

# The Path to Get There

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## Literacy Learning for Higher Student Achievement Across the Disciplines

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*Foreword by Donna Ogle*



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Figure 2.8. Text Exemplars in the Disciplines

| Grade Band | History/Social Studies  | Science and Technical Subjects  |
|------------|---|---|
| 6–8        | <p>United States. Preamble and First Amendment to the U.S. Constitution. (1787, 1791)</p> <p>Isaacson, P. (1993). <i>A short walk around the pyramids and through the world of art</i>. New York: Knopf.</p> <p>Freedman, R. (2008). <i>Freedom walkers: The story of the Montgomery bus boycott</i>. New York: Holiday House.</p>          | <p>Macauley, D. (1983). <i>Cathedral: The story of its construction</i>. Boston: Houghton Mifflin.</p> <p>Petroski, H. (2003). The evolution of the grocery bag. <i>American Scholar</i>, 72(4).<br/> “Elementary particles.” <i>New Book of Popular Science</i>.</p>   |
| 9–10       | <p>Brown, D. (2007). <i>Bury my heart at Wounded Knee: An Indian history of the American west</i>. New York: Holt.</p> <p>Dash, J. (2000). <i>The longitude prize</i>. New York: Farrar, Straus and Giroux.</p> <p>Haskins, J. (1998). <i>Black, blue and gray: African-Americans in the Civil War</i>. New York: Simon &amp; Schuster.</p> | <p>Euclid. <i>Elements</i>.</p> <p>Preston, R. (1999). <i>The hot zone: A terrifyingly true story</i>. New York: Anchor.</p> <p>U.S. Environmental Protection Agency/U.S. Department of Energy. <i>Recommended levels of insulation</i>.</p>  |
| 11–12      | <p>Tocqueville, A. <i>Democracy in America</i>.</p> <p>Langemann, E. C. “Education.” <i>FedViews</i> by the Federal Reserve Bank of San Francisco.</p>  | <p>Gladwell, M. (2000). <i>The tipping point: How little things can make a big difference</i>. New York: Little, Brown.</p> <p>Gatwande, A. “The cost conundrum: Health care costs in McAllen, Texas.”</p> <p>U.S. General Services Administration. Executive Order 13423: <i>Strengthening federal environmental, energy, and transportation management</i>.</p> |

measured. These include the quantitative measures that a computer calculates, and qualitative values that only a knowledgeable human can glean. The second concerns the reader and the task they are completing.

**Quantitative.** Quantitative measures are relatively straightforward and are calculated using any one of a number of algorithms that count words, sentence length, relative rareness, and even the average number of syllables in a sentence. A well-known proprietary formula is the Lexile measure. Although this quantitative measure has been used for a number of years, the issuance of the core standards brought with it a change in the expected grade-level bands. This shift upward in text complexity has created intense discussion about the means for raising student reading capacity

## GENERAL CONTENT READING

There is arguably no more important aspect of reading than comprehension because understanding what is written is the “gold standard.” Reading comprehension is an active process of making meaning of written text. Comprehending readers make personal connections, draw conclusions, make inferences, and formulate questions as they read. Without it, reading is reduced to word-calling, with students merely identifying the words without grasping the meaning. From the beginning of kindergarten, effective reading instruction focuses on some aspect of comprehension. Reading comprehension does not simply happen through lots of reading; it is developed through routines designed to teach students about how text is understood.

### Teaching Students About Text Structures

We believe that students should be explicitly taught the structures and styles used in their textbooks and readings. We have seen students approach expository text as if it is narrative, looking for the familiar story grammar of character, setting, plot, and the like. Unfortunately, knowledge of narrative structures is unlikely to be of much help in a social studies textbook or a scientific text about endangered amphibians. However, explicit instruction in the types of structures found in these books and the signal words associated with each structure will sustain and improve their comprehension.

The most common types of text structures are:

1. description/exemplification (concept/definition);
2. compare/contrast;
3. cause/effect;
4. problem/solution; and
5. sequential.

These text structures can often be identified by their use of signal words—words or phrases used in the text to alert the reader to how the information is being organized. Effective readers use knowledge of structure and signal words and phrases more successfully than struggling readers (Kletzien, 1992). Figure 2.10 shows the relationship between types of informational texts and the signal words most closely associated with them. Signal words and phrases are notable when they are *not* used. As texts become

entire body, lying *undisturbed for thousands of years* deep in the *cool, dark mudbrick* pyramid.”

**Compare/contrast.** Text structures that compare and contrast use descriptive language, but also explain how two or more people, places, or phenomena are similar or different. Like exemplification, most textbooks contain some compare/contrast passages as well. Signal words like *although, yet, while, however, same/different, like/unlike*, and other words that show opposites are likely to appear. “*Although* the first mummies were probably accidental, mummification became an art in ancient Egypt. *While* members of the noble classes *were* mummified, poor people usually *were not*.”

**Cause and effect.** These text structures, which show the causal relationships between phenomena, can be deceptively similar to compare/contrast, but their signal words give them away. Words like *since, because, as a result*, and *if . . . then* statements are frequently seen in these passages. “*Because* the Incas lived in the high Andes, they created ice mummies that were preserved in the thin, frigid mountain air.”

**Problem/solution.** Another text structure is *problem/solution*. Seen frequently in mathematics textbooks, they contain signal words like *question, answer, thus, accordingly*, and *decide*. A challenge of problem/solution is that it is more subtle than some of the others, and may develop over the course of several sentences or paragraphs. “*Theft and the desert climate have taken their toll* on Egyptian mummies. *Accordingly*, the government has taken steps to preserve the remaining mummies by installing *climate controlled displays* and sophisticated *security devices*.”

**Sequential/temporal.** Easier to detect is our final text structure, the *sequential* or *temporal* (time-based) passage. These signal words jump out of the text for most readers and include words like *first, next, last, before, afterward, another*, and *finally*. (If you were paying attention to the structure of this sequential paragraph, you knew we were coming to the end by the use of the word *final*). “*The first* step in the mummification process was to remove all the internal organs. *Next*, the embalmer drained the body of fluids. *Finally*, the body was wrapped in linens.”

Knowledge about text structures supports reading comprehension of informational texts. However, the internal dialogue of the reader may be inadequate, especially as it applies to more complex texts. Student

and thinking tends to express itself in words, spoken or written. The person who says he knows what he thinks but cannot express it usually does not know what he thinks. Third, writing your reactions down helps you remember the thoughts of the author. (p. 49)

They go on to describe the most common annotation marks:

- *Underlining* for major points.
- *Vertical lines in the margin* to denote longer statements that are too long to be underlined.
- *Star, asterisk, or other doodad in the margin* to be used sparingly to emphasize the ten or dozen most important statements. You may want to fold a corner of each page where you make such a mark or place a slip of paper between the pages.
- *Numbers in the margin* to indicate a sequence of points made by the author in development of an argument.
- *Numbers of other pages in the margin* to indicate where else in the book the author makes the same points.
- *Circling of key words or phrases* to serve much the same function as underlining.
- *Writing in the margin or at the top or bottom of the page* to record questions (and perhaps answers) that a passage raises in your mind. (Adler & Van Doren, 1940/1972, pp. 49–50)

Eleventh-grade media productions teacher JeJuan Carlson asks his students to annotate text as they read technical instructions. “With the Common Core [State Standards] asking us to up the text complexity, I realized that they needed lots more experience with how to do this,” he said. Many of his students are good readers, but they have what Mr. Carlson calls a “naïve understanding” of their ability to hold extensive amounts of information in their minds. “Some of them think that reading is reading, whether it’s a novel you’re reading at the beach or a scientific paper about an experiment,” he said. Noting that the technical directions for using the equipment can be demanding, especially for background knowledge, he knows that his students tend to skim over the parts they don’t understand and focus only on the parts they do. “The problem is that those parts they don’t understand are really important.” Since most of the instruction manuals that accompany the equipment are digital, he uses a digital annotation software. “I ask students to make digital annotations right on the text so that future users can see their thinking. They also see the notes last year’s

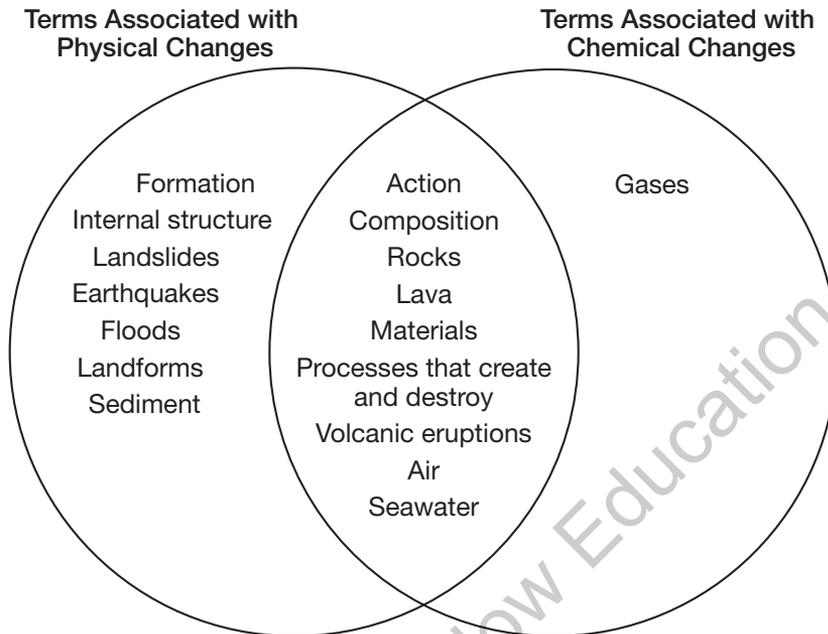
**Design the lesson so students reread.** “The reading isn’t very long, and I know their tendency is going to be to read them quickly and move on,” Mr. McKenna said. “I want to make sure they stay with this reading.” Therefore he has designed the overall lesson to encourage students to read the texts several times. “I prepare my questions in advance so I can remember to ask them for information they need from the reading,” he said. In addition, he has constructed a series of tasks that will require them to read the entry at least three times.

**Ask students to “read with a pencil.”** After introducing the passage to his students to set the context, Mr. McKenna asked them to read it independently. He asks them to annotate the text, or as he puts it, “to read with a pencil,” reminding them to circle words or phrases that are powerful, and to underline those that are confusing. For the next several minutes, his students read silently and mark the text. Mr. McKenna also has two students with disabilities that make it difficult for them to read the text independently; they listen to a podcast version of the reading he made for them as they follow along.

**Remind students to note confusions.** As he examines his students’ notes, he finalizes his decisions about the modeling and thinking aloud he will do next. “I already have a draft plan of my think-aloud prepared, but I find that sometimes their confusions vary from one period to the next.” Wanting to be sure he gets a clearer idea of any difficulties they might have, he then leads a short discussion about their impressions, initial observations, and confusions. Given that a small percentage of Mr. McKenna’s students are ELs, he makes use of collaborative group work that includes “language brokers”—he assigns students to work with ELs who are experiencing difficulty with English, to help them clarify concepts and vocabulary that are confusing or any misunderstandings that may occur in the learning process. A “language broker” in Mr. McKenna’s classroom is highly regarded. In other words, Mr. McKenna strategically organizes his class to ensure that cognitive development is never sacrificed for language. In this manner the diverse needs of his students are both valued and addressed.

**Model the text.** “I’d like you to follow along as I read through this,” Mr. McKenna tells them. “I’m going to read it twice. The first time, I’m going to read it straight through, with no interruptions. The second time, I’m going to tell you about what I’m thinking as I read it.” His think-aloud focuses on how he uses the text structure to understand the field’s

**Figure 2.13. Venn Diagram of Physical and Chemical Processes in Geology**



- Next, he asks a question about the *author's purpose*. "I really want to build the habit of validating sources of information because in science, especially the popular press, there's lots of misinformation out there." He asks them about the purpose of the piece, reminding them, "Look at the source so you can explain how that helps you answer this." The students now notice that it comes from an encyclopedia, presumably a solid source, and that the purpose of encyclopedia entries is to explain and inform, and to stick to the known facts but not speculate.
- Satisfied that his students are going deeper into the text, he poses an *inferential question*. This type of question requires students to look at the piece as a whole, and not within a single sentence or paragraph. "How does the writer make a case that the main branches of geology—physical and historical—need each other? Why would this field of study be incomplete if we eliminated one or the other?" he asks.
- Having spent about 30 minutes on this single reading, Mr. McKenna is now ready to have his students move beyond the text. "I selected this piece because I want to lay the groundwork for the geology unit," he said. "And I want them to know there's