

AFTER READING

STRATEGY: **Turn and Talk**FOCUS: **Reading as Thinking**WHEN TO USE: Before Reading **During Reading** After Reading

DESCRIPTION:

One of the simplest, briefest, yet most powerful strategies in your reading toolkit is the short minute or two when pairs of students turn and talk about a question or issue before them. Also known as "think-pair-share," this is a fundamental activity that skillful teachers might use *five or eight times in a class period* to keep kids active and engaged—and to access their thinking. Any time the teacher reads something aloud, introduces a concept, or poses a question, she can immediately ask everyone in the class to turn to someone next to them and talk over the matter being considered. A minute or two is plenty of time for this. Then the teacher solicits responses from a number of students in order to feed the ideas they've exchanged into the work of the class. If this is a brainstorming session or creation of a list of possibilities or options, then all or most of the class may contribute their answers.

Why Use It?

Many teachers find it's hard to get some students to participate in class. A few eager beavers raise their hands all the time, and everyone else tries to pretend they're out to lunch (or actually *are*). But turn and talk enables students to stop and think about a question or a challenging problem before you ask them to share with the class. It draws on social interaction to advance learning, something the Common Core explicitly recognizes in the speaking and listening standards. Turn and talk prevents students from drifting and losing focus when you need to present information, by presenting a sociable interlude during which the students digest and reflect on the ideas. And it increases the number of students who participate in class because it helps everyone gather their thoughts before raising their hands (or failing to). It ensures that all kids get to process ideas with their own words, rather than just a few students reciting an answer.

In fact, consistent pair shares shift the dynamic significantly in the classroom. Traditionally, a single student responds while others, we fear, half listen. With turn and talk, everyone responds, and then when the teacher does ask to hear some of the answers, a variety of versions or perspectives

get aired. If you want the class to generate a list of some kind—animals in a particular kind of habitat, possible causes for a historical event, practical applications for a mathematical concept—it's a great way to get a long list going. And you'll see very quickly how much the students already know about the topic, along with what they haven't yet learned.

How Does It Work?

1 How many times have we said this? Model it first. Get a student volunteer to stand beside you (choose a student who knows how to have a conversation, or whisper some coaching before you start). Have the class suggest a school-appropriate topic for a quick conversation (something in the news, a school issue), then turn to your partner and chat for a minute or two. Then ask kids what they noticed the two of you doing, while you make a list. Kids should have noticed behaviors like:

- * faced each other
- * made eye contact
- * took turns
- * asked each other questions
- * stayed focused on the topic
- * listened to each other
- * built on each others' comments
- * acted friendly

If students fail to notice or mention any key elements, by all means put them on the list yourself. This co-created chart now becomes the kids' guide for doing a turn and talk.

2 Next, have kids practice turning and talking about a short article, an image, or a poem. As always, you are using course-related material, not wasting time with irrelevant content. But before they share, you must make sure each student has a single partner. Left to their own devices, some kids will have one partner, others will have three, and some will have none. For turn and talks to work, each student must have one partner, know who it is, and be sitting right next to them from the beginning of class. You do *not* want kids scrambling for a partner after you've called for a pair share. (If numbers are uneven, you can allow a single group of three or be the leftover's partner yourself.)

When kids are set, your instructions will be very simple, along the lines of "Turn to your partner and take turns sharing what you think about our topic [article, poem]." Partners should rotate frequently (daily or weekly) so that everyone works with everyone else in the room, building more friendliness and support through the year.

3 As you use the strategy, fine-tune it with further training in ways to get conversation started, turn-taking, listening, and reporting out. Google “turn and talk anchor charts” and you’ll find a large collection of handy lists for guiding effective student conversations. However, while these can inspire you, it’s best to use turn and talk itself to have your students generate their own list of good conversational practices. Then be sure to refer to it frequently, and don’t let it just fade into the woodwork. Just because we’re dealing with older students, we shouldn’t assume they’ve already learned the art of good conversation.

4 Use turn and talk a lot—as we said, several times per class period should be the norm. Use it to establish a rhythm between presenting, reflecting, and responding during a class. We’ve watched science teachers invite students to hypothesize about why an unexpected result occurred in an experiment. In Kettering, Ohio, art teacher Meghan Dillon uses turn and talk in a variety of ways, particularly at what she likes to call “checkpoints.” She may show images of several paintings and ask students to take a moment to talk over and compare the two. Or she may have her students read a one-page biography of an artist like Keith Haring (available at www.haring.com) and then talk over and pick out a key word or phrase that reveals something important about him. Or she’ll stop the class in the midst of a project and have pairs look at each other’s work for a minute, then trade some feedback. We’ve seen math teachers put students to work in pairs to solve a problem or identify a particularly significant number. And you needn’t worry that you’re overusing it—students never seem to tire of the strategy, perhaps because they’re just happy to get a moment to talk. But do be sure to elicit some responses from the whole class after the pairs have had their discussion. It’s important for students to have their thinking put to good use.

5 Monitoring the conversations is always a helpful practice—both to see how students are using the process, and to get an advance sense of their thinking. This can enable you to draw out some of the shy students during later sharing—“John, I heard you explaining a great idea about . . . Could you share that with the whole class?”

VARIATION: Meghan Dillon wants to be sure students use turn and talk well and efficiently, so she starts the kids with *turning and writing* at the beginning of the year, using Post-it notes for the responses (see pages 118–120). Using a photocopier, she photocopies smiley faces plus a star onto two-inch square sticky notes by running sheets filled with them through a copy machine. The smileys are for jotting two things a student likes about his or her partner’s piece and the star is for one suggested improvement (nice that the symbol for improvement is something positive and not a frown or an X). Meghan first models how to use these to give quick feedback to an adult friend

or colleague's work. Then students swap sketches they are working on, fill in their notes, and place them on the back of their partner's sketch. Meghan finds that after just two or three rounds of this, over several weeks, the students can switch to meaningful, quick oral turn and talk moments without any trouble.

TO LEARN MORE

Harvey, Stephanie, and Harvey Daniels. 2009. *Comprehension and Collaboration: Inquiry Circles in Action*. Portsmouth, NH: Heinemann, 126.

Simon, Cathy Allen. 2013. "Using the Think-Pair-Share Technique." IRA/NCTE ReadWriteThink. www.readwritethink.org/professional-development/strategy-guides/using-think-pair-share-30626.html#research-basis.

STRATEGY: **Tweet the Text**

FOCUS: **Reading and Summarizing**

WHEN TO USE: Before Reading During Reading **After Reading**

DESCRIPTION:

After they have read a passage, textbook section, or article, students work with a partner to create 140-character summaries, which are then shared and refined with the whole group. Sound goofy? Here's one for Manifest Destiny:

In 1840, God smiled as miners, farmers, railroads, and telegraphs drove the native peoples ever further west toward extinction.

And one for trigonometry:

Sine measures an angle. In a right triangle with that angle it = opposite side divided by hypotenuse. Its graph shows curve of a sound wave.

If cell phones are available and legal in school, kids can type their summaries on real phones. If not, we use laptops or just pretend on paper.

Why Use It?

The kids are texting anyway, so why don't we co-opt their attraction to this technology and harness it to the curriculum? And very seriously, synthesizing a text, putting it into your own words, and boiling down the ideas to a compact but accurate statement are among the most crucial of all reading skills. As the Common Core Anchor Standards (National Governors Association 2010, 10) put it, kids must be able to "determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas." If we can make this important cognitive process fun, tactile, and interactive, let's go for it.

How Does It Work?

- 1 Have students read a selection of subject-matter text. Choose a chunk of material that's reasonably summarizable. The Periodic Table, maybe not. One- to three-page nonfiction articles work well for this; historical narratives, biography, or fiction can be longer. If the content density is super-high, as in a math or science textbook, use a shorter passage.

2 When kids are done reading, put them in pairs and have them get out their cell phones or jump on a laptop. (Worst case, paper.) Have them work together to create a 140-character summary of the text they have just read. This discussing out loud with a partner and co-composing a common tweet is very important—it forces students to externalize their thinking, compare it with some else's, negotiate meaning, and shape the most important ideas into a very tight space. Encourage them to hit 140 characters right on the nose for the fun and discipline of it. Doing it directly on Twitter (if that's permitted in your school) makes it easy to count the characters, or just use <http://www.twitter-character-counter.com>. And don't forget: spaces are included.

3 Gather the class and have many pairs share their tweets aloud, or onscreen if you can project them. Stop and talk about the different ways people found to express the underlying big ideas. As a final step, collaboratively compose the "uber tweet," the very best you can do inside the limits.

VARIATIONS: Obvious adaptations of this strategy would be to "email the text" or "post on our Edmodo page," with all sorts of possible constraints and rules. Each of these is just an example of putting a lesson we'd do anyway—like discussing an important reading—into a sociable channel that kids will enjoy, share, and remember.

TO LEARN MORE

Daniels, Harvey, and Nancy Steineke. 2013. *Texts and Lessons for Teaching Literature*. Portsmouth, NH: Heinemann.

Miller, Samantha. 2013. "50 Ways to Use Twitter in the Classroom." TeachHub.com www.teachhub.com/50-ways-use-twitter-classroom.

STRATEGY: **Exit Slips and Admit Slips**

FOCUS: **Reading and Summarizing**

WHEN TO USE: Before Reading During Reading **After Reading**

DESCRIPTION:

At the end of class, students write on index cards or slips of paper stating one important idea they learned, a question they have, a prediction about what will come next, or a thought about a character, event, or other element in the reading. Alternatively, have students turn in such a response at the start of the next class—or allow kids three minutes to jot one when they arrive. Then use these notes right away to start class conversations, having kids read theirs aloud or turn to a partner and share. Later, without even grading these, you can skim through them to observe what kids do or don't get, what they're noticing in their reading, and what ideas may need to be clarified or reinforced.

Why Use It?

Kids in middle and high schools rush from one class to the next, from math to PE to social studies. In all but a few innovative programs, the day splinters into forty-five- or fifty-five-minute pieces, followed by sports and afterschool activities, plus the socializing in between that matters more than anything else for many teenagers. This brief writing activity helps connect one day's learning to the next, and last night's reading to this morning's discussion, across all the distractions, activities, and competing schoolwork in between. It helps kids focus as they enter our classrooms, or solidify learning just before they leave. And it provides a snapshot of where the kids are, so we and they aren't taken by surprise at test time or when studying the next topic that depends on an understanding of what went before.

How Does It Work?

① Yes, we sound like the education version of *Groundhog Day*, but we'll say it again: modeling is the place to start. This activity invites students to reflect on what they've read or learned from a class activity, and many students are not accustomed to this mental work. They may need help putting into words what seemed most important in the reading, what they are confused about, or why some problem was difficult. They may need reassurance that writing about challenges will enable you to help them rather than just expose them to judgments of failure. They may need to hear from

you that it's OK to ask a question or request that something be explained again. So yes, once again, do the modeling that will show students the possibilities for using the strategy and how it can help their learning. We can't just take their understanding of this for granted.

- 2 For two or three minutes at the end of class (or the start of the next one), students jot responses to their reading on note cards. Base directions on what you want to learn about their thinking. Keep it simple—"one thing I learned and one question I have," for example. If you've taught particular thinking strategies—connecting, summarizing, or inferring—you can ask students to use them.
- 3 To get kids actively using the admit slips, say, "Now pass your card back three people in your row [circle, table, etc.]. When you receive someone else's card, read it, then turn it over and write a response, rejoinder, or question of the back. Make it thoughtful and interesting for us all to consider." Then invite volunteers (or call on individuals) to first read the front side, and then their own written response. Invite all class members to comment or question. The original author can reveal herself if she wishes and defend her initial comments—or discuss how her unforeseen partner has elaborated or changed her thinking. And you can keep tying these reactions back to the text you assigned in the first place.
- 4 Don't let the cards become a grading burden or you'll just tire of assigning them. Don't worry about spelling and grammar—these aren't senior theses, but just quick notes to you and the class. Instead, glance over them for a quick view of how students are doing and whether you can move on or need to further explain a concept. If you absolutely need to give credit, use quick check marks on the cards and in your gradebook.

VARIATION: If there is a controversial issue at the heart of the text kids are responding to, collect the cards first. Flip through them quickly, standing right in front of the class, and scan for a couple of provocative/unique/incendiary cards. You know you can do this in one minute or less. Read one bomb-throwing card out loud (without identifying the author) to spark class discussion about various views of the reading. And another . . .

TO LEARN MORE

Daniels, Harvey, Steven Zemelman, and Nancy Steineke. 2007. *Content-Area Writing: Every Teacher's Guide*. Portsmouth, NH: Heinemann, 34–44.

Short, Kathy, Jerome Harste, and Carolyn Burke. 1996. *Creating Classrooms for Authors and Inquirers* (2nd ed.). Portsmouth, NH: Heinemann, 466–471.

EXAMPLES

E 125058	THIS TICKET IS GOOD FOR	E 125058
	The advantage an indicator has over a meter is it changes color, to show the difference the disadvantage is you don't know the exact number. Indicators are used in drug tests almost every day.	
	NAME <u>Melissa J. Jansen</u> DATE <u>9/28</u>	

Admit Slip—Indicators vs. Meters

I would have voted "^{Not} ~~Guilty~~ Guilty" because the law that Congress passed was purposely against Johnson because he was favoring the south. The rule was unconstitutional to the president. The republicans wanted to have one person from there group as president ~~so~~ so they could punished the south. Most of the Congress was part of the Radical Republicans so they really got anything they wanted. In a big way they were criminal.

Exit Slip—Impeachment of Andrew Johnson

STRATEGY: Word Wall

FOCUS: Building Academic Vocabulary

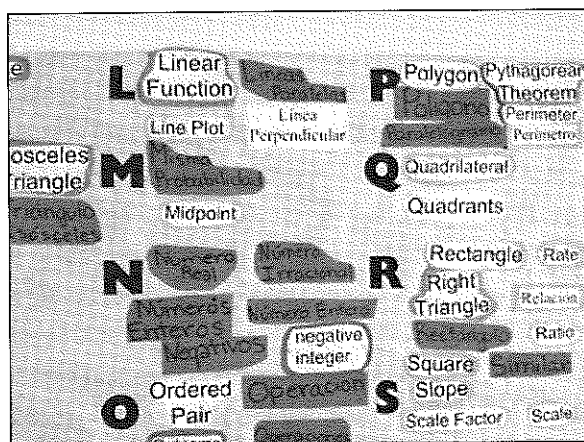
WHEN TO USE: Before Reading During Reading After Reading

DESCRIPTION:

A word wall is a display of key vocabulary items for a unit or topic, written on individual cards or newsprint strips, and kept on—you guessed it—the classroom wall. For a math class on geometry, it might look like this:



Algebra word walls provided by Sarah Hagen, used by permission.



Elementary teachers have used word walls in their classrooms for years, but we rarely see them implemented in middle and high school. That's too bad, because vocabulary so often embodies *concepts*, and word walls are a way to immerse kids in the big ideas of the subject. To make word walls especially powerful, teachers actively involve students in creating them and in regularly using the information displayed to help them read, write, and talk about the subject matter. Word walls reward constant maintenance, so teachers return to them again and again, helping kids to add new terms and make connections between existing items.

Math

Why Use It?

Remember those long lists of words you studied in preparation for the SAT or ACT exam, once upon a time? How many do you remember and use now? Vocabulary is not learned effectively by memorizing lists and definitions, but by seeing words in use, in their customary contexts, and by engaging actively with them and with the ideas behind them. In return, good vocabulary study supports and deepens students' thinking about the material they are reading. So don't think that word walls are just for first-grade teachers. Reading experts remind us that if a student has difficulty with more than 5 to 10 percent of the words in a piece of reading, she will not be able to comprehend it effectively. But an actively used, effective word wall enables students to engage with language, and to refer back to their thinking about relevant words in one easily seen place, where they can put the pieces of their knowledge together and solidify it. In many subjects, the terms are essential to understanding the concepts and processes that are studied. As high school biology teacher Marnie Ware argues, "Vocabulary is at the core of my field."

So a word wall can provide crucial support for students' comprehension if they engage with key vocabulary terms before reading. And, if students have some time to read in class, stopping at some point in the middle can help to see if there are words tripping them up that need to be added to the word wall. Alternatively, reviewing vocabulary after reading can add still more to the wall, or result in rearrangements as students reflect on what they've learned.

How Does It Work?

- 1 Introduce the idea of a word wall and put up the first few items yourself. Choose these from the most crucial vocabulary in an upcoming unit. Seek a balance of Tier 3 technical terms and those powerful Tier 2 words that cross disciplines and mark an educated person. A useful, effective word wall should include definitions as well as information about where and when items are used. Model how you can write this information on the back of cards or strips, so that kids can walk to the front of the room, flip them over, and remind themselves of the definitions—and actively engage with the word. The word cards can be color-coded to reflect various aspects of the subject.
- 2 As the unit unfolds, use the word wall to highlight key concepts. Introduce terms, explain and discuss their meaning, illustrate them through whole-class and small-group activities, have students use them in a variety of ways, and regularly pause to have kids build the word wall step by step, themselves. They can fill out the cards or strips, providing definitions on the back and then leading

discussions in which their classmates try to figure out as much as possible about given words. They can be asked to group, sequence, and rearrange the words according to various categories or ways of viewing the topic under study. In fields like science and math, this merges with the process of exploring and explaining the content of the course itself—so it need not become an add-on activity within a crowded curriculum.

3 Maintain the collection as it grows. Word walls should accumulate gradually, as students engage in a unit of study. Introduce just a few words at a time, so kids can internalize them and spend enough time on them to make them a permanent part of their knowledge. Then, various terms can be returned to and discussed repeatedly, so the word wall is put to regular use, rather than being posted and forgotten.

VARIATION: When Marnie Ware, biology teacher at Prosser High School in Chicago, introduces a new concept like “homologous structures”—which is also a vocabulary term, of course—she starts with an activity. In one instance, she first brought out an actual set of bones of a human arm that the school happened to possess. Then, pairs of students received sets of cut-out drawings to be pieced together—each set composed of the bones of either a cat’s leg, a horse’s leg, or a whale fin. Students raced to tape their bone drawings together in the proper order to complete the whole leg (or fin). They could see that while the bones were of different sizes and shapes, they corresponded to the same parts of a limb for each animal—thus illustrating the concept, “homologous structures.”

Next, Marnie turned students’ attention to the word wall. Along with a number of related terms on orange squares were three new ones:

- * homologous structure
- * analogous structure
- * vestigial structure

And across from all the terms were squares with definitions written on them, arranged in random order. Now the job for the students was to identify or guess which definitions went with the three new terms. *Homologous* was the easiest, since they’d just completed the activity and pronounced the word together. The next two were from material the students had not yet studied, so now they were guessing, though with some hints deriving from the day’s activity. The kids struggled with this, but didn’t grow discouraged. Marnie discussed their guesses as they were offered, helped them with the various meanings, and then promised to return to the terms the next day. They were now primed for the new lesson and more vocabulary learning, and more words and definitions would be added to the word wall on the following days.

Biology

Predictable Problem

In many middle and high schools, teachers don't necessarily have their own classroom where they can leave materials, artifacts, or wall charts on display. So how can you keep a word wall if you move from room to room over the course of the day? A few itinerant teachers we know have a cart loaded with books and materials that they haul around the building—not an ideal way to work, but it does build stamina and provide exercise. We cannot let limited physical space confine our teaching strategies. A traveling word wall can become one more item to balance on the cart, constructed of large posterboard pieces taped together and folded up for easier travel. The digital solution is of course easier—keep your word wall on a flash drive or on your school's server, so you can project and work with it "live," no matter what classroom you wind up in.

TO LEARN MORE

Allen, Janet. 2007. *Inside Words: Tools for Teaching Academic Vocabulary, Grades 4–12*. York, ME: Stenhouse.

Blachowicz, Camille, and Peter Fisher. 2009. *Teaching Vocabulary in All Classrooms* (4th ed.). Upper Saddle River, NJ: Pearson.

Cronsberry, Jennifer. 2004. *Word Walls: A Support for Literacy in Secondary School*. Toronto: Curriculum Services Canada.

Harmon, Janis M., et al. 2009. "Interactive Word Walls: More Than Just Reading the Writing on the Walls." *Journal of Adolescent and Adult Literacy* 52(5).

STRATEGY: **Word Meaning Graphic Organizer**

FOCUS: **Building Academic Vocabulary**

WHEN TO USE: Before Reading **During Reading** After Reading

DESCRIPTION:

There are dozens of graphic organizers for vocabulary study, but this one clearly shows how to embed vocabulary learning into the wider process of reading. This particular organizer is designed to help students think in more depth about a single important vocabulary word. It asks students to view the word in a variety of ways, to notice when and how it's being used, and why it's important to know. Students complete the organizer in small groups, returning to their groups later on to add more information as they read and learn. Groups can compare versions of the same word. Or you can have various groups each tackle different words, and when the organizers are completed, post all of them. Groups can report orally or organize a gallery walk for classmates to circulate and review all of the organizers. With the right selection of vocabulary items, this can become an active process for reviewing an entire unit of study.

Why Use It?

Words gain their meaning in connection with other words, and through the ideas, concepts, and information that comprise a field of study. Thus, good vocabulary study supports and deepens students' thinking about the material they are reading. An effective vocabulary graphic organizer allows students to gather their contextualized experiences of a word in one place, where they can put the pieces of their knowledge together, actively process it, and solidify it.

How Does It Work?

1 Demonstrate how you create an organizer yourself. Have kids read a short chunk of text that includes the word and then invite them to help you fill in several of the boxes. To keep this from becoming simply the performance of a couple of students who already know the words, have everyone turn and talk in pairs (see the turn and talk strategy on pages 134–137) briefly before each step. Then you can call on several pairs to compare possibilities for filling in a particular box.

- 2 Put students in small groups to try it out. The more complex graphic organizers work best as whole-class or small-group activities, rather than individually. As Janet Allen explains, "If you truly don't know a word, it is virtually impossible to complete the form. If you do know the word well enough to complete the form, you don't need to complete it. Students learn extended meanings of the target word here by virtue of their *joint* knowledge" (Allen, 1999, 57).
- 3 As students read, they meet periodically but briefly in their groups to discuss which aspects of the word they've learned about, and then decide together how to fill in the boxes on the sheet. Explain that they shouldn't expect to fill in every box right away; the idea is to discover more about the word as they go along. The group meetings could take place for a couple of minutes at the start of each class period over several days as you work through the reading involved in a particular unit. Thus, these meetings can serve as a good, socially oriented activity for refocusing students on your subject at the beginning of each period.
- 4 The groups can have a number of organizer sheets going for the key words in a study unit, and add various entries as they encounter information that expands their understanding of each word. Alternatively, assign various groups to focus on particular words, to be shared with the rest of the class at some point during the unit.
- 5 Put the organizers to work in the process of students' learning. Otherwise they can easily become just another set of worksheets to be completed and forgotten. We've mentioned a gallery walk as one structure for students to share and review the vocabulary terms. Another can be for groups to exchange and place sticky-note comments (respectful, please!) on each other's completed organizers. Or students can pair up to discuss and compare organizers from their groups. This kind of activity is especially useful as an effective review process at the end of a unit.

TO LEARN MORE

Allen, Janet. 1999. *Words, Words, Words*. York, ME: Stenhouse, 57.

Blachowicz, Camille, and Peter Fisher. 1996. *Teaching Vocabulary in All Classrooms*. Upper Saddle River, NJ: Prentice-Hall.

Target Word

Exothermic

Topic where word is found:

Whether an overall reaction is exothermic or endothermic depends on the quantity of energy added (endothermic) compared to the amount of energy given off (exothermic) in the bond-making steps.

Parts of the word we recognize:

Thermic—like thermal underwear.
So it's about being warm?

Examples:

Gasoline burning in a car engine
Explosions

So the word means:

If heat is released overall when the steps of a chemical reaction are all added up

Why it's important:

If you are trying to combine two chemicals, you need to know whether to heat them or provide cooling because it's going to give off heat.

Where is the word used?

Our chemistry book—
chapters on energy. Web
article on making your own
hotpack for muscle injuries.
Chemistry sites on the web.

**How it connects
with other words:**

Types of chemical
reactions—maybe
combination reactions are
often exothermic ones.

STRATEGY: **Vocabulary Tree**

FOCUS: **Building Academic Vocabulary**

WHEN TO USE: **Before Reading During Reading After Reading**

DESCRIPTION:

This graphic, shaped like a free-form—if not very aesthetically pleasing—tree, focuses on linking groups of related words or ideas, and allows for plenty of flexibility in the number and placement of branches (and roots, if the student so desires) to illustrate the relationships among the various key words in a unit, book, or study project. The trunk carries the core word or concept, and the branches show connected elements, along with examples. The graphic is something to be added to as students read and learn more about the words' usages, connections, and roles in carrying the meaning of the topic being studied.

Why Use It?

Each of our vocabulary graphics focuses on a different aspect of words and their relationships. The previous one takes a single word and asks students to go deeper with it. This one helps students think about relationships among a set of words from their reading. So often, the list of vocabulary terms at the end of a textbook chapter simply arranges them in alphabetical order, which has very little connection with the concepts being studied, or how they are related. This not only takes away from the overall conceptual understanding of the topic, but also makes learning more difficult because it becomes an exercise in memorizing a large number of discrete items instead of building a single integrated picture. When students create their own vocabulary tree, they are led to think about how the concepts behind the words are related to each other, and they can develop a much stronger, fuller understanding of the material they are studying. Further, the graphic enables students to go beyond simply a sentence that defines a word to understand the role of the word in conveying ideas and information about the topic they are studying.

How Does It Work?

- 1 Students should begin with four or five of the important words in the reading they are doing. You can provide these, especially if this is the first time the students are using this organizer. Alternatively, you can supply a longer list from which the students choose a smaller number. Or if

they're really getting comfortable with vocabulary work, you can ask them to identify important words by themselves as they read. Four or five words are plenty to start with—the aim is to explore them in depth and pick up additional vocabulary along the way. And learners can really internalize only a small number of new words at one time.

2 Now put kids to work trying out the trees. Have each student draw a rough version of a tree with a trunk and branches, and begin arranging the words to represent how he or she thinks they are related. More important or general words go along the trunk and subcategories get placed on branches that show their connection to the more important words. Words can be rearranged and more added as students read and learn more about the topic.

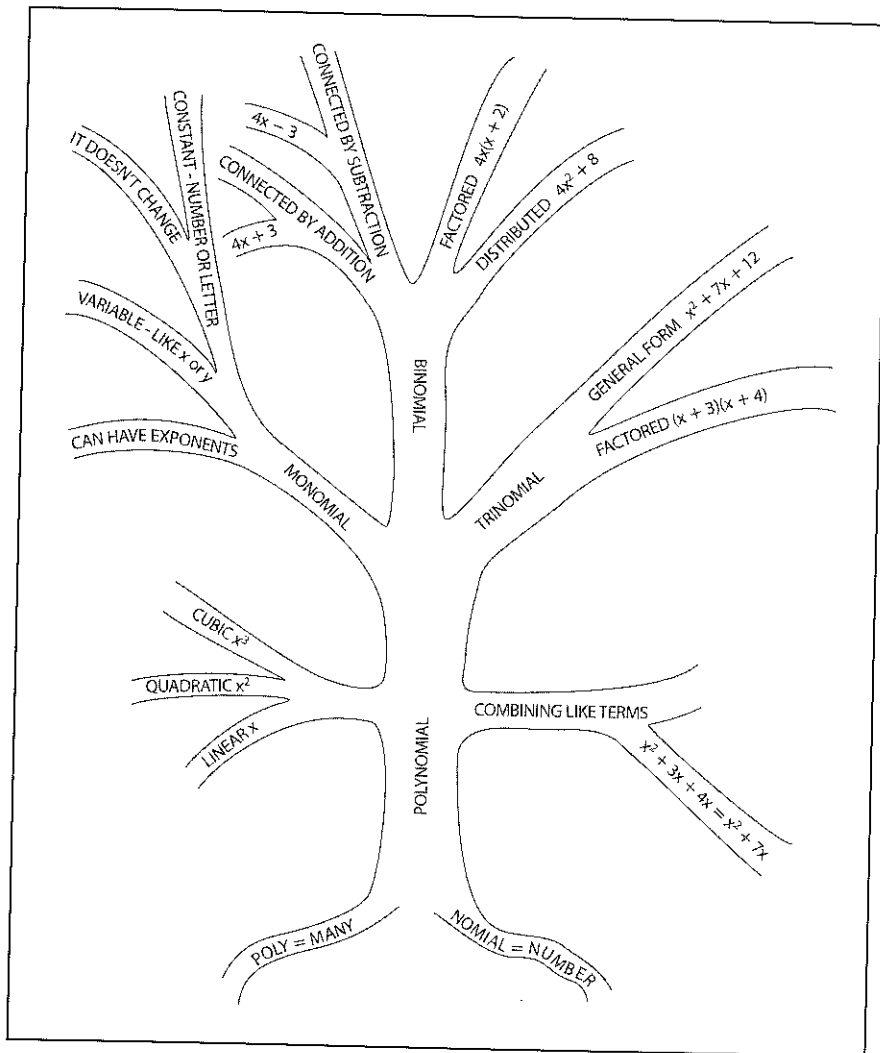
An alternative, particularly if there is a lot of new vocabulary to deal with, is for students to place each key word on a separate sheet of paper with a tree on it and the word near the bottom of the trunk. Then as students read, they are to add related words, information, and/or examples on the branches, one item to each branch. The branches may have branches of their own, of course. A third option is to have the whole class or small groups work together on vocabulary trees that are drawn on newsprint, hung on the walls, and elaborated as a study project proceeds.

3 Students should be asked to return to the vocabulary trees periodically in the course of a unit, to continue adding to them or altering them to reflect their improved understanding of the topic. Pairs can compare their trees and discuss why they've made various decisions on how to show word relationships. And as students read more widely beyond the textbook, they can return to the tree diagrams to add notes on the ways they see the words used in other materials they encounter.

TO LEARN MORE

Kirby, Dan, and Carol Kuykendall. 1991. *Mind Matters: Teaching for Thinking*. Portsmouth, NH: Heinemann.

EXAMPLE



Vocabulary Tree

STRATEGY: **List-Group-Label**

FOCUS: **Building Academic Vocabulary**

WHEN TO USE: Before Reading **During Reading** After Reading

DESCRIPTION:

The name tells the story. The class develops—or the teacher may provide—a list of twenty to twenty-five key vocabulary words from the assigned reading. In small groups, students arrange the words in clusters based on something the words have in common. In many cases, particularly if you use the activity in the midst of a unit rather than at the end, the students are unlikely to know the exact meanings of many of the words, but they should be encouraged to share their knowledge and their guesses in their groups. A cluster must contain at least three words in order to count, but words can be used more than once. The students then decide on labels for each cluster.

Why Use It?

Effective vocabulary learning requires that students work with words, think about them, and see them in a context. Like the vocabulary tree, this is about finding relationships among words rather than defining them in isolation. The thinking that is involved is somewhat different, however, because the students are creating groupings and categories for the words, rather than linear relationships. Working together, students pool their knowledge and learn from one another. Even though a student may not yet know everything he needs to about a particular word, the clusterings help the process of making sense of it, connect it with other words he knows more fully, and suggest where he might look to find out more about it.

How Does It Work?

- 1 At a midpoint in their reading, or after students have completed a reading selection, organize them into small groups for this vocabulary work. Balance membership in the groups, so each includes students of varying achievement levels. That way, the students can help one another, and no one group is left completely at sea. Provide a group of vocabulary items for kids to work with.

A list for a set of U.S. history readings on African American soldiers in the Civil War might look like this, including some of the military terms and Latinate words favored by mid-nineteenth-century writers and leaders:

chattel	retroactive	contrabands	auspices
edifice	frock coats	philanthropic	quartermaster
escalating	serfdom	avocation	commissary
permeated	fatigue duty	remuneration	mustered out
reprisal	sagacity	amenability	parapet

If many of these terms are unfamiliar to the students, provide time for the groups to look them up or determine them from context—after all, if the group knows nothing about the words, the activity can't really go forward.

2 Now, working in small groups, students can pool their background knowledge and powers of inference to place the words in clusters, however they think the words might fit together. When all the words are arranged, the students decide on a label for each cluster.

3 After the work is finished, have students look back through the reading to see if their increased understanding of the words helps them comprehend the text better—and vice versa. To make this go efficiently, you can identify short passages beforehand that contain various of the vocabulary terms and assign each group one passage to read and discuss. Then have the groups report and explain one or more connections that they see between the words in a particular cluster and the passage that they've just reread.

VARIATION: Have the groups record their lists on newsprint, so they can be hung around the room for ongoing reference. Then kids can watch for the words as they read further. They can also add more words to the lists as they continue to read and learn about the topic.

TO LEARN MORE

Blachowicz, Camille, and Peter Fisher. 2009. *Teaching Vocabulary in All Classrooms*. New York: Prentice-Hall.

"List-Group-Label." 2013. "All About Adolescent Literacy." www.adlit.org/strategies/19780/.

STRATEGY: **Clustering and Mapping**

FOCUS: **Visualizing Meaning**

WHEN TO USE: **Before Reading** During Reading **After Reading**

DESCRIPTION:

The idea of graphically displaying key concepts has many variants: trees, of course, but Venn diagrams, timelines, concept maps, and semantic maps are also all in the family. You're probably familiar with most or all of these, and information about them, not to mention the templates and lesson plans that abound. Here, we'd like to draw attention to a couple of valuable graphic organizers that are used less often.

Gabriele Rico (1983) first popularized clustering as an aid to students' writing, describing it as "a nonlinear brainstorming process akin to free association." *Clustering* is a kind of brainstorming that links ideas in a two-dimensional map, with lines to show connections based on students' mental associations as they think about a topic, adding an important visual aspect to the process. *Mind mapping* is similar except that it is a more structured visual arrangement of ideas after students have completed their reading.

The teacher may provide a template or have students create their own, individually or in small groups. Both clustering and mapping can be used either for individual students' work or recorded on a whiteboard or document camera for a whole class.

Why Use It?

Like brainstorming, clustering helps students discover things they already know—or think they know—about the topic they will be studying. In her book *Writing the Natural Way*, Gabriele Rico describes how clustering not only helps access ideas, but reduces the anxiety people feel as they wrack their brains about a topic. As a person thinks and perhaps gets stuck, "This relaxed receptivity to ideas usually generates another spurt of associations." In other words, it is meant to open students up to connections and possibilities they might not have realized when they started. This is why the activity requires, like brainstorming, that all ideas be accepted, and that the students toss them in as quickly as possible, without censoring or questioning the connections they make.

Mind-mapping looks very similar, and similarly helps students to organize their thinking about a topic. However, it usually serves this purpose after a piece of reading or study is completed, enabling readers to put the pieces together, so to speak, and see how they are related. Because

clustering and maps are two-dimensional, they enable students to more easily see the multiple connections that are harder to illustrate in the one-dimensional linearity of the printed word.

This strategy especially asks students to identify larger concepts in their reading, and then to group lesser elements under them. So mapping presents a great opportunity to teach a minilesson or two on this important thinking strategy. Cognitive researchers tell us that our minds, particularly in short-term memory, can deal with only limited numbers of items at once. But batching together a jumble of items in some logical way makes them one larger mental unit—your friend's phone number is easier to remember than a separate string of ten numbers if it reminds you of a famous historical date. Understandably, as we work through a unit of study we often break it down into smaller pieces so that students are not overwhelmed and can grasp one aspect at a time. The downside of this is that they might never add up the pieces into something larger that connects with big ideas and issues in their lives. So we need to make sure that the bigger picture doesn't get lost as we teach. This activity invites students to synthesize many aspects of an idea, rather than simply march dutifully and mindlessly through a series of tasks.

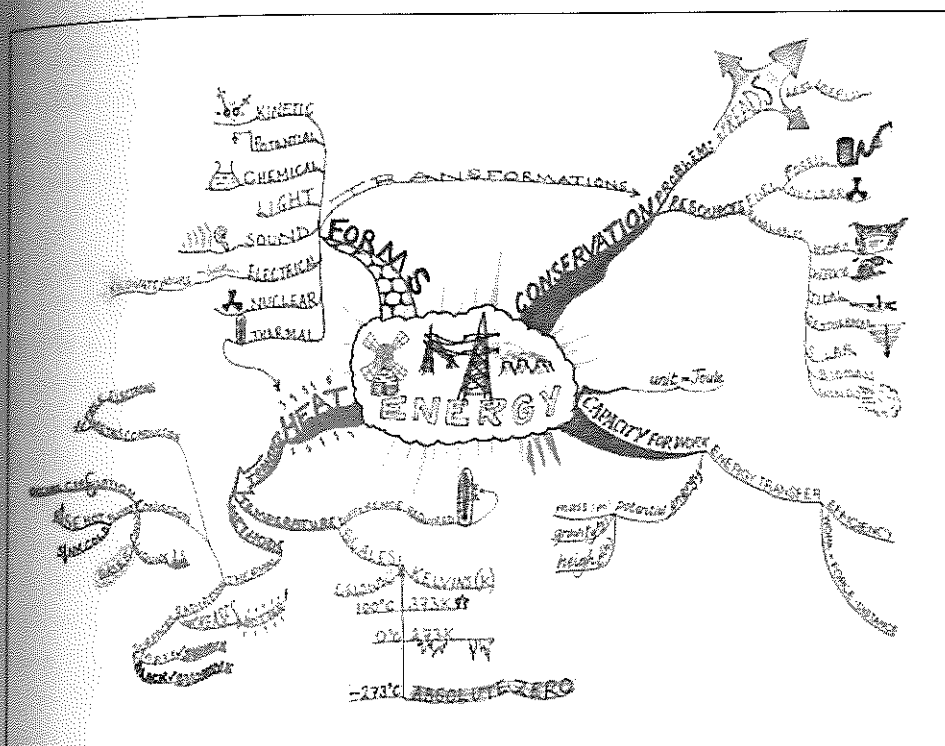
How Does It Work?

- 1 As with many of our strategies, it's advisable to model the activity, have the class practice and compare results, and observe as students use the activity in order to help them and inform yourself about how they are doing. Use short samples of text to show students how you do this, as a competent adult reader, and to give them plenty of practice at it.
- 2 For conducting a clustering or mapping activity with a whole class, write a key "nucleus" word—e.g., *infinity*, *erosion*, *manifest destiny*—on the whiteboard or project it on a screen.
- 3 Students may work separately at first, writing the nucleus word and circling it in the center of a piece of paper, and thinking of words and ideas that connect with this word. They write these related terms around it, drawing circles around the words and connecting these with lines to the nucleus word. They then share their ideas one at a time as the teacher constructs a class diagram for all to see. As more connections occur, these get added to the diagram, with lines to show which terms they connect to. Students should do this quickly and avoid rejecting anything. If students are to create their own kind of map, be sure they understand that there are a wide variety of ways to represent their thoughts.

4 As with brainstorming, you can refer back to the clustering after students have read the relevant material, to help them notice which ideas emerged as important in the reading, what was surprising or different from what they expected, and what they learned. Mapping that takes place only after the reading leads to the same kinds of reflection.

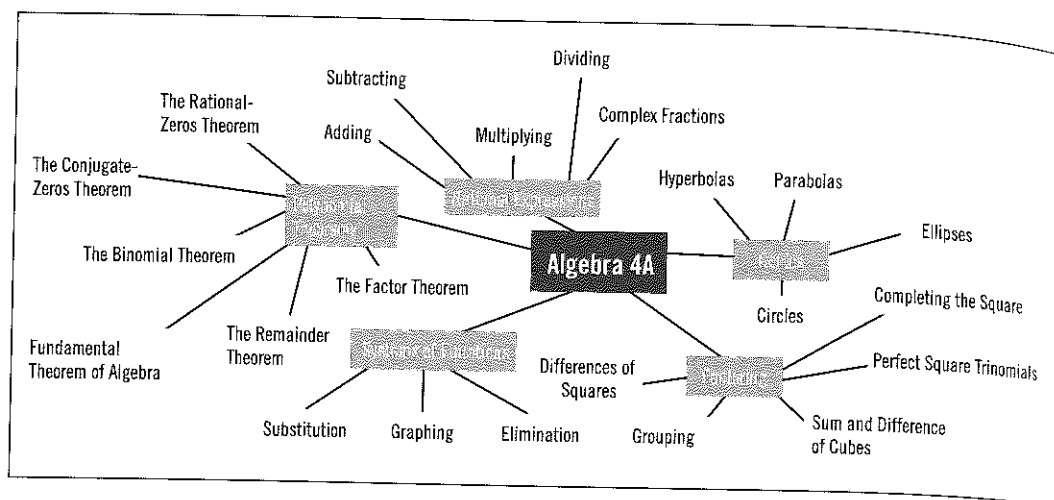
VARIATION: There are already a couple of cool iPad apps that students can use to arrange words in variable and creative relationships with each other, very parallel to the mind-mapping and clustering they might do on paper. Popplet and Big Mind are popular right now, and there will probably be eighteen more by the time you read this.

EXAMPLES

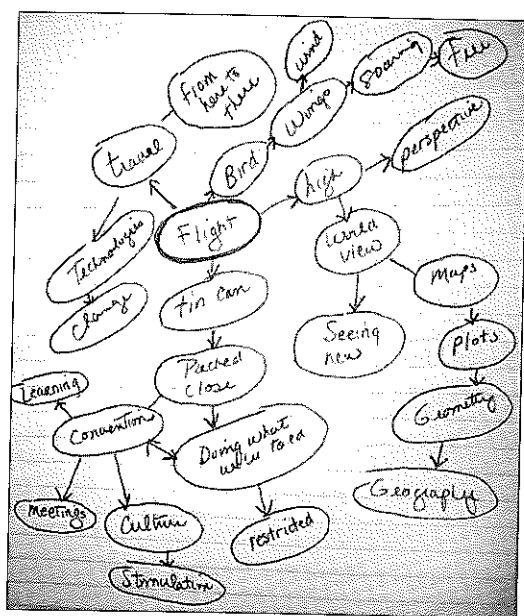


Energy Science Mind Map

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Source: <http://deverett.wikispaces.com/> Reproduced with permission.



Source: www.writingthroughlife.com/a-weeks-worth-of-journaling-prompts-creative-clustering
Reproduced with permission.

TO LEARN MORE

Billmeyer, Rachel, and Mary Lee Barton. 2002. *Teaching Reading in the Content Areas*. Denver: McREL.

Rico, Gabriele. 1983. *Writing the Natural Way*. Los Angeles: Tarcher.

Think Buzan, Inc. 2012. "Beginner's Guide to Using Mind Mapping in the Schools."

<http://blog.thinkbuzan.com/education/beginner's-guide-to-the-use-of-mind-maps-in-elementary-schools>

STRATEGY: **Written Conversation**

FOCUS: Sharing Ideas, Discussing, Debating

WHEN TO USE: Before Reading **During Reading** **After Reading**

DESCRIPTION:

Kids love to write notes to each other in school—but those notes rarely have anything to do with what we're trying to teach. Written conversation harnesses the universal urge to share, but brings it into the curriculum. After reading (or discussing a topic, or watching a video, or doing a science experiment), students in pairs or small groups write short notes and responses to each other about the experience. Also called dialogue journals—or write-arounds when the groups involve three or more students—you can think of written conversation as legalized note-passing in your content area that gets students thinking by putting their thoughts into words and responding to one another. We can easily structure this so that students are taking and defending positions, based on evidence in the text they have read.

Why Use It?

We often use “class discussion” as a key after-reading activity. But when you think about it, what is a class discussion? It is usually one person talking and twenty-nine others sitting, pretending to listen, and hoping that their turn never comes. This ain't exactly what the standards documents call “engaged learning.” In fact, while whole-class discussion may be ubiquitous in our schools, it is a pretty passive form of instruction, since most kids at any given moment are not actively engaging the material. If the point of talk is to help students get more deeply into the subject matter and the meaning of what they've read, then everybody in the room ought to be doing it. Smokey and his wife Elaine just published a whole book on this activity, which they call “the best-kept teaching secret” (Daniels and Daniels, 2013).

The solution, then, is quite simple: with written conversation, you can have a “discussion” where everyone is actively talking at once—though silently, in writing. Sure, you may have a few kids drift off the topic or say they can't think of anything—but you'll also have a solid majority of the class actually thinking and exchanging ideas about your subject.

How Does It Work?

- 1 After the reading (or other shared experience) is completed, have students identify partners or a small group for their written conversation. Four is the max. Each student needs a full-size blank sheet of paper and a pen at the ready, as well as the material being studied.
- 2 Explain the activity first, if this new to them, so the students understand that they will be writing simultaneous notes to one another about the reading selection, swapping them every two or three minutes at your command, and continuing the process for as long as your time constraints allow—and of course keeping quiet along the way. They are to write for the whole time allotted for each note, putting down reactions, questions, connections, ideas, wonderings—anything related to the passage, or responding to what their partner or other group members have said, just as they would in out-loud conversation. Spelling and grammar do not count—after all, these are only notes, not polished papers. Just to be clear, *all students are writing all the time*—no one is watching someone else write and waiting for a turn.
- 3 You can leave the topic open (“whatever struck you about this reading”) or give an appropriate open-ended prompt: “What do you understand or not understand in this selection?” “What are the most important ideas here?” “Do you agree or disagree with the author, and why?” You can also use very narrow and precise topics: “Talk about Holden Caulfield’s attitudes toward sex as they are revealed in Chapter 9 of *Catcher in the Rye*.”
- 4 Both students in each pair—or all in a larger group—write an initial note (e.g., “Dear Bobby, When I read this chapter, I was amazed that General Eisenhower actually said . . .”). Meanwhile, watch the time, and after a minute or two ask students to pass their notes to their partners or to the next person in their group. Explain to everyone: “Read what your partner said, then take a minute to answer, just as if you were talking out loud. You can write responses, feelings, make connections of your own, or ask your partner questions—anything you would do if you were talking face-to-face. Just keep the conversation going.”

With each succeeding pass, you need to allow a little more time since students have to read what the increasing number of classmates on the page have contributed.

For dialogue journals in pairs, it’s a good idea to have the notes go back and forth three or four times so that an extended conversation gets going. For groups of three to five, students can keep passing their notes around the circles and writing until each group member gets his or her original note back.

5 After the exchange is complete, the payoff begins when you say: "OK, now continue the conversation out loud with your partner(s) for a couple of minutes." If you worry about kids making that switch, first have them read back through all the notes on their sheet and then circle the "one most interesting sentence" that anyone wrote. Now have them use these as discussion starters for the face-to-face conversation. You should notice a rising buzz in the room, showing that kids have plenty to talk about. Circulate and sit in on groups as they talk, to get a flavor of their thinking.

6 Now a short whole-class discussion can be much more engaged and productive, because everyone will have rehearsed their thinking about the topic. Ask a few pairs to share one highlight or thread of their written conversations as a way of starting discussion. Biology teacher Lisa MacArtney collects the papers and reads aloud some of the marked sentences—which allows for anonymity for students who wish it. Lisa reports that the students especially enjoy this step, and once it's a regular practice, it serves as a strong motivation to write thoughtful comments. Lisa, by the way, uses written conversation with the real-world articles that she employs as high-interest starter reading for just about every unit in her course.

Predictable Problems

The first time you try this, a few kids may shift into oral conversation when papers are passed (adults also do this—it's a normal human response when you are bonding with a partner or a group). Be ready to remind them to "keep it in writing" during the transitions. Then, even with the best instructions, some kids will write two words and put their pens down, wasting two good minutes of writing time with each pass. You have to keep stressing that "we write for the whole time."

Because this activity has a lot of positive social pressure to work fast, we've taken to projecting four or five "safety net topics" just for the kids who need a jumpstart—or a restart. We tell them to use these only if they're really stuck. Usually the comments from classmates will give them plenty to respond to. Finally, when you call kids back to order at the end, when they are talking out loud with their partners, you may find it very hard to regain their attention. This happy little "management problem" shows you that kids are connecting to each other and the material.

EXAMPLE

Melly, Did Mr. Gridley say that microwaves gave off ionizing radiation? I thought that kind was dangerous, and I don't understand why they'd let us have something in our homes that's dangerous. Did I just hear him wrong?

- Rose

Yea, microwaves do give off ionizing radiation which is dangerous. But microwaves give off such small amounts so they're not dangerous. Mr. Gridley said that we can only have under 5,000 mREMs a year. Microwaves give off such small amounts that we won't come close to having reaching 5,000 mREMs.

Melly

That still kinda creeps me out though. I don't want to grow a third ear just cause I wanted to make some oatmeal in my microwave.

- Rose



Written Conversation About Ionizing Radiation

TO LEARN MORE

Daniels, Harvey, and Elaine Daniels. 2013. *The Best-Kept Teaching Secret: How Written Conversations Engage Students, Activate Learning, and Grow Fluent Writers*. Thousand Oaks, CA: Corwin.

STRATEGY: **Second Helpings**

FOCUS: **Recalling and Summarizing**

WHEN TO USE: Before Reading **During Reading** After Reading

DESCRIPTION:

The teacher selects a piece of content-area material that rewards rereading. Usually, this means that the text has multiple, easily missed layers of meaning; is prone to superficial readings; or taps into common misconceptions that lead readers astray. Then, the teacher plans and leads students through two (or three) successive readings of that text, taking responsibility to make each rereading feel like an adventure, a second helping of something delicious. In other words, the teacher entices kids to dig deeper, not through coercing them, but by evoking their curiosity.

Why Use It?

Every teacher has heard—and many have been intimidated by—the Common Core’s insistent call for kids to do multiple readings of very hard text. When we first saw the standards ourselves, back in 2010, we immediately envisioned having to flog high school kids through Emerson’s impenetrable “Society and Solitude” (a CCSS “exemplar text”)—over and over and over and over. But you know what? Whether we think particular selections should be included in the curriculum or not, some text is just too damn hard to be comprehended in a single pass by any normal human being.

Many kids feel that being asked to read something a second time is a punishment because they didn’t “get it” or are just “bad readers.” This bespeaks their lack of understanding of the cognitive process of good readers, not a straight line but a back-and-forth process filled with rereading. Remember our thought experiments back in Chapter 2 (batsmen and bowlers, Columbus, RNA interaction), which showed how recursive reading is, how skillful readers are *rereading all the time*, though often unconsciously? Rereadings, second readings, and multiple readings are cognitive moves that good comprehenders routinely make.

And here’s another reason that second readings are necessary. Both kids in school and many grown-ups in our society often do crappy first reads. Yeah, we said it. Readers zoom through an article once and are perfectly delighted to offer commentaries about it with little or no understanding at all. The habit of closer, careful rereading is vital for all of us.

The trouble with the CCSS vision of rereading (and the countless mechanical online lesson plans it has spawned) is that teachers merely *command* kids to “read it again.” So the student’s only

purpose is to be obedient. How many teenagers are galvanized by that? So, our version of second readings stresses giving kids a motivating, meaningful, dare we say a “fun” reason to reread. That’s why we call this strategy “second helpings”—because that’s something people ask for when they are having a good time.

How Does It Work?

1 Have students read the text one time through to get the gist, the basics, the plot. If you have them annotate, steer them toward getting the factual information clear in their heads. After this first reading, stop to have several kids offer comments and reactions. Try to evoke questions, uncertainties, and misconceptions.

2 “Now we are going to read it again, but this time we are going to look at it in a different way.” This is the core of second helpings, creating a reason for rereading that motivates kids. Each prompt will be very individual to you and to the subject matter at hand, so we cannot give you a generic list of these prompts. But here are some examples that communicate their flavor.

Literature: “Some people who have read this short story think that the main character is a terrible mother, and others think she is doing the very best she can. Now let’s read it again with that controversy in mind: be on the lookout and mark specific evidence in the text that shows how good or bad a mother she is.”

Math: “Now that you have read about the Fibonacci series, let’s go back and reread with the question in mind: How does this connect to the Golden Ratio? Look for evidence of the relationship and make some notes in the margin to help you remember it.”

Science: “Now that you have read about the phenomenon, reread the passage, looking for information that can help you draw the process—and use it to make a diagram.”

Social Studies: “Now that we have studied this portion of the Constitution, reread it with this issue in mind: Many judges have held that there is an implied *right to privacy* in the Bill of Rights. Mark any such evidence you think they might have used to come to such a conclusion, and be ready to share it.”

SCIENCE

VARIATION: When Smokey was recently guest teaching some eighth-grade science in California, the topic on the curricular agenda was *orbital mechanics*. The timing was good for this topic since the comet ISON was at that time approaching the sun. To deepen kids’ understanding, Smokey wanted them to read the NASA article “Ten Thousandth Near-Earth Object Unearthed in Space.” But the piece

was quite challenging, and a single reading was not going to be enough for kids to really understand the science. Here's how the kids worked through second and third helpings of this fact-filled text.

1. I handed out the article to kids and asked them to "read for the main ideas."
2. Next, we had some initial whole class discussion—what were the big ideas they learned about near-Earth objects? Mostly this discussion centered on the different types of objects, not so much on how they moved.
3. Next, I asked students to reread to locate and mark information that helped them *visualize* the solar system. "What kinds of objects are out there, how big are they, and how do they move? Then make a drawing—a diagram, cartoon, mind map, close-up, or cross-section—any kind of graphic representation that helps us understand near-Earth objects better."
4. After about five minutes of quiet work time, I had groups of four pull together and share their drawings. The task was to connect their drawings to specific passages in the article, explaining to classmates exactly what they were trying to represent in drawing.
5. Then I asked that each group nominate one to be shared with the whole class. Predictably, many kids showed a picture of an asteroid hitting the earth, and then enthused about NEO-themed movies like *Deep Impact* or *Armageddon*.
6. Picking up on that curiosity, I called for a *third* helping, "Now read through the article one more time looking for any information that could help you develop a technology to deflect a large asteroid or comet headed for Earth. Work with a partner to develop your strategy—you can go online to see what others have proposed (there are many options). It's up to you to determine, based on this article and our other studies, which strategy is most plausible. Be ready to share your chosen Earth defense strategy with us tomorrow."
7. The next day's discussion—celebrating our third time through the article—was a festival of science and invention. Kids had discovered and were advocating a wide variety of Earth-protecting theories. Many had learned that simply sending up a nuclear missile would probably be too little, too late. Given the physics of the solar system, more effective action had to be taken far in advance, when a slight change in trajectory could avert disaster.

TO LEARN MORE

Jago, Carol. 2012. "Closer Reading for Deeper Comprehension: Uncommon Sense about the Common Core." AdLit in Perspective. www.ohiorc.org/adlit/inperspective/issue/2012-10/Article/feature.aspx.

STRATEGY: **Where Do You Stand?**

FOCUS: **Taking and Supporting a Position**

WHEN TO USE: Before Reading During Reading **After Reading**

DESCRIPTION:

This up-and-thinking activity one has more names and variations than you can count. Maybe you've heard of Four Corners, the Human Continuum, Living Likert Scale, Barometer, or the Human Bar Graph. All these kindred structures invite students to vote with their feet, representing their thinking by where they stand and who they talk to when they get there. We move kids through a series of conversations with other students in which they must defend their interpretation of a complex text and listen respectfully to other points of view. These activities are extensively used (and documented) by an organization we much admire, Facing History and Ourselves.

Why Use It?

The CCSS strongly emphasize learning how to develop an argument, using evidence from a text, and defending that position in vigorous debates and discussions. But did we really need to be reminded about this kind of high-order thinking? Whatever field we teach, our most challenging issues are not usually about factual recall, but about differing interpretations of those facts, alternative hypotheses, clashing paradigms, opposing viewpoints, or value trade-offs. This structure makes it possible for students to join in those debates in a way that's physical, sociable, and energizing.

How Does It Work?

1 As we have said, there are many versions of this activity—so we'll give you one example and then talk about some alternatives. It all begins when you are teaching a complex or controversial topic in your subject field. Smokey has often used "Where Do You Stand?" to help kids explore the United States' decision to drop atomic bombs on Japan. After reading varying accounts of Truman's decision—including Eisenhower and MacArthur's adamant opposition, America's refusal of an earlier Japanese surrender offer, and implications in Secretary of War Henry Stinson's memoirs that he coached Truman to extend the war until the bomb was ready—you pose a question. "Based on all you have read about this issue, where do you stand? In a couple of minutes, we are going to stand

in a line, based on your interpretation of all the materials you have studied." Then stand up and indicate specific locations for a lineup, beginning at one end of the room:

- * "If you are **absolutely sure** that the U.S. did the right thing by using nuclear weapons on Japan, you will stand here."
- * "If you are **fairly sure** that the U.S. was right, stand here."
- * "If you are **fairly sure** that the U.S. was wrong to drop the bombs on Hiroshima and Nagasaki, stand here."
- * "If you are **absolutely sure** that the U.S. was wrong, stand here at the far end of the line."

2 Next, tell kids: "Now I am going to give you a few minutes to review your notes and annotations, consider all your learning, and decide where you belong on that line. You will need to explain to the people standing around you what specific evidence supports your viewpoint." Have kids jot a few phrases on a note card to bring along.

3 After that think time, have students grab their notes, stand up, and assume their places. "Now, turn to one person beside you and take turns explaining your position. Where you are standing right now, you are going to mostly agree with nearby people, right? But your partner may well have different reasoning or evidence, so listen carefully. Explain your interpretations, and support your claims. Take about one minute each." This stage—working with someone who *agrees with you*—helps kids to clarify their position and potentially strengthen their argument.

4 With everyone still in position, call for quiet and ask several pairs to share their thinking. Ask them to explain how their argument was validated, challenged, or improved during the partner conversation.

5 Now "fold the line" at the middle. The kids at the two extreme ends walk toward each other so that the line is now two people wide, and every student is now facing someone with a *different* position. (You may have to do a bit of swapping around in the middle to make sure kids get a new partner.) Invite the students to argue their positions, taking one minute each. If you like, you can make rules allowing for two stages of discussion, with opening arguments and rebuttals.

6 Once again, call students to attention to process the conversations. First, ask if any students have changed their position on the issue as a result of their debate with a classmate. If anyone has, have him explain how his opinion changed, what evidence convinced him. Invite that person to actually move to his new spot on the continuum before you continue—when this

happens, it's dramatic. Next, invite several pairs to recount how their mini-debate unfolded, what they noticed about each others' evidence, and how they might make even stronger arguments in a subsequent debate.

VARIATION: Hopefully this example helps you envision the many iterations of this versatile up-and-thinking activity. Depending on the subject matter, you can have kids stand in the four corners of the room to represent their thinking, or physically arrange themselves into a bar graph or pie chart. Whatever shape you use, the key is to plan the interactions in advance: How can you arrange and shift kids so they talk with several others during the meeting? Plan for sharing and debriefing between each setup.

Predictable Problem

All these standing structures require very active teacher management. You should be in the crowd, moving people around, coaching and supervising. Kids who are unused to these mingling activities will tend to cluster in too-large groups and stare at each other. Just walk up and physically split these clumps into pairs: "You two are partners now, continue the discussion." If you get an unbalanced line, with everyone at one end and no one to debate with, you haven't picked a sufficiently debatable topic. Life lesson. But the lineup still works and it can still be folded; the conversations will just be among people with the same viewpoint.

TO LEARN MORE

Facing History and Ourselves. 2013. "Teaching Strategies: Four Corners." www.facinghistory.org/resources/strategies/four-corners.

Facing History and Ourselves. 2013. "Teaching Strategies: Barometer—Taking a Stand on Controversial Issues." www.facinghistory.org/resources/strategies/barometer.

STRATEGY: **RAFT Essay**

FOCUS: **Recalling and Summarizing**

WHEN TO USE: Before Reading During Reading **After Reading**

DESCRIPTION:

RAFT stands for Role/Audience/Format/Topic. This is a more extended writing activity for digging into topics in content-area classes. When students are ready to create larger written pieces, this strategy helps make them much more interesting than just a straight essay or summary. While a RAFT assignment may specify the topic to be explored, students have real choices for each of four aspects of the writing. In other words, each student designs her own personal "assignment" by choosing from lists for the four aspects:

- * the **role** the writer takes—the person who is portrayed as speaking in the piece
- * the **audience**—the person or group to whom the writer is speaking
- * the **format** of the writing—letter, news article, poem, brochure, email, etc.
- * the more specific **topic** within the material

The chart on page 172 shows some possible choices for a chemistry writing assignment on a collection of articles about radioactivity. One student might choose to take the **role** of Marie Curie as the discoverer of radioactivity, and decide to send to her university department chairman (her **audience**) a letter (the **format**) arguing about why it's important to let her further study this just-discovered force of nature (her **topic**). Another student might choose to write as Albert Einstein, sending a letter to President Truman about how the United States could build a new, very powerful weapon—an atomic bomb. (And then she could look at the real letter Einstein *did* write.) Thus the writing can involve students in addressing a topic from the point of view of a historical figure, a fictional character—or in some applications, even an animal or an object.

Why Use It?

While this activity takes more time than most in our collection, it also enables students to dig deeper into the content. Radioactivity might receive just a few pages of explanation within an eight-hundred-page textbook. But by reading further and then writing an entertaining piece that captures the attention of fellow students, the author engages in a memorable activity that helps permanently cement concepts and information in her mind. Reformulating ideas in writing and in a different voice helps students internalize them. We also know that students respond especially

positively when creative choice is built into their assignments. But the choices must be serious and meaningful, so that they really steer the vocabulary, style, and focus of the writing. While you may not have the time to use a RAFT project for every unit in your course, conducting it for several key concepts or focal points in a course can help ensure that students really understand material that is essential in your subject. And as we'll see from middle school teacher Laurie Hendrickson's practice, the project can expand to encompass as much material in your course as you'd like to include.

How Does It Work?

- ❶ First, you need a list of choices for each aspect of the writing, within your topic—something like the chart on page 172. You can develop the lists yourself, or better yet, brainstorm lists with the class. If the kids are ready for it, ask them to create the options on their own.
- ❷ To introduce RAFT writing, lead a minilesson in which the class together creates the opening of a written piece while you hold the marker or type in the text. This means that once you focus students on a chunk of content they've been studying, they brainstorm the four lists, and then collaboratively draft the first few paragraphs of the writing.
- ❸ Once students are ready to work on a fresh topic, provide class time for the activity, so you can confer with individuals and keep track of their progress. In-class work time not only helps to actually get the writing done, it also enables the teacher to observe on the spot, to ensure that students are moving successfully through the steps in the process—making their RAFT choices, marshaling the information they need, getting their drafts written, and so forth. This essentially means using the classroom workshop structure described in Chapter 8. We say "writing," here, but increasingly the *format* for projects like these will involve Web tools—PowerPoint presentations, videos, blogs, websites, podcasts, or Web-based videos.
- ❹ Sharing the outcome is important. Real writing (and any other type of communication) is not just about getting a grade, but also informing, influencing, or entertaining someone else. Including this dimension converts the work from an assigned exercise into an authentic exchange of ideas—so it becomes much more meaningful to the students. If there's time, students can read to or perform for the whole class, but it's also fine to use smaller groups, so more presentations get heard in a limited time span. Obviously Web tools greatly increase the efficiency of this sharing, enabling multiple exchanges to take place simultaneously, as well as at various additional times outside the class period.

VARIATION: Laurie Hendrickson, language arts teacher at Roosevelt Middle School in River Forest, Illinois, has expanded the RAFT strategy in a very effective way, using the acronym CRAFTS. The added **C** stands for "Context" and the **S** is for "Structure of Text," added steps to help students decide how to organize their writing. She altered the **T** to stand for "Theme," and asks students to make more of a claim, rather than just address a broad topic. Laurie has built the approach into a biography project in which students choose two important figures to learn about and compare. They study biographical materials for each one. Laurie and her partners have compiled extensive lists of biographical and informational books about people in a wide variety of areas—civil rights, the Civil War, the Holocaust, the Roosevelts, the Kennedy family, the Founding Fathers, labor history, women's rights, famous scientists, famous baseball players, famous jazz musicians, famous artists, and more.

The students write context pieces first, using the voices of their chosen personalities or telling narrative stories about them. Then their CRAFTS projects take a variety of forms—green screen movies, Prezi keynotes, websites, mock journals. These must include more than one perspective, though the voices can portray various people talking about their subjects, rather than only the famous figures themselves. These projects are challenging—students must read and digest at least a hundred pages of nonfiction material. But Laurie observes, "When you give kids choices, not just about the topic but for many aspects of a project, it's amazing what they create." Laurie credits Elfrieda Hiebert's "Seven Actions That Teachers Can Take Right Now: Text Complexity," from the Text Project at the University of California Santa Cruz, for guiding the development of this project.

TO LEARN MORE

Daniels, Harvey, Steven Zemelman, and Nancy Steineke. 2007. *Content-Area Writing: Every Teacher's Guide*. Portsmouth, NH: Heinemann, 156–166.

Hiebert, Elfrieda, 2012. "Seven Actions That Teachers Can Take Right Now: Text Complexity." <http://textproject.org/professional-development/text-matters/7-actions-that-teachers-can-take-right-now-text-complexity>.

Northern Nevada Writing Project. 2012. "Writing Across the Curriculum: RAFT Prompts." WritingFix. www.writingfix.com/wac/RAFT.htm.

Simon, Cathy Allen. 2013. "Using the Raft Writing Strategy." IRA/NCTE ReadWriteThink. www.readwritethink.org/professional-development/strategy-guides/using-raft-writing-strategy-30625.html.

Strayer, B., and T. Strayer. 2007. *Strategies for Differentiating in the Content Areas*. New York: Scholastic.

EXAMPLE

Directions: Choose one option from each column to create your own writing assignment. Some choices can be mix-and-match. Others pretty much go together.

Raft Chart for Radioactivity Unit

Role	Audience	Format	Topic
Antoine Henri Becquerel	Pierre and Marie Curie	Personal letter	The mysteriously ruined film in his desk drawer, and what it might be caused by
Marie Curie	Director of Paris Industrial Physics School	Written request	Explaining why it's important to use a lab in the school for experiments on radioactivity
Albert Einstein	President Truman	Formal letter	How a new, more powerful bomb could be built
Mother of a U.S. soldier in 1945	Newspaper readers	Op-ed piece	Why an A-bomb should/should not have been used on Japan
Nuclear medicine doctor	Medical patients	Brochure	How lung and heart problems can be diagnosed using radioactive chemicals
Home repair company owner	Home owners—potential customers	Advertisement mailed to homes	Why home owners should use the company to have their basements radon-proofed
Head of Atomic Energy Commission	Members of environmental organization	Speech at organization conference	Why it's a good idea to build new nuclear-powered electric generators
Head of environmental protection organization	U.S. senators	Testimony for Senate hearing	Why it's not a good idea to build new nuclear-powered electric generators

STRATEGY: **Password**

FOCUS: **Building Academic Vocabulary**

WHEN TO USE: Before Reading During Reading **After Reading**

DESCRIPTION:

This is a speedy and energizing whole-class vocabulary review, played as a competition among several teams. It is a school adaptation of the old TV game show *Password* that we learned from Jackie White, an awesome literacy coach in the Milwaukee Public Schools.

Why Use It?

We've stressed the importance of kids acquiring Tier 2 vocabulary—those versatile academic words that reach across many disciplines. But occasionally kids must also memorize subject-specific technical vocabulary (Tier 3 words) that they may never again use in their lives: *mitochondria*, *phloem*, *heptocracy*, *iambic*, *plesiosaurus*. When students do need to remember terms like these *for a while*, here's a way to review and short-term memorize.

How Does It Work?

- 1 After the class has worked on a set of new vocabulary items (ten to twenty words works well), have students get into groups of five. Using chart paper and markers, each group simply makes a list of five of the words, terms, or names studied that day. These are written big enough to be seen across the classroom. Now one student from another group volunteers (or is dragooned) to play, and stands in front of the class.
- 2 The first group hangs its list of five terms behind the volunteer, who is not allowed to look back at it. A timer is set to sixty seconds. When the clock starts, the whole class shouts out clues to the volunteer ("It's a way of shaping land"; "Something farmers do to prevent erosion"), who has to correctly identify the term. At one minute the turn ends. The timekeeper notes the number of words correctly identified and the time elapsed.
- 3 The next group posts its list, another player is selected, and the game continues until all groups have had a turn. The student who correctly names five vocab words in the least amount of time wins for his or her team. Applause all around.

- ④ You can do this with technology, of course. Have teams submit (text, email) their five words to the teacher, who can project them on a screen behind each player. There are even blank password game templates in PowerPoint, loose on the Internet, if you trust their sources. We suggest: run but don't save.

TO LEARN MORE

Holbrook, Sara, and Michael Salinger. 2010. *High Definition: Unforgettable Vocabulary-Building Strategies Across Genres and Subjects*. Portsmouth, NH: Heinemann.

