. *ELT Journal*, 54, 218-226.
- Zimmerman, B.J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice*, 41, 64-70.
- Paris, S.G., & Paris, A.H. (2001). Classroom applications of research on self-regulated learning. *Educational Psychologist*, 36, 89-101

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Process Guide

Rationale

As students progress through information sources learning about a content area topic, their processing of the information and concepts can be guided. Process guides scaffold students' comprehension within unique formats. They're designed to stimulate students' thinking during or after their reading, listening, or involvement in any content area instruction. Guides also help students focus on important information and ideas, making their reading or listening more efficient (Kintsch, 2005; Kintsch & Kintsch, 2005). Process guides prompt thinking ranging from simple recall to connecting information and ideas to prior experience, applying new knowledge, and problem-solving (Best, Rowe, Ozuru, & McNamara, 2005).

Teaching Process

1. It is important to be prepared by reading the text material thoroughly in order to decide what information and concepts need to be emphasized.
2. You must then determine how much assistance students will need to construct and use meaning at the higher levels of processing. If students already possess a basic understanding of the content, guides can emphasize higher level thinking. If, on the other hand, the content is new to students, then guides might balance text-based and higher-level processing.
3. You should ask: "What format will stimulate students to think about the content in a meaningful and useful fashion, as well as motivate and appeal to them?" Although there are no set procedures for creating process guides, the more imaginative they are, the greater the chance that students will complete them.
4. It is critical that students be prepared to use process guides. You should begin by explaining the guide's features, intent, and benefits. Students should be allowed to meet in small groups and complete the guide in class with teacher assistance. Engage the class in discussion based on their responses to the guide, and use this feedback to provide additional explanation and to make any necessary modifications to the guide.
5. It is important that students be responsible for explaining their responses to the guide. This should be an integral part of the process guide activity.
6. Finally, at every opportunity, reinforce the connection between the mental activity required to complete the guide and expectations of how and what students should be reading and learning.

Sample Process Guide Prompts for a Chapter in a History Textbook

1. In the section under "Afghanistan," you will learn the background of this country and why there is so much unrest there. Now read the first paragraph. **Be prepared to explain the term—Taliban.**

The Taliban is _____

2. The paragraph on page 66 will discuss some events caused by the Taliban. Read the paragraph carefully. **List below some of the events connected with the Taliban:**

The Taliban did these things: _____

3. On page 67 the last paragraph of this section tells us whether the Taliban has been successful in its attempt to control Afghanistan. Read the paragraph and decide. Write your response here.

Sources

- Best, R., Rowe, M., Ozuru, Y., McNamara, D. (2005). Deep-level comprehension of science texts: The role of the reader and the text. *Topics in Language Disorders*, 25, 65-83.
- Kintsch, E. (2005). Comprehension theory as a guide for the design of thoughtful questions. *Topics in Language Disorders*, 25, 51-65.
- Kintsch, W., & Kintsch, E. (2005). Comprehension. In S. Paris & S. Stahl (Eds.), *Current issues on reading comprehension and assessment*. Mahwah, NJ: Erlbaum.

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Questioning the Author (QtA)

Rationale

Students need to be taught that they can, and should, ask questions of authors as they read. The goal of QtA is to teach students to use a questioning process to construct meaning of text, to go beyond the words on the page, and to relate outside experiences to the texts being read (Beck, McKeown, Hamilton, & Kucan, 1997). QtA involves the teacher and the class in a collaborative process of building understanding during reading (Beck & McKeown, 2001). The teacher participates in QtA as a facilitator, guide, initiator, and responder. The teacher strives to elicit readers' thinking while keeping them focused in their discussion (Beck & McKeown, 2002). Teachers should make a poster of the types of questions students are expected to ask. These should be modeled by the teacher, and students should be encouraged to ask their own.

Teaching Process

1. The QtA process begins by providing students the types of questions they are expected to ask about the texts they read. These can be given to students in a handout, projected on the board, or made into a poster and attached to the classroom wall. Students should have access to these questions whenever they're needed.
2. Model the QtA process with students, using a text from class. Demonstrate for students how the QtA questions can be asked in ways that apply directly to the content of the text.
3. Put students in pairs to practice questioning the author together while you monitor, providing additional modeling and clarification. While QtA is an interactive strategy, the goal is to make the questioning process automatic for students so they use it on their own.

Typical Goals and Queries for QtA	
Goal	Query
Initiate discussion	What is the author trying to say? What is the author's message? What is the author talking about?
Focus on author's message	That's what the author says, but what does it mean? Why did the author choose this word?
Link information	How does that connect with what the author already told us? What information has the author added here that connects or fits in with _____?
Identify difficulties with the way the author has presented information or ideas	Does that make sense? Did the author state or explain that clearly? why or why not? What do we need to figure out or find out?
Encourage students to refer to the text Because they have misinterpreted, or to Help them recognize that they have Made an inference	Did the author tell us that? Did the author give us the answer to that?

Sources

- Beck, I.L., & McKeown, M.G. (2001). Inviting students into the pursuit of meaning. *Educational Psychology Review*, 13, 225-241.
- Beck, I.L., & McKeown, M.G. (2002). Questioning the author: Making sense of social studies. *Educational Leadership*, 60, 44-47.
- Beck, I.L., McKeown, M.G., Hamilton, R.L., & Kucan, L. (1997). *Questioning the author: An approach for enhancing student engagement with text*. Newark, DE: International Reading Association.

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RAFT Writing

Rationale

Once students have acquired new content information and concepts they need opportunities to rework, apply, and extend their understandings (Graham, 2005). RAFT writing is uniquely suited to do just that (Santa & Havens, 1995). This form of writing gives students the freedom to project themselves into unique roles and look at content from unique perspectives. From these roles and perspectives, RAFT writing has been used to explain processes, describe a point of view, envision a potential job or assignment, or solve a problem (Brozo & Simpson, 2007). It is the kind of writing that, when crafted appropriately, should be creative *and* informative.

Teaching Process

1. Once particular content or topics have been covered, consider all of the various roles and audiences that would allow students to demonstrate their new understandings from different perspectives. Sometimes teachers conduct a class brainstorm to gather numerous possible perspectives on a topic.
2. Review the RAFT acronym with students, explaining what each letter stands for:
R – Role (role of the writer)
A – Audience (to whom or what the RAFT is being written)
F – Form (the form the writing will take, as in letter, song, etc.)
T – Topic (the subject focus of the writing)
It may be helpful to put the RAFT acronym on a chart in the classroom as a reminder. Also stress to students that RAFT writing allows for creativity but must accurately reflect the content just learned.
3. Give students a RAFTed assignment. RAFTs can be prescribed or left open to students to choose. Initially, it is best to assign students to complete specific RAFTs. As they gain more experience and familiarity with the writing strategy, they can be allowed more freedom. For example, after learning about the water cycle in science, the teacher might assign the following RAFT to students new to the process:
R – water droplet
A – water vapor in clouds
F – travel journal
T – the water cycle
A more experienced group of history students after learning about the battle of the Alamo might be assigned a RAFT that gives them more options, such as:
R – Any observer or participant in the battle
A – Any relevant audience based on format
F – A newspaper article, a letter, a diary entry, dialog, etc.
T – The events of March 6, 1836, the final siege of the Alamo
4. Students may write RAFTs individually or with partners.
5. Once completed, students should share their RAFTs with a partner or the whole class. While students read their RAFTed assignments, other students should listen for accuracy and logic. Listening to students' RAFTs will allow you to evaluate whether students adequately understood the material and whether further teaching or independent study is needed.
6. RAFT writing may be put into student learning logs and graded along with other learning log entries.

Student Examples of RAFT Writing in Math and Science

R – A whole number between 1 and 9

A – A whole number equal to 10 minus their number

F – A letter

T – Why it is important to be a positive role model for the fractions less than one.

Dear Number 7:

It has come to my attention that you are not taking seriously your responsibilities as a role model for the fractions. With this letter I would like to try to convince you of the importance of being a positive role model for the little guys. Some day, with the proper combinations, they too will be whole numbers. It is extremely important for them to understand how to properly carry out the duties of a whole number. For them to learn this, it is imperative for them to have good positive role models to emulate. Without that, our entire numbering system could be in ruins. They must know how to add, subtract, multiply, and divide properly and efficiently. They must know how to respond if ever asked to become a member of a floating point gang. Since they are not yet whole, it is our duty to numberkind to make sure they are brought up properly to the left of the decimal.

Thank you in advance for our support,
The Number 3

R – Chromosome

A – Daughter Chromosomes

F – Letter

T – Cell division during mitosis

Dear Daughter Chromosomes,

You are moving on to better things as part of separate but equal cells. You don't remember me because you are both part of what I was. You see, during Anaphase, I split in two at my centromere. My last minutes were spent with what now accompany you as other daughter chromosomes. Please do not be afraid of the double membrane, called the nuclear envelope, which will soon surround you. It is going to form in order to protect you while you replicate and proceed through what I did. You will eventually split as I did in order to help form another duplicate cell. I write you to wish you luck and share with you my experience so that you may pass it on to others.

Sincerely,
Mr. Chromosome

Sources

- Brozo, W.G., & Simpson, M.L. (2007). *Content literacy for today's adolescents: Honoring diversity and building competence*. Upper Saddle River, NJ: Merrill/Prentice Hall.
- Graham, S. (2005). Writing. In P. Alexander & P. Winne (Eds.), *Handbook of educational psychology*. Mahwah, NJ: Lawrence Erlbaum.
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Reciprocal Teaching

Rationale

Reciprocal teaching is a strategy in which the teacher models and the students use summarizing, questioning, clarifying, and predicting to better understand content text (Palincsar & Brown, 1984). Because the emphasis is on understanding these four processes, students will need many exposures and much practice with each. The benefits of reciprocal teaching are well-documented. The approach has been shown to increase comprehension, overall achievement, and standardized test scores (Alfassi, 1998; Rosenshine & Meister, 1994).

Teaching Process

1. Begin by introducing summarizing. Share several short sections at the beginning of a text taken from the textbook, website, or other source and write a summary statement with the class. Talk out loud about your summary thinking as you work with students. Put the statements on the board for analysis and revision. Next, have students work in groups of four to read a following short section of text and generate a summary statement. Write the various statements on the board and work with the class to select the best one.
2. Follow this approach for each of the remaining comprehension processes that comprise reciprocal thinking: questioning, clarifying, and predicting. For example, state a prediction about the section of text about to be read and write it on the board. After reading the section, direct students' attention to the prediction and discuss how accurate it was and how it helped guide thinking while reading. Then, for the next short section, have students make predictions. Ask questions aloud while reading to focus attention on important information and ideas in the text, then have students ask questions. Finally, demonstrate how you use the text to clarify confusing points or ideas, and then ask students to do the same thing with a new section of text.
3. After modeling the comprehension processes of reciprocal teaching, have students work in groups of four with each one taking responsibility for one of the comprehension processes as either a summarizer, questioner, clarifier, or predictor. Assign the next section of text and tell students to interact while reading, with each student taking the lead to model and guide the others in the comprehension process over which s/he is responsible. A Discussion Guide for Reciprocal Teaching can be used to help students fulfill their roles.
4. Monitor student groups by moving throughout the room. Provide extra support and modeling for groups having difficulty with the reciprocal processes.
5. It takes time to take ownership of the reciprocal teaching process, so it needs to be modeled and supported frequently.

Discussion Guide for Reciprocal Teaching

Reading: _____ Date: _____

Prediction:

Questions:

Clarifications:

Summary Statement:

Was the prediction confirmed: YES NO

Details:

Sources

- Alfassi, M. (1998). Reading for meaning: The efficacy of reciprocal teaching in fostering Reading comprehension in high school students in remedial reading classes. *American Educational Research Journal*, 35, 309-332.
- Palincsar, A.S., & Brown, A. (1984). Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities. *Cognition and Instruction*, 1, 117-175.
- Rosenshine, B., & Meister, C. (1994). Reciprocal teaching: A review of the research. *Review of Educational Research*, 64, 479-530.

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SPAWN Writing

Rationale

Students need regular content-focused writing opportunities in the classroom (Graham & Perrin, 2007; Sorcinelli & Elbow, 1997). Writing to learn in the content areas can be fostered with SPAWN prompts (Martin, Martin, & O'Brien, 1984). SPAWN is an acronym that stands for five categories of writing prompts (*Special Powers, Problem Solving, Alternative Viewpoints, What If?*, and *Next*), which can be crafted in numerous ways to stimulate students' predictive, reflective, and critical thinking about content-area topics.

Teaching Process

1. Begin by targeting the kind of thinking students should be exhibiting. If they are to anticipate the content to be presented or reflect on what has just been learned, then certain prompts work best.
2. Next, select a category of *SPAWN* that best accommodates the kind of thinking about the content you would like students to exhibit. For example, if you want students to regard recently learned material in unique and critical ways, the *Alternative Viewpoints* category prompts writing of this nature. If, on the other hand, you desire students to think in advance about an issue and brainstorm their own resolutions, the *Next* and *Problem Solving* prompts may work best.
3. Then present the *SPAWN* prompt to students. This can be done by simply writing it on the board or projecting it from the overhead or computer. If an anticipatory prompt, students will need to see it and begin writing before the new material is presented. If a reflective prompt, it should be revealed after new content has been covered.
4. Allow students to write their responses within a reasonable period of time. In most cases prompts should be constructed in such a way that adequate responses can be made within 10 minutes. Students should be asked to copy the prompt in their learning logs before writing responses and record the date.
5. Students can share their *SPAWN* responses with a partner or the class to stimulate discussion, heighten anticipation, and check for logic and accuracy.
6. Instead of a thorough assessment of students' *SPAWN* writing, most teachers who use this strategy give simple grades such as points for completing responses.

Examples of SPAWN Prompts for the Topic of World War I

SPAWN prompts can be used to prepare students to learn new information about the topic or reflect on what has been learned. Students should receive one prompt on any given day as the topic of WWI is covered. SPAWN prompts can be written on the board for students to find as they enter the classroom, and to which they respond in their logs before the day's lesson begins. This kind of writing usually calls for students to anticipate what will be learned that day, as in the following prompts:

P - Problem Solving

We have been reading about how most people in the United States were isolationists at the start of World War I. How do you think President Wilson can convince his country to enter the war?

N - Next

We learned yesterday that Germany has decided to use poison gas as part of trench warfare. What do you think the Allies will do next?

On other days, the lesson with a SPAWN prompt that asks students to reflect on or think more critically about what they have just learned:

S - Special Powers

You have the power to change an important event leading up to America's entry into World War I. Describe what it is you changed, why you changed it, and the consequences of the change.

W - What If?

What might have happened if the Turks hadn't entered the war on the side of the Germans?

A - Alternative Viewpoints

Imagine you're the commander of the Lusitania. Write an accurate description in a letter format of your ship's being torpedoed.

Sources

- Graham, S., & Perin, D. (2007). *Writing next: Effective strategies to improve writing of adolescents in middle and high schools*. New York/Washington, DC: Carnegie Corporation/Alliance for Excellent Education. (<http://www.all4ed.org>).
- Martin, C., Martin, M., & O'Brien, D. (1984). Spawning ideas for writing in the content areas. *Reading World, 11*, 11-15.
- Corcinelli, M., & Elbow, P. (1997). *Writing to learn: Strategies for assigning and responding to writing across the disciplines*. San Francisco: Jossey-Bass.

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Split-Page Notetaking

Rationale

Notetaking is an essential skill students must develop in order to be effective readers and learners in the content areas (Broz & Simpson, 2007). The sheer volume of information, vocabulary, and concepts students are expected to learn will be easier if they develop a notetaking system that facilitates meaningful reading and listening (Faber, Morris, & Lieberman, 2000; Lebauer, 2000), leads to an organized record of learning (Titsworth & Kiewra, 2004), and makes review and study efficient (Williams & Eggert, 2002).

Teaching Process

1. Present a section of the material to be covered in the split-page format (See an example). This is done by drawing a straight line from top to bottom of a piece of paper (preferably a sheet of normal sized, lined notebook paper) approximately 2 – 3 inches from the left edge. The page should be split into one-third/two-thirds. In the left column big ideas, key dates, names, etc. should be written and supporting information in the right column. Students should be urged to paraphrase and abbreviate as much as possible (See example).
2. Discuss the advantages of taking notes in this way. Show students how they can prompt recall by bending the sheet or using another sheet of paper so that information in the right or left columns is covered. The uncovered information is then used as prompts for the information in the column that is covered.
3. Next, present another section of the material while students attempt to take split-page notes on their own. In advance, a model of the information in split-page format should be prepared and used to compare with the organization of the content with students' attempts.
4. Continue to guide students in the process of taking split-page notes by modeling the format with notes of the content and eliciting similar styled notes from students. It will take time for students to become comfortable with the format and develop their own individual styles within the split-page structure. This guided practice time is the best way to ensure students learn and take full advantage of the notetaking system.

Split-Page Notes for English	
"The Most Dangerous Game" – Richard Connell February 12, 2007 English 10, 3 rd Block	
Plot defined	--related events that present and resolve a problem/conflict
Rainsford Sanger	--celebrated hunter --forced to become hunted
Setting	--Ship Trap island --Caribbean Sea --jungle environment --General Zaroff's preserve
Plot	--R. falls overboard --R. swims to shore --Zaroff admits to hunting men --Zaroff hunts R.

Sources

- Brozo, W.G., & Simpson, M.L. (2007). *Content literacy for today's adolescents: Honoring diversity and building competence*. Upper Saddle River, NJ: Merrill/Prentice Hall.
- Faber, J.E., Morris, J.D., & Lieberman, M.G. (2000). The effect of note taking on ninth grade students' comprehension. *Reading Psychology, 21*, 257-270.
- Lebauer, R.S. (2000). *Learn to listen: Listen to learn. Academic listening and note-taking* (2nd ed.). New York: Longman.
- Titsworth, B.S., & Kiewra, K.A. (2004). Spoken organizational lecture cues and student note-taking as facilitators of student learning. *Contemporary Educational Psychology, 29*, 234-237.
- William, R.L., & Effert, A. (2002). Note-taking predictors of test performance. *Teaching of Psychology, 29*, 234-237.

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SQLPL – Student Questions for Purposeful Learning

Rationale

All students need to develop the ability to read, listen, and learn with a purpose (Brozo & Simpson, 2007). Purposeful learning is associated with higher levels of engagement and achievement (Ediger & Pavlik, 1999; Schunk & Zimmerman, 1998). When students learn purposefully, they focus and sustain attention (Guthrie & Humenick, 2004). SQLPL promotes purposeful reading and learning by prompting students to ask and answer their own questions about content.

Teaching Process

1. Create an SQLPL lesson by first looking over the material to be read and covered in the day's lesson. A statement is then generated related to the material that would cause students to wonder, challenge, and question. The statement does not have to be factually true as long as it provokes interest and curiosity, as in the examples below of question-provoking statements for various disciplinary topics.

Sample SQLPL Question-Provoking Statements for Disciplinary Topics

English

Topic: Courtroom chapters in *To Kill a Mockingbird*

SQLPL Statement: *Atticus is wasting his time defending Tom.*

Math

Topic: Measuring 3-dimensional objects

SQLPL Statement: *With just a ruler I can tell you the total distance around the Earth.*

History

Topic: Communism in post-WWII Europe

SQLPL Statement: *People are happiest when government takes care of all their needs, and everyone is equal.*

2. Next, present the statement to students. Most often teachers write the statement on the board, though it can also be projected on the overhead or from a computer, put on a handout, and even stated orally for students to record in their notebooks.
3. Students should pair up and, based on the statement, generate 2-3 questions they would like answered. The questions must be related to the statement and should not be purposely farfetched or parodies.
4. When all student pairs have thought of their questions, ask someone from each team to share questions with the whole class. As students ask their questions aloud, write them on the board. Eventually, similar questions will be asked by more than one pair. These should be starred or highlighted in some way.
5. Once all questions have been shared, look over the student generated list and decide whether your own questions need to be added. This may be necessary when students have failed to ask about important information they need to be sure to learn.

6. At this point, students will be ready for the information source so they can seek answers to their questions. Tell them as they read and/or listen to pay attention to information that helps answer questions from the board. They should be especially focused on material related to the questions that were starred. These might be considered class consensus questions.
7. As content is covered, stop periodically and have students discuss with their partners which questions could be answered, then ask for volunteers to share. Students might be required to record the questions from the board and the answers they find in their notebooks for later study.

Sources

- Brozo, W.G., & Simpson, M.L. (2007). *Content literacy for today's adolescents: Honoring diversity and building competence*. Upper Saddle River, NJ: Merrill/Prentice Hall.
- Ediger, A., & Pavlik, C. (1999). *Reading connections: Skills and strategies for purposeful reading*. New York: Oxford University Press.
- Guthrie, J., & Humenick, N. (2004). Motivating students to read: Evidence for classroom Practices that increase reading motivation and achievement. In P. McCardle & V. Chhabra (Eds.), *The voice of evidence in reading research* (329-354). Baltimore, MD: Paul Brookes Publishing.
- Schunk, D.H., & Zimmerman, B.J. (1998). *Self-regulated learning from teaching to self-reflective practice*. New York: Guilford Press.

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Story Chains

Rationale

As with other content-focused writing strategies, the story chain strategy gives students the opportunity to demonstrate their understanding of newly learned material (Bangert-Drowns, Hurley, & Wilkinson, 2004). Story chains are especially useful for promoting application of content area concepts through writing (Saddler, Moran, Graham, & Harris, 2004). The process involves a small group of students writing a story using the information and the concepts they learn. The story chain will include a beginning, middle, and a logical ending or the solution to a problem. By writing out new understandings in a collaborative context, students provide themselves and the teacher a reflection of their developing knowledge (Graham & Perin, 2007).

Teaching Process

1. After a new content is learned, groups of students should be formed. The group size will vary depending upon the nature of the content.
2. Model the story chain process with the class by brainstorming lines or sentences that could be crafted related to content the class has recently learned. You might initiate the process by writing the first line on the board, and then eliciting a second line, a third line, and so on until the story is completed with a total number of lines corresponding to the total number of the group members. Emphasize that the last student to contribute to the story chain must write a logical concluding sentence or solution to a problem. All the group members should then look over the story chain composition and check for accuracy and logic relative to the content just learned.
3. Ask the first student to initiate a story based on information and concepts they acquired in that day's lesson. The next adds a second line. The next, a third line, etc. until the last student writes a concluding line or solves the problem. All group members should be prepared to revise the story based on the last student's input as to whether it was clear or not. Students can be creative and use information and characters from their everyday interests and media.
4. Groups can exchange their story chains with other groups or share them with the entire class.

Story Chain Example from Math

Put students in groups of four. On a sheet of paper, ask the first student to write the opening sentence of a math story chain:

The Green Goblin goes up 5 plus 2 tens buildings.

The student then passes the paper to the student sitting to the right, and that student writes the next sentence in the story:

Spiderman chases him up 4 plus ten of those buildings.

The paper is passed again to the right to the next student who writes the third sentence of the story:

How many more buildings must Spiderman climb to catch The Green Goblin?

The paper is now passed to the fourth student who must solve the problem and write out the answer. The other three group members review the answer for accuracy.

Answer: 1 plus 10 or eleven buildings

This activity allows students to use their writing, reading, and speaking skills while learning important math concepts.

Sources

- Bangert-Drowns, R.L., Hurley, M., & Wilkinson, B. (2004). The effects of school-based writing-to-learn interventions on academic achievement. *Review of Educational Research*, 74, 29-58.
- Graham, S., & Perin, D. (2007). *Writing next: Effective strategies to improve writing of adolescents in middle and high schools*. New York/Washington, DC: Carnegie Corporation/Alliance for Excellent Education. (<http://www.all4ed.org>).
- Saddler, B., Moran, S., Graham, S., & Harris, K.R. (2004). *Preventing writing difficulties: The effects of planning strategy instruction on writing performance of struggling writers*. Mahwah, NJ: Erlbaum.

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Vocabulary Cards

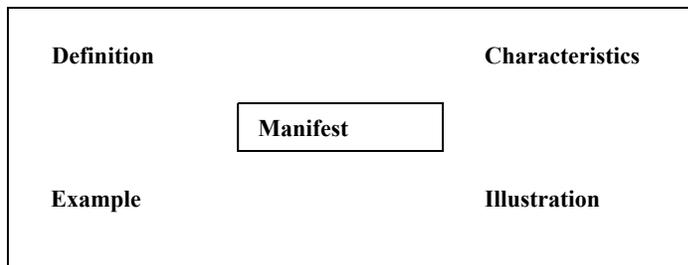
Rationale

Vocabulary knowledge is one of the five essential components of effective reading (RAND Reading Study Group, 2002). The content areas are packed with concepts and technical vocabulary that students must understand if they are to be successful readers and learners (Harmon, Hedrick, & Wood, 2005). A strategy designed to help students learn content-specific terminology is the use of vocabulary cards (Blachowicz & Fisher, 2002). This strategy has been shown to increase depth and breadth of word knowledge, resulting in greater comprehension (Rekrut, 1996).

Teaching Process

1. Demonstrate how to create a vocabulary card with students by writing a key term on the board and drawing a large, rectangular card-like frame around it so that it is in the center of the rectangle.
2. In the corners of the card write a definition, characteristics, examples, and an illustration of the term (Note: You may require students to learn other information or demonstrate other applications with the terms, which would necessitate a modification of the card features described here.)
3. Discuss with students how the card can be reviewed quickly and easily in preparation for tests, quizzes, and other activities with the word.
4. Identify a list of key vocabulary terms from the lesson and have students write them in the center of a 3x5 index card. As material is covered and content is read, guide students as they fill out their cards with the required information.
5. Once cards are completed, allow time for students to review their words individually and with a partner.
6. Quiz students over the content of their cards with questions and tasks that require recall and understanding of all the information on the vocabulary cards.

Example of Vocabulary Card for Social Studies



Sources

- Blachowicz, C.L., & Fisher, P. (2004). *Teaching vocabulary in all classrooms*. Columbus, OH: Merrill.
- Harmon, J.M., Hedrick, W.B., & Wood, K.D. (2005). Research on vocabulary instruction in the content areas: Implications for struggling readers. *Reading and Writing Quarterly*, 21, 261-280.
- RAND Reading Study Group. (2002). *Reading for understanding: Toward an R&D program in reading comprehension*. Santa Monica, CA: RAND.
- Rekrut, M.D. (1996). Effective vocabulary instruction. *High School Journal*, 80, 66-74.

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Vocabulary Self-Awareness

Rationale

Because students bring a range of word understandings to the learning of new topics in the content areas, it is important to assess students' vocabulary knowledge before reading or other tasks involving text (Fisher, Brozo, Frey, & Ivey, 2006). This awareness is valuable for students because it highlights their understanding of what they know, as well as what they still need to learn in order to fully comprehend the reading (Goodman, 2001).

Teaching Process

1. Provide students a list of important words at the beginning of the reading or unit and have students write them in a vocabulary self-assessment chart (See example below).
2. Ask students to complete the chart before the lesson begins by rating each vocabulary word according to their level of familiarity and understanding. A plus sign (+) indicates a high degree of comfort and knowledge, a check mark (√) indicates uncertainty, and a minus sign (-) indicates the word is brand new to them.
3. Also ask students to try to supply a definition and example for each word. For words with check marks or minus signs, students may have to make guesses about definitions and examples.
4. Over the course of the reading or unit, allow time for students to revisit their self-awareness charts to add new information and update their growing knowledge about key vocabulary. The goal is to bring all students to a comfortable level with the unit's important content terminology. Because students continually revisit their vocabulary charts to revise their entries, they have multiple opportunities to practice and extend their growing understanding of the words.

Example of a Vocabulary Self-Awareness Chart in Science

Word	+	√	-	Example	Definition
density					
mass					
volume					
weight					

Sources

Fisher, D., Brozo, W.G., Frey, N., & Ivey, G. (2006). *50 content area strategies for adolescent literacy*. Upper Saddle River, NJ: Merrill/Prentice Hall.

Goodman, L. (2001). A tool for learning: Vocabulary self-awareness. In C. Blanchfield (Ed.), *Creative vocabulary: Strategies for teaching vocabulary in grades K-12*. Fresno, CA: San Joaquin Valley Writing Project.

Word Grid

Rationale

The word grid is an effective visual technique for helping students learn important related terms and concepts from the content areas (Baumann, Kame'enui, & Ash, 2003). It provides students with an organized framework for learning words by analyzing the similarities and differences of key features (Johnson & Pearson, 1984). Learning vocabulary through the use of word grids allows students to contextualize vocabulary knowledge, which increases comprehension of disciplinary texts (Nagy & Scott, 2000).

Teaching Process

1. Put a simple word grid on the wall that will serve as an example for explaining how it is constructed and used. After analyzing a demonstration word grid, students will be much better prepared to create and study from one with actual disciplinary content.
2. Students should be provided a blank word grid with plenty of columns and rows for an upcoming lesson or chapter. A large version of the grid could be put on poster paper and attached to the wall, or one could be projected from an overhead or computer. As critical related terms and defining information are encountered, students should write them into the grid. The teacher can invite students to suggest key terms and features, too. To take full advantage of word grids, they should be co-constructed with students, so as to maximize participation in the word learning process.
3. Once the grid is complete, the teacher should quiz students by asking questions about the words related to their similarities and differences. In this way, students will make a connection between the effort they put into completing and studying the grid, and the positive outcome on word knowledge quizzes.
4. Once several related terms are written along the vertical dimension of the grid, then add features, characteristics, or other defining information in the spaces at the top of the grid moving left to right.
5. The teacher can demonstrate for students how the grid can be used to study key terminology based on critical defining characteristics. Students can be asked to provide features of similarity and difference for pairs of terms, as in "What are two common characteristics of apples and bananas?" or "Give me two ways that oranges and grapes are different?"
6. Students should be allowed time to quiz each other over the content of the grids in preparation for tests and other vocabulary related activity.

Sample Word Grid for "Fruit"				
	Tree-grown	edible skin	Tropical	citrus
apple	Y	Y	N	N
banana	Y	N	Y	N
grape	N	Y	N	N
orange	Y	N	Y	Y

Y = Yes N = No

Sources

- Bauman, J., Kame'enui, E., & Ash, G. (2003). Research on vocabulary instruction: Voltaire redux. In J. Flood, D. Lapp, J. Squire, & J. Jensen (Eds.), *Handbook of research on teaching the English language arts* (2nd ed., pp. 752-785). Mahwah, NJ: Erlbaum.
- Johnson, D., & Pearson, P.D. (1984). *Teaching reading vocabulary*. New York: Holt, Rinehart & Winston.
- Nagy, W., & Scott, J. (2000). Vocabulary processes. In M. Kamil, P. Mosenthal, P.D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 269-284). Mahwah, NJ: Erlbaum.

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