

Readability

and the *Explore*[®] Textbooks

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Readability¹ and the *Explore*[®] Textbooks

Educators spend a great deal of time selecting texts that their students can read. The “readability” of a text is determined in several different ways. A common method for assigning a reading level to a text is through the use of a readability formula.

Readability Formulas

Readability formulas are mathematical equations that determine the difficulty of text. These formulas are usually based on calculations made from three text samples that are 100-150 words each. As a rule, these calculations include factors such as the following:

- ▶ number of sentences in the passage
- ▶ number of syllables
- ▶ number of multi-syllabic words (three or more syllables)

Formulas vary in grade indication depending upon the level of comprehension the formulas assume. For example, the SMOG² formula, which is frequently used to indicate the difficulty level of upper-grade texts, assumes a 90-100% comprehension level. In comparison, the Fry³ formula assumes about a 75% comprehension level. The formulas assume that a long sentence or a three-syllable word is more difficult than a short sentence or a single-syllable word. However, consider the following sentence examples:

Example 1: It is little. It is red. It is round.
It is a ball.

Example 2: It is a little, red, round ball.

While reading formulas would score Example 1 as easier to read and Example 2 as harder to read, in actuality the second example is much easier for readers than the first one. In Example 2, the combination of words makes the information much more coherent, although the



readability formulas would calculate the sentence as more difficult.

Readability formulas also assume that multi-syllabic words are more difficult than one-syllable words. This assumption in readability formulas is misleading. For example, the words *America* and *American* have four syllables, yet trying to convey these concepts in words of lesser syllables would be confusing, complicated, and less comprehensible. Words such as *America* and *American*, while multi-syllabic words, are readily known by most readers.

¹ The information in this report is based on and adapted from a study conducted by Dr. Norma Inabinette in 2005 and a subsequent unpublished report of her findings.

² See Sample Readability Chart in Appendix A.

³ See Sample Readability Chart in Appendix A.

Readability Formulas Ignore Many Factors

While readability formulas are useful in determining an *approximate* level of reading difficulty, they do not consider many factors that make texts reader-friendly. For example, readability formulas do not consider the following features:

Physical Features of the Text

- ▶ Whether the columns are reasonable with large margins and ample white space.
- ▶ If the text is in a font that is large enough for comfortable visual input and clear enough to avoid undue eyestrain.
- ▶ If the paper on which the text appears is of a high quality that allows the print to remain crisp without blending into the paper.

Text Content

- ▶ Whether the text has visual interest with colorful and attractive pictures, maps, tables, diagrams, and other visuals that aid in reading comprehension.
- ▶ Whether the text has useful sections such as a table of contents, appendixes, indexes, glossary, and other reader aids.
- ▶ Whether the text includes a statement of the main idea at the beginning of each text section and features headings that help the reader identify the content and organization.
- ▶ Whether the text contains information that will allow the reader to identify with the text, e.g., references to cultural groups, gender, age, and experiences.
- ▶ Whether the text introduces new concepts slowly enough to avoid frustrating or confusing readers.

- ▶ If the text includes definitions on the page or context clues to reveal the meanings of difficult or unfamiliar vocabulary.
- ▶ How sentences relate to one another and whether the text features a clear and coherent writing style with ideas well-developed in a sensible sequence and sensitive handling of the subtleties of language, e.g., clear pronoun referents, explicit comparing and contrasting, and organized listings or information.
- ▶ Whether the text emphasizes information based on prior learning so that the new learning is comprehensible.
- ▶ If the text content refers to practical, real-life situations to which students can relate.
- ▶ If the text includes summaries that review and emphasize the critical information in the text.

Environment in Which Text Is Used

- ▶ Whether the text is used by teachers who will motivate and instill interest in the topic.



After 40 years in education, I can honestly say that these are some of the **finest materials** for children who are second language learners ... the way in which the material is presented makes it ... **motivating for even the reluctant reader.**



– Dr. Norma Inabinette, Reading Specialist

Readability Formulas and the *Explore*® Textbooks


The *Explore* textbooks feature text appropriate for students in grades 5-12 and adults. Specific reading levels can be assigned to text selections based on the Flesch-Kincaid formula and/or Lexile Framework,⁴ two commonly used tools to measure a text's reading level. However, readability formulas do not acknowledge ways in which text is rendered more readable such as through text presentation, text context, vocabulary support, and visual support. The following is a summary of those elements of text that make the *Explore* textbooks easily readable whatever the readability formula grade level may indicate.

Special Book Features: The books contain a simple table of contents that is easy to read. Also included are appendix sections that include a glossary with text-specific definitions, parts of speech, and pronunciation guide. The books also contain an easy-to-read index. Each chapter in the books is arranged in exactly the same way, with a two-page spread to introduce the chapter, followed by a map page, and then the content. Each page includes a short text selection that begins and ends on the page. Titles and headings are intriguing, and subheadings are in large print and clearly marked in bold type.

CHAPTER 2
The Rise and Fall of the Roman Empire

ERA: Early Civilizations
PLACE: Rome
PEOPLE: Julius Caesar, Augustus, Diocletian, Constantine, and the Roman people
THEME: Ambition—a strong desire to achieve something; a will to succeed

CHAPTER FOCUS: Rome was the largest and most powerful empire in the ancient Mediterranean world. Many ideas came from the Romans. The Roman system of law and government became a model for Western civilization.

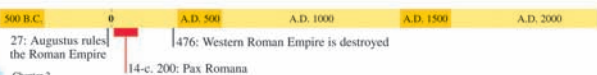


LINK

As you read in the last chapter, archaeological evidence and written documents tell us about people who lived in prehistoric and ancient times. Prehistoric people lived as hunters and gatherers for thousands of years. About 12,000 years ago, some people learned to farm and began to settle down. Villages and towns began to appear. Some villages and towns developed into great civilizations.

In this chapter, you will read about the largest and most powerful civilization in the ancient Mediterranean world—Rome. Many ideas came from the Romans, including ideas about art and architecture. Most importantly, the Roman system of law and government became a model for Western civilization. You will read about a new religion, Christianity, that spread throughout the Roman Empire. Finally, you will read how the power of the Roman Empire was weakened by fighting among different groups within the empire, by economic problems, and by attacks from Germanic people. As you read this chapter, think about how people of various cultures benefit from their contact with one another.

This watercolor painting is called "Hypothetical Reconstruction of the Roman Forum in Imperial Times." It shows what the Roman Forum, Rome's main government offices, might have looked like during the time of the Roman Empire. This style of architecture—called the classical style—has had a strong influence on architecture throughout the Western world.



16 Chapter 2

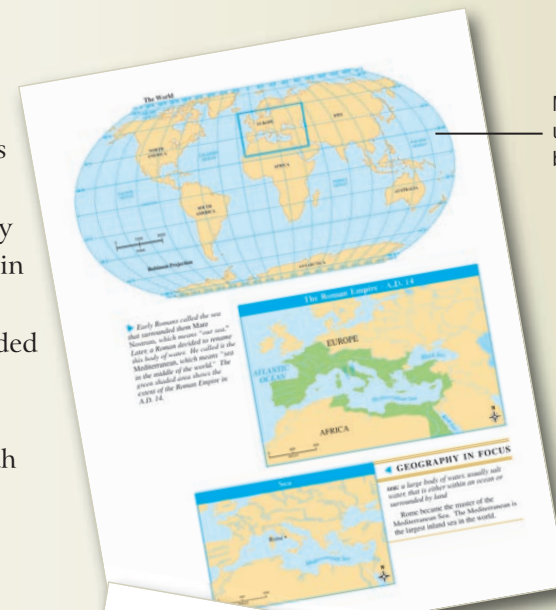
Chapter 2 17

⁴ The Lexile Framework is an educational tool designed to measure reading comprehension and text difficulty by placing readers and text on the same scale. Although Lexiles do not equate to grade levels, the measure that a student receives helps connect the reader with a database of books, periodicals and other resources optimal for the individual's reading success. Source: <http://www.tea.state.tx.us/curriculum/lexile/>

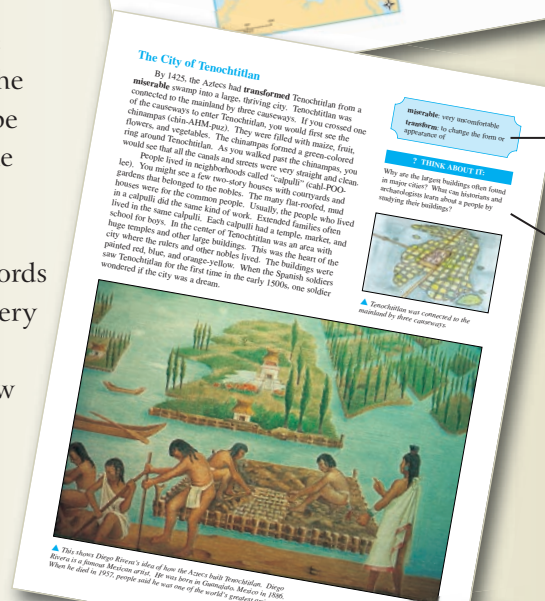
Text Presentation: The print in each book is clear, for comfortable eye movement, and has spacing that makes the text very readable. Margins are large and the quality of the paper is high. The text is not overwhelmed by the visuals that amplify it. Headings and subheadings are color-coded and in larger print than the text. The passages are short (often no more than 100-125 words) and surrounded by supplementary and support material such as maps, pictures, diagrams, and critical thinking questions. Many ethnic groups are included in both the text and the visuals so that students can easily identify with the material.

Vocabulary: The vocabulary incorporated in the books is appropriate for the target audience and the content of the text. Difficult words are in bold type and defined on the page or defined in context. The visuals on the page reinforce the new vocabulary students are reading in the text. The vocabulary builds upon itself throughout the books so that words are often repeated in order to assure student mastery of them. Many of the new words are image words that form pictures in the reader's mind. Only a few new words are targeted in each section.

Visual Support: Each chapter includes visuals that help the reader place the content in perspective. Pictures, graphs, maps, charts, boxes of significant information, and questions are all clearly labeled and attractively placed. The headings are in large type and colored to draw the reader's attention. Illustrations are extremely appealing and varied to include things like original photographs, copies of posters, pencil drawings, and beautifully illustrated renditions of documents such as the Declaration of Independence. There is a great deal of white space on each page that makes the illustrations more dramatic. Visuals include things that would intrigue a reader at this level such as photographs of battle scenes, pictures about a village life and agricultural techniques, various foods, and illustrations of many different cultures. These visuals enhance reading comprehension and make the material very appealing to students in grades 5-12 and adults.

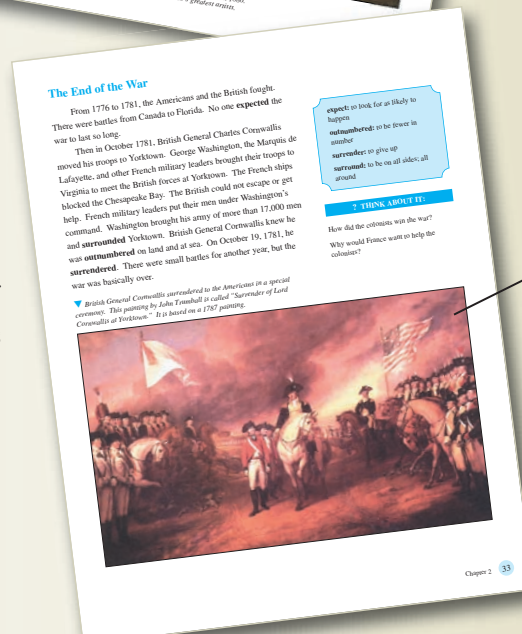


Maps help students understand the locations being studied.



New vocabulary words are defined in the margins.

Critical thinking questions encourage students to make connections and share their opinions.



Stunning visuals are linked to the text, helping to provide context to the reading.

Text Content: The text has a recent publication date with current information included. The topics included are extremely interesting. The information is presented so that readers in grades 5-12 and adults can relate to the content.

Writing Genres and Style: The text includes many different writing genres, including poetry, news reports, biographies, cartoons, myths and legends, short stories, plays, reader's theaters, and nonfiction articles, with topics that greatly appeal to readers at the middle school and high school grade levels. Consistently, the text is written in a very straightforward manner. The sentences are clear and follow a declarative pattern. Adverbs and adjectives are included to paint a picture without distracting the reader from the basic theme of the section. Illustrations of the concept are included and then repeated in another way to ensure comprehension.



▲ The Aztecs built a powerful empire in the Valley of Mexico. This painting shows how their capital at Tenochtitlan might have looked.

Summary—The Aztecs

The Aztecs were latecomers to the Valley of Mexico. They finally settled on a swampy island no one else wanted. The Aztecs believed one of their gods, Huitzilopochtli, had led them to the place where they built the city of Tenochtitlan. The Aztecs borrowed ideas from their neighbors and also from earlier Mesoamerican people. They developed a system of agriculture that helped feed a large, growing population. They built large temples and other buildings. They conducted religious rituals and offered human sacrifices to honor their gods. Under Ahuizotl's leadership, the Aztecs conquered territory throughout central and southern Mexico. In 1521, however, Hernando Cortés led an army of Spaniards to defeat the Aztecs. The Spanish took over the land and treated the Aztecs as their subjects. The Aztec civilization, defeated by battle and disease, was destroyed. Today, most of the people of Mexico speak Spanish. However, the Mexican flag and other symbols of Mexico include the eagle and snake on top of a cactus.

In the next chapter, you will read about a civilization that developed in South America. You will learn how the Inca empire became the largest empire in the Americas. The Inca had excellent building and engineering skills. You also will read about Cuzco, the capital city of the Inca empire.

7 THINK ABOUT IT:

The Aztecs created a powerful empire in Mesoamerica. What do you think is their most important accomplishment? Explain your answer.

Each chapter ends with a summary, bringing the reading to a close.

Most selections begin with opening sentences that direct the reader's attention to the content and pique the reader's interest. Referents are clear and subject/noun relationships are obvious. Ideas in the *Explore* books have a logical sequence so that information presented flows from one idea to another without the reader experiencing any difficulty in following the content. Each reading selection ends with a conclusion that brings the reading to a comfortable close. For example, a section on the War for Independence ends with a summary of who won the war and the critical factors that ensured this success. When reading a chapter about the Aztecs, the reader will know what the Aztec civilization was like at its height, after the coming of the Spanish, and today. This provides closure in the reader's mind.

ROLES:

- * SCHERHAZADE
- * QUASIM
- * BAND OF THIEVES
- * ALL BABA
- * MURGANA
- * SOUND EFFECTS
- * HEAD THIEF
- * ALL

REMEMBER: Practice reading the script. When the script says "ALL," everyone in the class joins in the reading. Read with expression!

SCHERHAZADE: This story is about Ali Baba, a poor but honest woodcutter. One day, while gathering wood in the forest, Ali Baba heard a noise.

SOUND EFFECTS: *(Make a noise like men coming through the forest.)*

SCHERHAZADE: Fearing danger, he hid behind an old tree. He pecked out from his hiding place to see what was making the sounds.

ALL: What was it? Was it a wild animal?

SCHERHAZADE: No, it was something more terrifying—a band of 40 thieves! Ali Baba began to say his prayers.

ALI BABA: Please, Allah. Save me from these thieves!

SCHERHAZADE: Allah must have been looking kindly on Ali Baba because they did not see him. They were more interested in something else. Ali Baba watched the thieves enter in front of the cave. The leader shouted,

HEAD THIEF: Open Sesame!

ALL: Then what happened?

SCHERHAZADE: Then the cave door opened.

HEAD THIEF: Come on, thieves. Let's go inside.

BAND OF THIEVES: Yes, let's get some gold, silver, pearls, rubies, and

SCHERHAZADE: After a while, the band of thieves left. They carried heavy bags on their shoulders. Ali Baba waited until the forest was quiet.

ALI BABA: I stood in front of the cave and said, "Open Sesame." The cave and I couldn't believe the treasure I saw. I stuffed my pockets with gold coins. Then I ran home.

SCHERHAZADE: Just then, the slave to the cave opened. At first, Quasim was happy. Then he saw who had opened the cave door.

QUASIM: Oh, no! No! No! No!

SCHERHAZADE: It was the band of 40 thieves. And they looked very angry.

SCHERHAZADE: The scolding girl, Murgana, heard the thief talking. She ran to Ali Baba's home.

MURGANA: Ali Baba, you must run away. The thieves will come after you!

ALI BABA: Thank you for helping me. Don't worry. I'll think of something.

SCHERHAZADE: And he did.

MURGANA: Ali Baba and I got ever after.

ALI: Really? Is that the end of the story?

SCHERHAZADE: Well, there's a little more, but I'm tired now. I'll finish tomorrow. ☺

Students are exposed to different writing genres such as this reader's theater.

Sources:

Klare, G.R. (1976). "A Second Look at the Validity of Readability Formulas." *Journal of Reading Behavior*, 8(2), 129-152.

Zakaluk, B.L., & S.J. Samuels (Eds.). (1988). *Readability: Its Past, Present, & Future*. Newark, DE: The International Reading Association.

Appendix A: Sample Readability Chart⁵

Text title	Page number and title of section	Number of sentences	Number of syllables	Number of multi-syllabic words	Reading-level section FRY*	Three-passage average FRY	Reading-level Section SMOG	Three-passage average SMOG
<i>Explore World History</i> (Student Textbook)	116 An Island in a Swamp	6.5	135	5	7 th		6 th	
	167 China Under Ming Rule	8.6	160	11	7 th		7 th	
	205 Emperor of the Romans	5.6	145	18	8 th	146/6.9 7 th	7 th	8.8
<i>People and Stories in World History: A Historical Anthology</i> (Student Anthology)	88 Charles Martel Rises to Power	7	152	16	7 ^{th*}		7 th	
	233 Basho—Haiku Master	7.2	134	13	6 th		6 th	
	368 A New Bed for Sailors!	8.8	151	11	6 th	145/7.6 7 th	6 th	6.6



The FRY formula gives very general levels without distinguishing between lower-grade or upper-grade level. For example, materials can be barely over the 7th grade reading level and read 7th grade, while others can be nearly to the 8th grade reading level and still read 7th grade.



Explore World History was my first opportunity to discover a text that was language-sensitive and all-inclusive. The text allowed students to

construct meaning from their reading,
and therefore enabled me to teach reading and writing through content.



Lisa Tess, 7th Grade World History Teacher
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⁵ Dr. Norma Inabinette created this readability chart in 2005 based on her analysis of the *Explore* textbooks, including the *Explore* historical anthologies.

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