Supplemental Information for Appendix A of the Common Core State Standards for English Language Arts and Literacy: New Research on Text Complexity

I. Summary Introduction

Appendix A of the Common Core State Standards (hereafter CCSS) contains a review of the research stressing the importance of being able to read complex text for success in college and career. The research shows that while the complexity of reading demands for college, career, and citizenship have held steady or risen over the past half century, the complexity of texts students are exposed to has steadily decreased in that same interval. In order to address this gap, the CCSS emphasize increasing the complexity of texts students read as a key element in improving reading comprehension.

The importance of text complexity to student success had been known for many years prior to the release of the CCSS, but its release spurred subsequent research that holds implications for how the CCSS define and measure text complexity. As a result of new research on the quantitative dimensions of text complexity called for at the time of the standards' release[1], this report expands upon the three-part model outlined in Appendix A of the CCSS in ELA/Literacy that blends quantitative and qualitative measures of text complexity with reader and task considerations. It also presents new field-tested tools for helping educators assess the qualitative features of text complexity.

II. New Findings Regarding the Quantitative Dimension of Text Complexity

The quantitative dimension of text complexity refers to those aspects—such as word frequency, sentence length, and text cohesion (to name just three)—that are difficult for a human reader to evaluate when examining a text. These factors are more efficiently measured by computer programs. The creators of several of these quantitative measures volunteered to take part in a research study comparing the different measurement systems against one another. The goal of the study was to provide state of the science information regarding the variety of ways text complexity can be measured quantitatively and to encourage the development of text complexity tools that are valid, transparent, user friendly, and reliable.[2] The six different computer programs that factored in the research study are briefly described below:

[1] The full report, *Measures of Text Difficulty*, and other resources, can be accessed on www.achievethecore.org/text-complexity.
[2] The following list of participants in the research study is not an exhaustive list of programs that exist for the purpose of measuring text complexity, nor is their inclusion intended as an endorsement of one method or program over another.

ATOS by Renaissance Learning

ATOS incorporates two formulas: ATOS for Text (which can be applied to virtually any text sample, including speeches, plays, and articles) and ATOS for Books. Both formulas take into account three variables: words per sentence, average grade level of words (established via the Graded Vocabulary List), and characters per word.

Degrees of Reading Power® (DRP®) by Questar Assessment, Inc.

The DRP Analyzer employs a derivation of a Bormuth mean cloze readability formula based on three measureable features of text: word length, sentence length, and word familiarity. DRP text difficulty is expressed in DRP units on a continuous scale with a theoretical range from 0 to 100. In practice, commonly encountered English text ranges from about 25 to 85 DRP units, with higher values representing more difficult text. Both the measurement of students' reading ability and the readability of instructional materials are reported on the same DRP scale.

Flesch-Kincaid (public domain)

Like many of the non-proprietary formulas for measuring the readability of various types of texts, the widely used Flesch-Kincaid Grade Level test considers two factors: words and sentences. In this case, Flesch-Kincaid uses word and sentence length as proxies for semantic and syntactic complexity respectively (i.e., proxies for vocabulary difficulty and sentence structure).

The Lexile® Framework For Reading by MetaMetrics

A Lexile measure represents both the complexity of a text, such as a book or article, and an individual's reading ability. Lexile® measures include the variables of word frequency and sentence length. Lexile® measures are expressed as numeric measures followed by an "L" (for example, 850L), which are then placed on the Lexile® scale for measuring reader ability and text complexity (ranging from below 200L for beginning readers and beginning-reader materials to above 1600L for advanced readers and materials).

Reading Maturity by Pearson Education

The Pearson Reading Maturity Metric uses the computational language model Latent Semantic Analysis (LSA) to estimate how much language experience is required to achieve adult knowledge of the meaning of each word, sentence, and paragraph in a text. It combines the Word Maturity measure with other computational linguistic variables such as perplexity, sentence length, and semantic coherence metrics to determine the overall difficulty and complexity of the language used in the text.

SourceRater by Educational Testing Service

SourceRater employs a variety of natural language processing techniques to extract evidence of text standing relative to eight construct-relevant dimensions of text variation: syntactic complexity, vocabulary difficulty, level of abstractness, referential cohesion, connective cohesion, degree of academic orientation, degree of narrative orientation, and paragraph structure. Resulting evidence about text complexity is accumulated via three separate regression models: one optimized for application to informational texts, one optimized for application to literary texts, and one optimized for application to mixed texts.

Easability Indicator by Coh-Metrix

One additional program—the Coh-Metrix Easability Assessor, developed at the University of Memphis and Arizona State University—factored in the research study but was not included in the

cross analysis. It analyzes the ease or difficulty of texts on five different dimensions: narrativity, syntactic simplicity, word concreteness, referential cohesion, and deep cohesion.[3] This measure was not included in the cross analysis because it does not generate a single quantitative determination of text complexity, but it does have use as a tool to help evaluate text systematically. The Coh-Metrix Easability Assessor creates a profile that offers information regarding the aforementioned features of a text and analyzes how challenging or supportive those features might be in student comprehension of the material.

The research that has yielded additional information and validated these text measurement tools was led by Jessica Nelson of Carnegie Mellon University, Charles Perfetti of University of Pittsburgh and David and Meredith Liben of Student Achievement Partners (in association with Susan Pimentel, lead author of the CCSS for ELA). It had two components: first, all the developers of quantitative tools agreed to compare the ability of each text analyzer to predict the difficulty of text passages as measured by student performances on standardized tests. Second, they agreed to test the tools' ability to predict expert judgment regarding grade placement of texts and educator evaluations of text complexity by examining a wide variety of text types selected for a wide variety of purposes. The first was measured by comparing student results in norming data on two national standardized reading assessments to the difficulty predicted by the text analyzer measures. The second set of data evaluated how well each text analyzer predicted educator judgment of grade level placement and how well they matched the complexity band placements used for the Appendix B texts of the CCSS. In the final phase of the work, the developers agreed to place their tools on a common scale aligned with the demands of college readiness. This allows these measures to be used with confidence when placing texts within grade bands, as the common scale ensures that each will yield equivalent complexity staircases for reaching college and career readiness levels of text complexity.[4]

The major comparability finding of the research was that all of the quantitative metrics were reliably and often highly correlated with grade level and student performance based measures of text difficulty across a variety of text sets and reference measures.[5] No one of the quantitative measures performed significantly differently than the others in predicting student outcomes.[6] While there is variance between and among the measures about where they place any single text, they all climb reliably—though differently—up the text complexity ladder to college and career readiness. Choosing any one of the text-analyzer tools from second grade through high school will provide a scale by which to rate text complexity over a student's career, culminating in levels that match college and career readiness.

In addition, the research produced a new common scale for cross comparisons of the quantitative tools that were part of the study, allowing users to choose one measure or another to generate parallel

[3] Narrativity measures whether the passage is story-like and includes events and characters. Syntactic simplicity refers to the ease of the sentence syntax. Word concreteness measures the degree to which words in the passage are imaginable versus abstract. Referential cohesion is the overlap between sentences with respect to major words (nouns, verbs, adjectives). Deep cohesion measures causal, spatial and temporal relations between events, actions, goals, and states.

[4] As a condition of participating, each developer also committed to offering (a) transparency in revealing both the text features it analyzed and the general means of analysis, (b) a program that calibrated text difficulty by grade or band level to match the Common Core Standards' expectations regarding measuring text complexity, and (c) a version of its quantitative tool that could be adapted for public access at the individual user level.

[5] When running the passages through Flesch-Kincaid measures, researchers found no single answer for what the Flesch-Kincaid score was for a specific text. The score depended on which version of the Flesch-Kincaid program was run and how that particular program counted syllables, sentence length, and the like. Because Flesch-Kincaid has no 'caretaker' that oversees or maintains the formula, researchers had to make decisions about how to count syllables and sentence length as they programmed the formula to get a 'read' on text(s).

[6] Some of the quantitative measures aligned more closely with human judgment regarding where to situate a text within a complexity band, though these measures did not better predict student performance.

complexity readings for texts as students move through their K-12 school careers. This common scale is anchored by the complexity of texts representative of those required in typical first-year credit-bearing college courses and in workforce training programs. Each of the measures has realigned its ranges to match the Standards' text complexity grade bands and has adjusted upward its trajectory of reading comprehension development through the grades to indicate that all students should be reading at the college and career readiness level by no later than the end of high school.

Figure 1: Updated Text Complexity Grade Bands and Associated Ranges from Multiple Measures[7]

Common Core Band	ATOS	Degrees of Reading Power®	Flesch-Kincaid[8]	The Lexile Framework®	Reading Maturity	SourceRater
2nd – 3rd	2.75 – 5.14	42 – 54	1.98 – 5.34	420 – 820	3.53 – 6.13	0.05 – 2.48
4th – 5th	4.97 – 7.03	52 – 60	4.51 – 7.73	740 – 1010	5.42 – 7.92	0.84 – 5.75
6th – 8th	7.00 – 9.98	57 – 67	6.51 – 10.34	925 – 1185	7.04 – 9.57	4.11 – 10.66
9th – 10th	9.67 – 12.01	62 – 72	8.32 – 12.12	1050 – 1335	8.41 – 10.81	9.02 – 13.93
11th – CCR	11.20 – 14.10	67 – 74	10.34 – 14.2	1185 – 1385	9.57 – 12.00	12.30 – 14.50

III. New Tools for Evaluating the Qualitative Dimension of Text Complexity

Simultaneously with the work on quantitative metrics, additional fieldwork was performed with the goal of helping educators better judge the qualitative features of text complexity. In the CCSS, qualitative measures serve as a necessary complement to quantitative measures, which cannot capture all of the elements that make a text easy or challenging to read and are not equally successful in rating the complexity of all categories of text.

Focus groups of teachers from a variety of CCSS adoption states, and representing a wide variety of teaching backgrounds, used the qualitative features first identified in Appendix A to develop and refine an evaluation tool that offers teachers and others greater guidance in rating texts. The evaluation tool views the four qualitative factors identified in Appendix A as lying on continua of difficulty rather than as a succession of discrete "stages" in text complexity. The qualitative factors run from easy (left-hand side) to difficult (right-hand side). Few (if any) authentic texts will be at the low or high ends on all of these measures, and some elements of the dimensions are better suited to literary or to informational texts. Below are brief descriptions of the different qualitative dimensions:

[7] The band levels themselves have been expanded slightly over the original CCSS scale that appears in Appendix A at both the top and bottom of each band to provide for a more modulated climb toward college and career readiness and offer slightly more overlap between bands. The wider band width allows more flexibility in the younger grades where students enter school with widely varied preparation levels. This change was provided in response to feedback received since publication of the original scale (published in terms of the Lexile® metric) in Appendix A.
[8] Since Flesch-Kincaid has no 'caretaker' that oversees or maintains the formula, the research leads worked to bring the measure in line with college and career readiness levels of text complexity based on the version of the formula used by Coh-Metrix.

(1) *Structure.* Texts of low complexity tend to have simple, well-marked, and conventional structures, whereas texts of high complexity tend to have complex, implicit, and (in literary texts) unconventional structures. Simple literary texts tend to relate events in chronological order, while complex literary texts make more frequent use of flashbacks, flash-forwards, multiple points of view and other manipulations of time and sequence. Simple informational texts are likely not to deviate from the conventions of common genres and subgenres, while complex informational texts might if they are conforming to the norms and conventions of a specific discipline or if they contain a variety of structures (as an academic textbook or history book might). Graphics tend to be simple and either unnecessary or merely supplementary to the meaning of texts of low complexity, whereas texts of high complexity tend to have similarly complex graphics that provide an independent source of information and are essential to understanding a text. (Note that many books for the youngest students rely heavily on graphics to convey meaning and are an exception to the above generalization.)

(2) *Language Conventionality and Clarity.* Texts that rely on literal, clear, contemporary, and conversational language tend to be easier to read than texts that rely on figurative, ironic, ambiguous, purposefully misleading, archaic, or otherwise unfamiliar language (such as general academic and domain-specific vocabulary).

(3) *Knowledge Demands.* Texts that make few assumptions about the extent of readers' life experiences and the depth of their cultural/literary and content/discipline knowledge are generally less complex than are texts that make many assumptions in one or more of those areas.

(4) *Levels of Meaning (literary texts) or Purpose (informational texts).* Literary texts with a single level of meaning tend to be easier to read than literary texts with multiple levels of meaning (such as satires, in which the author's literal message is intentionally at odds with his or her underlying message). Similarly, informational texts with an explicitly stated purpose are generally easier to comprehend than informational texts with an implicit, hidden, or obscure purpose.

Figure 2: Qualitative Dimensions of Text Complexity

Category	Notes and comments on text, support for placement in this band	Where to place within the band?				
		Beginning of lower grade	End of lower grade	Beginning of higher grade	End of higher grade	**NOT suited to band**
Structure (both story structure or form of piece)		◆———				——➤
Language Clarity and Conventions (including vocabulary load)		◆———				——➤
Knowledge Demands (life, content, cultural/literary)		◆———				——➤
Levels of Meaning/ Purpose		◆———				——➤
Overall placement	**Justification**	◆———				——➤

IV. Reader and Task Considerations and the Role of Teachers

While the research noted above impacts the quantitative and qualitative measures of text complexity, the third element of the three-part model for measuring text complexity—reader and task considerations—remains untouched. While the quantitative and qualitative measures focus on the inherent complexity of the text, they are balanced in the CCSS' model by the expectation that educators will employ professional judgment to match texts to particular tasks or classes of students. Numerous considerations go into such matching. For example, harder texts may be appropriate for highly knowledgeable or skilled readers, who are often willing to put in the extra effort required to read harder texts that tell a story or contain complex information. Students who have a great deal of interest or motivation in the content are also likely to handle more complex texts.

The RAND Reading Study Group, identified in the 2002 report *Reading for Understanding,* also named important task-related variables, including the reader's purpose (which might shift over the course of reading), "the type of reading being done, such as skimming (getting the gist of the text) or studying (reading the text with the intent of retaining the information for a period of time)," and the intended outcome, which could include "an increase in knowledge, a solution to some real-world problem, and/or engagement with the text."[9] Teachers employing their professional judgment, experience, and knowledge of their students and their subject are best situated to make such appraisals.

V. The Issue of Text Quality and Coherence in Text Selection

Selecting texts for student reading should not only depend on text complexity but also on considerations of quality and coherence. The Common Core State Standards emphasize that "[t]o become college and career ready, students must grapple with works of exceptional craft and thought whose range extends across genres, cultures, and centuries. Such works offer profound insights into the human condition and serve as models for students' own thinking and writing."[10] In addition to choosing high quality texts, it is also recommended that texts be selected to build coherent knowledge within grades and across grades. For example, the Common Core State Standards illustrate a progression of selected texts across grades K-5 that systematically build knowledge regarding the human body.[11] Considerations of quality and coherence should always be at play when selecting texts.

VI. Key Considerations in Implementing Text Complexity

The tools for measuring text complexity are at once useful and imperfect. Each of the tools described above—quantitative and qualitative—has its limitations, and none is completely accurate. The question remains as to how to best integrate quantitative measures with qualitative measures when locating texts at a grade level. The fact that the quantitative measures operate in bands rather than specific grades gives room for both qualitative and quantitative factors to work in concert when situating texts. The following recommendations that play to the strengths of each type of tool—quantitative and qualitative—are offered as guidance in selecting and placing texts:

1. *It is recommended that quantitative measures be used to locate a text within a grade band because they measure dimensions of text complexity—such as word frequency, sentence length, and text cohesion (to name just three)—that are difficult for a human reader to evaluate when examining a text.* In high stakes settings, it is recommended that two or more quantitative measures be used to locate a text within a grade band for a most reliable indicator that text falls within the complexity range for that band.

2. *It is further recommended that qualitative measures be used to then locate a text in a specific grade*. Qualitative measures are neither grade nor grade band specific, nor anchored in college and career readiness levels. Once a text is located within a band with quantitative measures, they can be used

[9] RAND Reading Study Group. (2002). *Reading for understanding: Toward an R&D program in reading comprehension.* Santa Monica, CA: RAND. The quoted text appears in pages xiii–xvi.
[10] CCSS, pg. 35.
[11] CCSS, pg. 33.

to measure other important aspects of texts—such as levels of meaning or purpose, structure, language conventionality and clarity, and knowledge demands—to further locate a text at the high or low end of the band or to a specific grade. For example, one of the quantitative measures could be used to determine that a text falls within the grades 6-8 band level, and qualitative measures could then be used to determine whether the text is best placed in grade 6, 7, or 8.

3. *There will be exceptions to using quantitative measures to identify the grade band; sometimes qualitative considerations will trump quantitative measures in identifying the grade band of a text, particularly with narrative fiction in later grades.* Research showed more disagreement among the quantitative measures when applied to narrative fiction in higher complexity bands than with informational text or texts in lower grade bands. Given this, preference should sometimes be given to qualitative measures when evaluating narrative fiction intended for students in grade 6 and above. For example, some widely used quantitative measures rate the Pulitzer Prize-winning novel *Grapes of Wrath* as appropriate for grades 2–3. This counterintuitive result emerges because works such as *Grapes* often express complex ideas or mature themes in relatively commonplace language (familiar words and simple syntax), especially in the form of dialogue that mimics everyday speech. Such quantitative exceptions for narrative fiction should be carefully considered, and exceptions should be rarely exercised with other kinds of text. It is critical that in every ELA classroom students have adequate practice with literary non-fiction that falls within the quantitative band for that grade level. To maintain overall comparability in expectations and exposure for students, the overwhelming majority of texts that students read in a given year should fall within the quantitative range for that band.

4. *Certain measures are less valid or not applicable for certain kinds of texts.* Until such time as quantitative tools for capturing the difficulty of poetry and drama are developed, determining whether a poem or play is appropriately complex for a given grade or grade band will necessarily be a matter of qualitative assessment meshed with reader-task considerations. Furthermore, texts for kindergarten and grade 1 are still resistant to quantitative analysis, as they often contain difficult-to-assess features designed to aid early readers in acquiring written language. (The Standards' Appendix B poetry and K–1 text exemplars were placed into grade bands by expert teachers drawing on classroom experience.)

VII. The Model in Action: Sample Annotated Reading Text

The following example demonstrates how quantitative and qualitative measures of text complexity can be used along with reader and task considerations to make informed decisions about whether a particular text is an appropriate challenge for particular students. The case below illustrates some of the intricacies that can arise when multiple measures are used to assess text complexity.

Example: *The Longitude Prize* (Grades 9–10 Text Complexity Band)

Excerpt

From Chapter 1: "A Most Terrible Sea"

At six in the morning I was awaked by a great shock, and a confused noise of the men on deck. I ran up, thinking some ship had run foul of us, for by my own reckoning, and that of every other person in the ship, we were at least thirty-five leagues distant from land; but, before I could reach the quarter-deck, the ship gave a great stroke upon the ground, and the sea broke over her. Just after this I could perceive the land, rocky, rugged and uneven, about two cables' length from us . . . the masts soon went overboard, carrying some men with them . . . notwithstanding a most terrible sea, one of the [lifeboats] was launched, and eight of the best men jumped into her; but she had scarcely got to the ship's stern when she was hurled to the bottom, and every soul in her perished. The rest of the boats were soon washed to pieces on the deck. We then made a raft . . . and waited with resignation for Providence to assist us.

—From an account of the wreck of HMS *Litchfield* off the coast of North Africa, 1758

The *Litchfield* came to grief because no one aboard knew where they were. As the narrator tells us, by his own reckoning and that of everyone else they were supposed to be thirty-five leagues, about a hundred miles, from land. The word "reckoning" was short for "dead reckoning"—the system used by ships at sea to keep track of their position, meaning their longitude and latitude. It was an intricate system, a craft, and like every other craft involved the mastery of certain tools, in this case such instruments as compass, hourglass, and quadrant. It was an art as well.

Latitude, the north-south position, had always been the navigator's faithful guide. Even in ancient times, a Greek or Roman sailor could tell how far north of the equator he was by observing the North Star's height above the horizon, or the sun's at noon. This could be done without instruments, trusting in experience and the naked eye, although it is believed that an ancestor of the quadrant called the astrolabe—"star-measurer"—was known to the ancients, and used by them to measure the angular height of the sun or a star above the horizon.

Phoenicians, Greeks, and Romans tended to sail along the coasts and were rarely out of sight of land. As later navigators left the safety of the Mediterranean to plunge into the vast Atlantic—far from shore, and from the shorebirds that led them to it—they still had the sun and the North Star. And these enabled them to follow imagined parallel lines of latitude that circle the globe. Following a line of latitude—"sailing the parallel"—kept a ship on a steady east-west course. Christopher Columbus, who sailed the parallel in 1492, held his ships on such a safe course, west and west again, straight on toward Asia. When they came across an island off the coast of what would later be called America, Columbus compelled his crew to sign an affidavit stating that this island was no island but mainland Asia.

Dash, Joan. *The Longitude Prize*.
New York: Farrar, Straus and Giroux (2000).

Figure 3: Annotation of *The Longitude Prize*

Qualitative Measures

Structure
The text is moderately complex and subtle in structure. Although the text may appear at first glance to be a conventional narrative, Dash mainly uses narrative elements in the service of illustrating historical and technical points. The long quote adds to the structural challenge.

Language Conventionality and Clarity
Language is used literally and is relatively clear, but numerous archaic, domain-specific, and otherwise unfamiliar terms are introduced in the course of citing primary historical sources and discussing the craft, art, and science of navigation. The quote further adds an archaic language burden.

Knowledge Demands
The text assumes relatively little prior knowledge regarding seafaring and navigation, but some general sense of the concepts of latitude and longitude, the nature of sailing ships, and the historical circumstances that promoted exploration and trade is useful to comprehending the text.

Purpose
The single, relatively clear purpose of the text (not fully apparent in the excerpt but signaled by the title) is to recount the discovery of the concept of longitude. But this is not readily apparent from the excerpt.

Quantitative Measures

Various readability measures of *The Longitude Prize* are largely in agreement that the text is appropriate for the grades 9–10 text complexity band. The Coh-Metrix analysis notes that the text is primarily informational in structure despite the narrative opening. (Recall from "Why Text Complexity Matters," above, that research indicates that informational texts are generally harder to read than narratives.) While the text relies on concrete language and goes to some effort to connect central ideas for the reader, it also contains complex syntax and few explicit connections between words and sentences.

Reader-Task Considerations

These are to be determined locally with reference to such variables as a student's motivation, knowledge, and experiences as well as purpose and the complexity of the task assigned and the questions posed.

Recommended Placement

Various quantitative measurements place *The Longitude Prize* into the grades 9–10 text complexity band; the qualitative analysis would indicate there are enough complex features to warrant its placement in the tenth grade.

ATOS: 10.5
DRP®: 66
Lexile®: 1300L
Reading Maturity: 8.67
SourceRater: 10.7

COMMON CORE STATE STANDARDS FOR

English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects

Appendix A:

Research Supporting Key Elements of the Standards

Glossary of Key Terms

Reading

One of the key requirements of the Common Core State Standards for Reading is that all students must be able to comprehend texts of steadily increasing complexity as they progress through school. By the time they complete the core, students must be able to read and comprehend independently and proficiently the kinds of complex texts commonly found in college and careers. The first part of this section makes a research-based case for why the complexity of what students read matters. In brief, while reading demands in college, workforce training programs, and life in general have held steady or increased over the last half century, K–12 texts have actually declined in sophistication, and relatively little attention has been paid to students' ability to read complex texts independently. These conditions have left a serious gap between many high school seniors' reading ability and the reading requirements they will face after graduation. The second part of this section addresses how text complexity can be measured and made a regular part of instruction. It introduces a three-part model that blends qualitative and quantitative measures of text complexity with reader and task considerations. The section concludes with three annotated examples showing how the model can be used to assess the complexity of various kinds of texts appropriate for different grade levels.

Why Text Complexity Matters

In 2006, ACT, Inc., released a report called *Reading Between the Lines* that showed which skills differentiated those students who equaled or exceeded the benchmark score (21 out of 36) in the reading section of the ACT college admissions test from those who did not. Prior ACT research had shown that students achieving the benchmark score or better in reading—which only about half (51 percent) of the roughly half million test takers in the 2004–2005 academic year had done—had a high probability (75 percent chance) of earning a C or better in an introductory, credit-bearing course in U.S. history or psychology (two common reading-intensive courses taken by first-year college students) and a 50 percent chance of earning a B or better in such a course.[1]

Surprisingly, what chiefly distinguished the performance of those students who had earned the benchmark score or better from those who had not was not their relative ability in making inferences while reading or answering questions related to particular cognitive processes, such as determining main ideas or determining the meaning of words and phrases in context. Instead, the clearest differentiator was students' ability to answer questions associated with complex texts. Students scoring below benchmark performed no better than chance (25 percent correct) on four-option multiple-choice questions pertaining to passages rated as "complex" on a three-point qualitative rubric described in the report. These findings held for male and female students, students from all racial/ethnic groups, and students from families with widely varying incomes. The most important implication of this study was that a pedagogy focused only on "higher-order" or "critical" thinking was insufficient to ensure that students were ready for college and careers: what students could read, in terms of its complexity, was at least as important as what they could do with what they read.

The ACT report is one part of an extensive body of research attesting to the importance of text complexity in reading achievement. The clear, alarming picture that emerges from the evidence, briefly summarized below[2], is that while the reading demands of college, workforce training programs, and citizenship have held steady or risen over the past fifty years or so, K–12 texts have, if anything, become less demanding. This finding is the impetus behind the Standards' strong emphasis on increasing text complexity as a key requirement in reading.

College, Careers, and Citizenship: Steady or Increasing Complexity of Texts and Tasks

Research indicates that the demands that college, careers, and citizenship place on readers have either held steady or increased over roughly the last fifty years. The difficulty of college textbooks, as measured by Lexile scores, has not decreased in any block of time since 1962; it has, in fact, increased over that period (Stenner, Koons, & Swartz, in press). The word difficulty of every scientific journal and magazine from 1930 to 1990 examined by Hayes and Ward (1992) had actually increased, which is important in part because, as a 2005 College Board study (Milewski, Johnson, Glazer, & Kubota, 2005) found, college professors assign more readings from periodicals than do high school teachers. Workplace reading, measured in Lexiles, exceeds grade 12 complexity significantly, although there is considerable variation (Stenner, Koons, & Swartz, in press). The vocabulary difficulty of newspapers remained stable over the 1963–1991 period Hayes and his colleagues (Hayes, Wolfer, & Wolfe, 1996) studied.

Furthermore, students in college are expected to read complex texts with substantially greater independence (i.e., much less scaffolding) than are students in typical K–12 programs. College students are held more accountable for what they read on their own than are most students in high school (Erickson & Strommer, 1991; Pritchard, Wilson, & Yamnitz, 2007). College instructors assign readings, not necessarily explicated in class, for which students might be held accountable through exams, papers, presentations, or class discussions. Students in high school, by contrast, are

[1]In the 2008–2009 academic year, only 53 percent of students achieved the reading benchmark score or higher; the increase from 2004–2005 was not statistically significant. See ACT, Inc. (2009).
[2]Much of the summary found in the next two sections is heavily influenced by Marilyn Jager Adams's painstaking review of the relevant literature. See Adams (2009).

rarely held accountable for what they are able to read independently (Heller & Greenleaf, 2007). This discrepancy in task demand, coupled with what we see below is a vast gap in text complexity, may help explain why only about half of the students taking the ACT Test in the 2004–2005 academic year could meet the benchmark score in reading (which also was the case in 2008–2009, the most recent year for which data are available) and why so few students in general are prepared for postsecondary reading (ACT, Inc., 2006, 2009).

K–12 Schooling: Declining Complexity of Texts and a Lack of Reading of Complex Texts Independently

Despite steady or growing reading demands from various sources, K–12 reading texts have actually trended downward in difficulty in the last half century. Jeanne Chall and her colleagues (Chall, Conard, & Harris, 1977) found a thirteen-year decrease from 1963 to 1975 in the difficulty of grade 1, grade 6, and (especially) grade 11 texts. Extending the period to 1991, Hayes, Wolfer, and Wolfe (1996) found precipitous declines (relative to the period from 1946 to 1962) in average sentence length and vocabulary level in reading textbooks for a variety of grades. Hayes also found that while science books were more difficult to read than literature books, only books for Advanced Placement (AP) classes had vocabulary levels equivalent to those of even newspapers of the time (Hayes & Ward, 1992). Carrying the research closer to the present day, Gary L. Williamson (2006) found a 350L (Lexile) gap between the difficulty of end-of-high school and college texts—a gap equivalent to 1.5 standard deviations and more than the Lexile difference between grade 4 and grade 8 texts on the National Assessment of Educational Progress (NAEP). Although legitimate questions can be raised about the tools used to measure text complexity (e.g., Mesmer, 2008), what is relevant in these numbers is the general, steady decline—over time, across grades, and substantiated by several sources—in the difficulty and likely also the sophistication of content of the texts students have been asked to read in school since 1962.

There is also evidence that current standards, curriculum, and instructional practice have not done enough to foster the independent reading of complex texts so crucial for college and career readiness, particularly in the case of informational texts. K–12 students are, in general, given considerable scaffolding—assistance from teachers, class discussions, and the texts themselves (in such forms as summaries, glossaries, and other text features)—with reading that is already less complex overall than that typically required of students prior to 1962.[3] What is more, students today are asked to read very little expository text—as little as 7 and 15 percent of elementary and middle school instructional reading, for example, is expository (Hoffman, Sabo, Bliss, & Hoy, 1994; Moss & Newton, 2002; Yopp & Yopp, 2006)—yet much research supports the conclusion that such text is harder for most students to read than is narrative text (Bowen & Roth, 1999; Bowen, Roth, & McGinn, 1999, 2002; Heller & Greenleaf, 2007; Shanahan & Shanahan, 2008), that students need sustained exposure to expository text to develop important reading strategies (Afflerbach, Pearson, & Paris, 2008; Kintsch, 1998, 2009; McNamara, Graesser, & Louwerse, in press; Perfetti, Landi, & Oakhill, 2005; van den Broek, Lorch, Linderholm, & Gustafson, 2001; van den Broek, Risden, & Husebye-Hartmann, 1995), and that expository text makes up the vast majority of the required reading in college and the workplace (Achieve, Inc., 2007). Worse still, what little expository reading students are asked to do is too often of the superficial variety that involves skimming and scanning for particular, discrete pieces of information; such reading is unlikely to prepare students for the cognitive demand of true understanding of complex text.

The Consequences: Too Many Students Reading at Too Low a Level

The impact that low reading achievement has on students' readiness for college, careers, and life in general is significant. To put the matter bluntly, a high school graduate who is a poor reader is a postsecondary student who must struggle mightily to succeed. The National Center for Education Statistics (NCES) (Wirt, Choy, Rooney, Provasnik, Sen, & Tobin, 2004) reports that although needing to take one or more remedial/developmental courses of any sort lowers a student's chance of eventually earning a degree or certificate, "the need for remedial reading appears to be the most serious barrier to degree completion" (p. 63). Only 30 percent of 1992 high school seniors who went on to enroll in postsecondary education between 1992 and 2000 and then took any remedial reading course went on to receive a degree or certificate, compared to 69 percent of the 1992 seniors who took no postsecondary remedial courses and 57 percent of those who took one remedial course in a subject other than reading or mathematics. Considering that 11 percent of those high school seniors required at least one remedial reading course, the societal impact of low reading achievement is as profound as its impact on the aspirations of individual students.

Reading levels among the adult population are also disturbingly low. The 2003 National Assessment of Adult Literacy (Kutner, Greenberg, Jin, Boyle, Hsu, & Dunleavy, 2007) reported that 14 percent of adults read prose texts at "below basic" level, meaning they could exhibit "no more than the most simple and concrete literacy skills"; a similarly small number (13 percent) could read prose texts at the "proficient level," meaning they could perform "more complex and challenging literacy activities" (p. 4). The percent of "proficient" readers had actually declined in a statistically significant way from 1992 (15 percent). This low and declining achievement rate may be connected to a general lack of reading. As reported by the National Endowment for the Arts (2004), the percent of U.S. adults reading literature dropped from 54.0 in 1992 to 46.7 in 2002, while the percent of adults reading *any* book also declined by 7 percent

[3]As also noted in "Key Considerations in Implementing Text Complexity," below, it is important to recognize that scaffolding often is entirely appropriate. The expectation that scaffolding will occur with particularly challenging texts is built into the Standards' grade-by-grade text complexity expectations, for example. The general movement, however, should be toward *decreasing scaffolding* and *increasing independence* both within and across the text complexity bands defined in the Standards.

during the same time period. Although the decline occurred in all demographic groups, the steepest decline by far was among 18-to-24- and 25-to-34-year-olds (28 percent and 23 percent, respectively). In other words, the problem of lack of reading is not only getting worse but doing so at an accelerating rate. Although numerous factors likely contribute to the decline in reading, it is reasonable to conclude from the evidence presented above that the deterioration in overall reading ability, abetted by a decline in K–12 text complexity and a lack of focus on independent reading of complex texts, is a contributing factor.

Being able to read complex text independently and proficiently is essential for high achievement in college and the workplace and important in numerous life tasks. Moreover, current trends suggest that if students cannot read challenging texts with understanding—if they have not developed the skill, concentration, and stamina to read such texts—they will read less in general. In particular, if students cannot read complex expository text to gain information, they will likely turn to text-free or text-light sources, such as video, podcasts, and tweets. These sources, while not without value, cannot capture the nuance, subtlety, depth, or breadth of ideas developed through complex text. As Adams (2009) puts it, "There may one day be modes and methods of information delivery that are as efficient and powerful as text, but for now there is no contest. To grow, our students must read lots, and more specifically they must read lots of 'complex' texts—texts that offer them new language, new knowledge, and new modes of thought" (p. 182). A turning away from complex texts is likely to lead to a general impoverishment of knowledge, which, because knowledge is intimately linked with reading comprehension ability, will accelerate the decline in the ability to comprehend complex texts and the decline in the richness of text itself. This bodes ill for the ability of Americans to meet the demands placed upon them by citizenship in a democratic republic and the challenges of a highly competitive global marketplace of goods, services, and ideas.

It should be noted also that the problems with reading achievement are not "equal opportunity" in their effects: students arriving at school from less-educated families are disproportionately represented in many of these statistics (Bettinger & Long, 2009). The consequences of insufficiently high text demands and a lack of accountability for independent reading of complex texts in K–12 schooling are severe for everyone, but they are disproportionately so for those who are already most isolated from text before arriving at the schoolhouse door.

The Standards' Approach to Text Complexity

To help redress the situation described above, the Standards define a three-part model for determining how easy or difficult a particular text is to read as well as grade-by-grade specifications for increasing text complexity in successive years of schooling (Reading standard 10). These are to be used together with grade-specific standards that require increasing sophistication in students' reading comprehension ability (Reading standards 1–9). The Standards thus approach the intertwined issues of what and how student read.

A Three-Part Model for Measuring Text Complexity

As signaled by the graphic at right, the Standards' model of text complexity consists of three equally important parts.

(1) Qualitative dimensions of text complexity. In the Standards, *qualitative dimensions* and *qualitative factors* refer to those aspects of text complexity best measured or only measurable by an attentive human reader, such as levels of meaning or purpose; structure; language conventionality and clarity; and knowledge demands.

(2) Quantitative dimensions of text complexity. The terms *quantitative dimensions* and *quantitative factors* refer to those aspects of text complexity, such as word length or frequency, sentence length, and text cohesion, that are difficult if not impossible for a human reader to evaluate efficiently, especially in long texts, and are thus today typically measured by computer software.

(3) Reader and task considerations. While the prior two elements of the model focus on the inherent complexity of text, variables specific to particular readers (such as motivation, knowledge, and experiences) and to particular tasks (such as purpose and the complexity of the task assigned and the questions posed) must also be considered when determining whether a text is appropriate for a given student. Such assessments are best made by teachers employing their professional judgment, experience, and knowledge of their students and the subject.

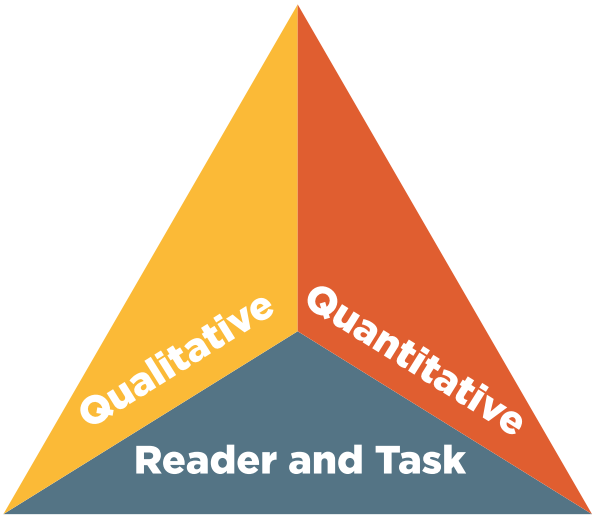

Figure 1: The Standards' Model of Text Complexity

The Standards presume that all three elements will come into play when text complexity and appropriateness are determined. The following pages begin with a brief overview of just some of the currently available tools, both qualitative and quantitative, for measuring text complexity, continue with some important considerations for using text complexity with students, and conclude with a series of examples showing how text complexity measures, balanced with reader and task considerations, might be used with a number of different texts.

Qualitative and Quantitative Measures of Text Complexity

The qualitative and quantitative measures of text complexity described below are representative of the best tools presently available. However, each should be considered only provisional; more precise, more accurate, and easier-to-use tools are urgently needed to help make text complexity a vital, everyday part of classroom instruction and curriculum planning.

Qualitative Measures of Text Complexity

Using qualitative measures of text complexity involves making an informed decision about the difficulty of a text in terms of one or more factors discernible to a human reader applying trained judgment to the task. In the Standards, qualitative measures, along with professional judgment in matching a text to reader and task, serve as a necessary complement and sometimes as a corrective to quantitative measures, which, as discussed below, cannot (at least at present) capture all of the elements that make a text easy or challenging to read and are not equally successful in rating the complexity of all categories of text.

Built on prior research, the four qualitative factors described below are offered here as a first step in the development of robust tools for the qualitative analysis of text complexity. These factors are presented as continua of difficulty rather than as a succession of discrete "stages" in text complexity. Additional development and validation would be needed to translate these or other dimensions into, for example, grade-level- or grade-band-specific rubrics. The qualitative factors run from easy (left-hand side) to difficult (right-hand side). Few, if any, authentic texts will be low or high on all of these measures, and some elements of the dimensions are better suited to literary or to informational texts.

(1) ***Levels of Meaning (literary texts) or purpose (informational texts).*** Literary texts with a single level of meaning tend to be easier to read than literary texts with multiple levels of meaning (such as satires, in which the author's literal message is intentionally at odds with his or her underlying message). Similarily, informational texts with an explicitly stated purpose are generally easier to comprehend than informational texts with an implicit, hidden, or obscure purpose.

(2) ***Structure.*** Texts of low complexity tend to have simple, well-marked, and conventional structures, whereas texts of high complexity tend to have complex, implicit, and (particularly in literary texts) unconventional structures. Simple literary texts tend to relate events in chronological order, while complex literary texts make more frequent use of flashbacks, flash-forwards, and other manipulations of time and sequence. Simple informational texts are likely not to deviate from the conventions of common genres and subgenres, while complex informational texts are more likely to conform to the norms and conventions of a specific discipline. Graphics tend to be simple and either unnecessary or merely supplementary to the meaning of texts of low complexity, whereas texts of high complexity tend to have similarly complex graphics, graphics whose interpretation is essential to understanding the text, and graphics that provide an independent source of information within a text. (Note that many books for the youngest students rely heavily on graphics to convey meaning and are an exception to the above generalization.)

(3) ***Language Conventionality and Clarity.*** Texts that rely on literal, clear, contemporary, and conversational language tend to be easier to read than texts that rely on figurative, ironic, ambiguous, purposefully misleading, archaic or otherwise unfamiliar language or on general academic and domain-specific vocabulary.

(4) ***Knowledge Demands.*** Texts that make few assumptions about the extent of readers' life experiences and the depth of their cultural/literary and content/discipline knowledge are generally less complex than are texts that make many assumptions in one or more of those areas.

Figure 2: Qualitative Dimensions of Text Complexity

Levels of Meaning (literary texts) or purpose (informational texts)

- Single level of meaning → Multiple levels of meaning
- Explicitly stated purpose → Implicit purpose, may be hidden or obscure

Structure

- Simple → Complex
- Explicit → Implicit
- Conventional → Unconventional (chiefly literary texts)
- Events related in chronological order → Events related out of chronological order (chiefly literary texts)
- Traits of a common genre or subgenre → Traits specific to a particular discipline (chiefly informational texts)
- Simple graphics → Sophisticated graphics
- Graphics unnecessary or merely supplementary to understanding the text → Graphics essential to understanding the text and may provide information not otherwise conveyed in the text

Language Conventionality and Clarity

- Literal → Figurative or ironic
- Clear → Ambiguous or purposefully misleading
- Contemporary, familiar → Archaic or otherwise unfamiliar
- Conversational → General academic and domain-specific

Knowledge Demands: Life Experiences (literary texts)

- Simple themes → Complex or sophisticated themes
- Single themes → Multiple themes
- Common, everyday experiences or clearly fantastical situations → Experiences distinctly different from one's own
- Single perspective → Multiple perspectives
- Perspective(s) like one's own → Perspective(s) unlike or in opposition to one's own

Knowledge Demands: Cultural/Literary Knowledge (chiefly literary texts)

- Everyday knowledge and familiarity with genre conventions required → Cultural and literary knowledge useful
- Low intertextuality (few if any references/allusions to other texts) → High intertextuality (many references/allusions to other texts)

Knowledge Demands: Content/Discipline Knowledge (chiefly informational texts)

- Everyday knowledge and familiarity with genre conventions required → Extensive, perhaps specialized discipline-specific content knowledge required
- Low intertextuality (few if any references to/citations of other texts) → High intertextuality (many references to/citations of other texts)

Adapted from ACT, Inc. (2006). *Reading between the lines: What the ACT reveals about college readiness in reading.* Iowa City, IA: Author; Carnegie Council on Advancing Adolescent Literacy. (2010). *Time to act: An agenda for advancing adolescent literacy for college and career success.* New York: Carnegie Corporation of New York; Chall, J. S., Bissex, G. L., Conrad, S. S., & Harris-Sharples, S. (1996). *Qualitative assessment of text difficulty: A practical guide for teachers and writers.* Cambridge, UK: Brookline Books; Hess, K., & Biggam, S. (2004). A discussion of "increasing text complexity." Published by the New Hampshire, Rhode Island, and Vermont departments of education as part of the New England Common Assessment Program (NECAP). Retrieved from www.nciea.org/publications/TextComplexity_KH05.pdf

Quantitative Measures of Text Complexity

A number of quantitative tools exist to help educators assess aspects of text complexity that are better measured by algorithm than by a human reader. The discussion is not exhaustive, nor is it intended as an endorsement of one method or program over another. Indeed, because of the limits of each of the tools, new or improved ones are needed quickly if text complexity is to be used effectively in the classroom and curriculum.

Numerous formulas exist for measuring the readability of various types of texts. Such formulas, including the widely used Flesch-Kincaid Grade Level test, typically use word length and sentence length as proxies for semantic and syntactic complexity, respectively (roughly, the complexity of the meaning and sentence structure). The assumption behind these formulas is that longer words and longer sentences are more difficult to read than shorter ones; a text with many long words and/or sentences is thus rated by these formulas as harder to read than a text with many short words and/or sentences would be. Some formulas, such as the Dale-Chall Readability Formula, substitute word frequency for word length as a factor, the assumption here being that less familiar words are harder to comprehend than familiar words. The higher the proportion of less familiar words in a text, the theory goes, the harder that text is to read. While these readability formulas are easy to use and readily available—some are even built into various word processing applications—their chief weakness is that longer words, less familiar words, and longer sentences are not inherently hard to read. In fact, series of short, choppy sentences can pose problems for readers precisely because these sentences lack the cohesive devices, such as transition words and phrases, that help establish logical links among ideas and thereby reduce the inference load on readers.

Like Dale-Chall, the Lexile Framework for Reading, developed by MetaMetrics, Inc., uses word frequency and sentence length to produce a single measure, called a Lexile, of a text's complexity. The most important difference between the Lexile system and traditional readability formulas is that traditional formulas only assign a score to texts, whereas the Lexile Framework can place both readers and texts on the same scale. Certain reading assessments yield Lexile scores based on student performance on the instrument; some reading programs then use these scores to assign texts to students. Because it too relies on word familiarity and sentence length as proxies for semantic and syntactic complexity, the Lexile Framework, like traditional formulas, may underestimate the difficulty of texts that use simple, familiar language to convey sophisticated ideas, as is true of much high-quality fiction written for adults and appropriate for older students. For this reason and others, it is possible that factors other than word familiarity and sentence length contribute to text difficulty. In response to such concerns, MetaMetrics has indicated that it will release the qualitative ratings it assigns to some of the texts it rates and will actively seek to determine whether one or more additional factors can and should be added to its quantitative measure. Other readability formulas also exist, such as the ATOS formula associated with the Accelerated Reader program developed by Renaissance Learning. ATOS uses word difficulty (estimated grade level), word length, sentence length, and text length (measured in words) as its factors. Like the Lexile Framework, ATOS puts students and texts on the same scale.

A nonprofit service operated at the University of Memphis, Coh-Metrix attempts to account for factors in addition to those measured by readability formulas. The Coh-Metrix system focuses on the cohesiveness of a text—basically, how tightly the text holds together. A high-cohesion text does a good deal of the work for the reader by signaling relationships among words, sentences, and ideas using repetition, concrete language, and the like; a low-cohesion text, by contrast, requires the reader him- or herself to make many of the connections needed to comprehend the text. High-cohesion texts are not necessarily "better" than low-cohesion texts, but they are easier to read.

The standard Coh-Metrix report includes information on more than sixty indices related to text cohesion, so it can be daunting to the layperson or even to a professional educator unfamiliar with the indices. Coh-Metrix staff have worked to isolate the most revealing, informative factors from among the many they consider, but these "key factors" are not yet widely available to the public, nor have the results they yield been calibrated to the Standards' text complexity grade bands. The greatest value of these factors may well be the promise they offer of more advanced and usable tools yet to come.

Reader and Task Considerations

The use of qualitative and quantitative measures to assess text complexity is balanced in the Standards' model by the expectation that educators will employ professional judgment to match texts to particular students and tasks. Numerous considerations go into such matching. For example, harder texts may be appropriate for highly knowledgeable or skilled readers, and easier texts may be suitable as an expedient for building struggling readers' knowledge or reading skill up to the level required by the Standards. Highly motivated readers are often willing to put in the extra effort required to read harder texts that tell a story or contain information in which they are deeply interested. Complex tasks may require the kind of information contained only in similarly complex texts.

Numerous factors associated with the individual reader are relevant when determining whether a given text is appropriate for him or her. The RAND Reading Study Group identified many such factors in the 2002 report *Reading for Understanding*:

> The reader brings to the act of reading his or her cognitive capabilities (attention, memory, critical analytic ability, inferencing, visualization); motivation (a purpose for reading, interest in the content, self-efficacy as a reader); knowledge (vocabulary and topic knowledge, linguistic and discourse knowledge, knowledge of

comprehension strategies); and experiences.

As part of describing the activity of reading, the RAND group also named important task-related variables, including the reader's purpose (which might shift over the course of reading), "the type of reading being done, such as skimming (getting the gist of the text) or studying (reading the text with the intent of retaining the information for a period of time)," and the intended outcome, which could include "an increase in knowledge, a solution to some real-world problem, and/or engagement with the text."[4]

Key Considerations in Implementing Text Complexity

Texts and Measurement Tools

The tools for measuring text complexity are at once useful and imperfect. Each of the qualitative and quantitative tools described above has its limitations, and none is completely accurate. The development of new and improved text complexity tools should follow the release of the Standards as quickly as possible. In the meantime, the Standards recommend that multiple quantitative measures be used whenever possible and that their results be confirmed or overruled by a qualitative analysis of the text in question.

Certain measures are less valid or inappropriate for certain kinds of texts. Current quantitative measures are suitable for prose and dramatic texts. Until such time as quantitative tools for capturing poetry's difficulty are developed, determining whether a poem is appropriately complex for a given grade or grade band will necessarily be a matter of a qualitative assessment meshed with reader-task considerations. Furthermore, texts for kindergarten and grade 1 may not be appropriate for quantitative analysis, as they often contain difficult-to-assess features designed to aid early readers in acquiring written language. The Standards' poetry and K–1 text exemplars were placed into grade bands by expert teachers drawing on classroom experience.

Many current quantitative measures underestimate the challenge posed by complex narrative fiction. Quantitative measures of text complexity, particularly those that rely exclusively or in large part on word- and sentence-level factors, tend to assign sophisticated works of literature excessively low scores. For example, as illustrated in example 2 below, some widely used quantitative measures, including the Flesch-Kincaid Grade Level test and the Lexile Framework for Reading, rate the Pulitzer Prize–winning novel *Grapes of Wrath* as appropriate for grades 2–3. This counterintuitive result emerges because works such as *Grapes* often express complex ideas in relatively commonplace language (familiar words and simple syntax), especially in the form of dialogue that mimics everyday speech. Until widely available quantitative tools can better account for factors recognized as making such texts challenging, including multiple levels of meaning and mature themes, preference should likely be given to qualitative measures of text complexity when evaluating narrative fiction intended for students in grade 6 and above.

Measures of text complexity must be aligned with college and career readiness expectations for all students. Qualitative scales of text complexity should be anchored at one end by descriptions of texts representative of those required in typical first-year credit-bearing college courses and in workforce training programs. Similarly, quantitative measures should identify the college- and career-ready reading level as one endpoint of the scale. MetaMetrics, for example, has realigned its Lexile ranges to match the Standards' text complexity grade bands and has adjusted upward its trajectory of reading comprehension development through the grades to indicate that all students should be reading at the college and career readiness level by no later than the end of high school.

Figure 3: Text Complexity Grade Bands and Associated Lexile Ranges (in Lexiles)

Text Complexity Grade Band in the Standards	Old Lexile Ranges	Lexile Ranges Aligned to CCR expectations
K–1	N/A	N/A
2–3	450–725	450–790
4–5	645–845	770–980
6–8	860–1010	955–1155
9–10	960–1115	1080–1305
11–CCR	1070–1220	1215–1355

[4]RAND Reading Study Group. (2002). *Reading for understanding: Toward an R&D program in reading comprehension.* Santa Monica, CA: RAND. The quoted text appears in pages xiii–xvi.

Readers and Tasks

Students' ability to read complex text does not always develop in a linear fashion. Although the progression of Reading standard 10 (see below) defines required grade-by-grade growth in students' ability to read complex text, the development of this ability in individual students is unlikely to occur at an unbroken pace. Students need opportunities to stretch their reading abilities but also to experience the satisfaction and pleasure of easy, fluent reading within them, both of which the Standards allow for. As noted above, such factors as students' motivation, knowledge, and experiences must also come into play in text selection. Students deeply interested in a given topic, for example, may engage with texts on that subject across a range of complexity. Particular tasks may also require students to read harder texts than they would normally be required to. Conversely, teachers who have had success using particular texts that are easier than those required for a given grade band should feel free to continue to use them so long as the general movement during a given school year is toward texts of higher levels of complexity.

Students reading well above and well below grade-band level need additional support. Students for whom texts within their text complexity grade band (or even from the next higher band) present insufficient challenge must be given the attention and resources necessary to develop their reading ability at an appropriately advanced pace. On the other hand, students who struggle greatly to read texts within (or even below) their text complexity grade band must be given the support needed to enable them to read at a grade-appropriate level of complexity.

Even many students on course for college and career readiness are likely to need scaffolding as they master higher levels of text complexity. As they enter each new grade band, many students are likely to need at least some extra help as they work to comprehend texts at the high end of the range of difficulty appropriate to the band. For example, many students just entering grade 2 will need some support as they read texts that are advanced for the grades 2–3 text complexity band. Although such support is educationally necessary and desirable, instruction must move generally toward *decreasing scaffolding* and *increasing independence*, with the goal of students reading independently and proficiently within a given grade band by the end of the band's final year (continuing the previous example, the end of grade 3).

The Standards' Grade-Specific Text Complexity Demands

As illustrated in figure 4, text complexity in the Standards is defined in grade bands: grades 2–3, 4–5, 6–8, 9–10, and 11–CCR.[5] Students in the first year(s) of a given band are expected by the end of the year to read and comprehend proficiently within the band, with scaffolding as needed at the high end of the range. Students in the last year of a band are expected by the end of the year to read and comprehend independently and proficiently within the band.

Figure 4: The Progression of Reading Standard 10

Grade(s)	Reading Standard 10 (individual text types omitted)
K	Actively engage in group reading activities with purpose and understanding.
1	With prompting and support, read prose and poetry [informational texts] of appropriate complexity for grade 1.
2	By the end of the year, read and comprehend literature [informational texts] in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range.
3	By the end of the year, read and comprehend literature [informational texts] at the high end of the grades 2–3 text complexity band independently and proficiently.
4	By the end of the year, read and comprehend literature [informational texts] in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range.
5	By the end of the year, read and comprehend literature [informational texts] at the high end of the grades 4–5 text complexity band independently and proficiently.
6	By the end of the year, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range.
7	By the end of the year, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range.
8	By the end of the year, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 6–8 text complexity band independently and proficiently.
9–10	By the end of grade 9, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range. By the end of grade 10, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 9–10 text complexity band independently and proficiently.
11–12	By the end of grade 11, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range. By the end of grade 12, read and comprehend literature [informational texts, history/social studies texts, science/technical texts] at the high end of the grades 11–CCR text complexity band independently and proficiently.

[5]As noted above in "Key Considerations in Implementing Text Complexity," K–1 texts are not amenable to quantitative measure. Furthermore, students in those grades are acquiring the code at varied rates. Hence, the Standards' text complexity requirements begin formally with grade 2.

The Model in Action: Sample Annotated Reading Texts

The following examples demonstrate how qualitative and quantitative measures of text complexity can be used along with reader and task considerations to make informed decisions about whether a particular text is an appropriate challenge for particular students. The cases below illustrate some of the possibilities that can arise when multiple measures are used to assess text complexity and how discrepancies among those measures might be resolved. It is important to note that the conclusions offered below concerning the texts' appropriateness for particular grade bands are informed judgments based on qualitative and quantitative assessments of text complexity. Different conclusions could reasonably be drawn from the same data, and reader and task considerations may also warrant a higher or lower placement.

Example 1: *Narrative of the Life of Frederick Douglass* (Grades 6–8 Text Complexity Band)

Excerpt

> The plan which I adopted, and the one by which I was most successful, was that of making friends of all the little white boys whom I met in the street. As many of these as I could, I converted into teachers. With their kindly aid, obtained at different times and in different places, I finally succeeded in learning to read. When I was sent of errands, I always took my book with me, and by going one part of my errand quickly, I found time to get a lesson before my return. I used also to carry bread with me, enough of which was always in the house, and to which I was always welcome; for I was much better off in this regard than many of the poor white children in our neighborhood. This bread I used to bestow upon the hungry little urchins, who, in return, would give me that more valuable bread of knowledge. I am strongly tempted to give the names of two or three of those little boys, as a testimonial of the gratitude and affection I bear them; but prudence forbids;—not that it would injure me, but it might embarrass them; for it is almost an unpardonable offence to teach slaves to read in this Christian country. It is enough to say of the dear little fellows, that they lived on Philpot Street, very near Durgin and Bailey's ship-yard. I used to talk this matter of slavery over with them. I would sometimes say to them, I wished I could be as free as they would be when they got to be men. "You will be free as soon as you are twenty-one, but I am a slave for life! Have not I as good a right to be free as you have?" These words used to trouble them; they would express for me the liveliest sympathy, and console me with the hope that something would occur by which I might be free.
>
> I was now about twelve years old, and the thought of being a slave for life began to bear heavily upon my heart. Just about this time, I got hold of a book entitled "The Columbian Orator." Every opportunity I got, I used to read this book. Among much of other interesting matter, I found in it a dialogue between a master and his slave. The slave was represented as having run away from his master three times. The dialogue represented the conversation which took place between them, when the slave was retaken the third time. In this dialogue, the whole argument in behalf of slavery was brought forward by the master, all of which was disposed of by the slave. The slave was made to say some very smart as well as impressive things in reply to his master—things which had the desired though unexpected effect; for the conversation resulted in the voluntary emancipation of the slave on the part of the master.
>
> In the same book, I met with one of Sheridan's mighty speeches on and in behalf of Catholic emancipation. These were choice documents to me. I read them over and over again with unabated interest. They gave tongue to interesting thoughts of my own soul, which had frequently flashed through my mind, and died away for want of utterance. The moral which I gained from the dialogue was the power of truth over the conscience of even a slaveholder. What I got from Sheridan was a bold denunciation of slavery, and a powerful vindication of human rights. The reading of these documents enabled me to utter my thoughts, and to meet the arguments brought forward to sustain slavery; but while they relieved me of one difficulty, they brought on another even more painful than the one of which I was relieved. The more I read, the more I was led to abhor and detest my enslavers. I could regard them in no other light than a band of successful robbers, who had left their homes, and gone to Africa, and stolen us from our homes, and in a strange land reduced us to slavery. I loathed them as being the meanest as well as the most wicked of men. As I read and contemplated the subject, behold! that very discontentment which Master Hugh had predicted would follow my learning to read had already come, to torment and sting my soul to unutterable anguish. As I writhed under it, I would at times feel that learning to read had been a curse rather than a blessing. It had given me a view of my wretched condition, without the remedy. It opened my eyes to the horrible pit, but to no ladder upon which to get out. In moments of agony, I envied my fellow-slaves for their stupidity. I have often wished myself a beast. I preferred the condition of the meanest reptile to my own. Any thing, no matter what, to get rid of thinking! It was this everlasting thinking of my condition that tormented me. There was no getting rid of it. It was pressed

upon me by every object within sight or hearing, animate or inanimate. The silver trump of freedom had roused my soul to eternal wakefulness. Freedom now appeared, to disappear no more forever. It was heard in every sound, and seen in every thing. It was ever present to torment me with a sense of my wretched condition. I saw nothing without seeing it, I heard nothing without hearing it, and felt nothing without feeling it. It looked from every star, it smiled in every calm, breathed in every wind, and moved in every storm.

Douglass, Frederick. *Narrative of the Life of Frederick Douglass, an American Slave. Written by Himself*. Boston: Anti-Slavery Office, 1845.

Figure 5: Annotation of *Narrative of the Life of Frederick Douglass*

Qualitative Measures

Levels of Meaning

While the apparent aim of the text is to convince readers of the day of the evils of slavery, there are other aims as well; among the latter, not fully revealed in the excerpt, are Douglass's efforts to assert his own manhood (and that of other black men) and to create an extended analogy between his own literal rise to freedom and a spiritual awakening.

Structure

The Narrative uses a fairly simple, explicit, and conventional story structure, with events largely related chronologically by a narrator recounting his past. There are some philosophical discussions that may, to the reader just looking for a story, seem like digressions.

Language Conventionality and Clarity

Douglass's language is largely clear and meant to be accessible. He does, however, use some figurative language (e.g., juxtaposing literal bread with the metaphorical bread of knowledge) and literary devices (e.g., personifying freedom). There are also some now-archaic and unusual words and phrasings (e.g., choice documents).

Knowledge Demands

The Narrative discusses moderately sophisticated themes. The experiences of slavery Douglass describes are obviously outside students' own experiences, but Douglass renders them vivid. The text is bound by Douglass's authoritative perspective. General background knowledge about slavery and race in mid-nineteenth-century America is helpful, as is knowledge of Christianity, to which Douglass makes frequent reference throughout the excerpt and the work as a whole.

Quantitative Measures

Various readability measures of the Narrative are largely in agreement that it is of appropriate complexity for grades 6–8. A Coh-Metrix analysis calls attention to this excerpt's complex syntax and the abstractness of some of the language (e.g., hard-to-define concepts such as slavery and freedom). Helping to balance out that challenge are the text's storylike structure and the way the text draws clear connections between words and sentences. Readers will still have to make many inferences to interpret and connect the text's central ideas, however.

Reader-Task Considerations

These are to be determined locally with reference to such variables as a student's motivation, knowledge, and experiences as well as purpose and the complexity of the task assigned and the questions posed.

Recommended Placement

Both the qualitative and quantitative measures support the Standards' inclusion of the Narrative in the grades 6–8 text complexity band, with the understanding that the text sits at the high end of the range and that it can be reread profitably in later years by more mature students capable of appreciating the deeper messages embedded in the story

.

Example 2: *The Grapes of Wrath* (Grades 9–10 Text Complexity Band)

Excerpt

The man took off his dark, stained hat and stood with a curious humility in front of the screen. "Could you see your way to sell us a loaf of bread, ma'am?"

Mae said, "This ain't a grocery store. We got bread to make san'widges."

"I know, ma'am." His humility was insistent. "We need bread and there ain't nothin' for quite a piece, they say."

"'F we sell bread we gonna run out." Mae's tone was faltering.

"We're hungry," the man said.

"Whyn't you buy a san'widge? We got nice san'widges, hamburgs."

"We'd sure admire to do that, ma'am. But we can't. We got to make a dime do all of us." And he said embarrassedly, "We ain't got but a little."

Mae said, "You can't get no loaf a bread for a dime. We only got fifteen-cent loafs."

From behind her Al growled, "God Almighty, Mae, give 'em bread."

"We'll run out 'fore the bread truck comes."

"Run out then, goddamn it," said Al. He looked sullenly down at the potato salad he was mixing.

Mae shrugged her plump shoulders and looked to the truck drivers to show them what she was up against.

She held the screen door open and the man came in, bringing a smell of sweat with him. The boys edged behind him and they went immediately to the candy case and stared in—not with craving or with hope or even with desire, but just with a kind of wonder that such things could be. They were alike in size and their faces were alike. One scratched his dusty ankle with the toe nails of his other foot. The other whispered some soft message and then they straightened their arms so that their clenched fists in the overall pockets showed through the thin blue cloth.

Mae opened a drawer and took out a long waxpaper-wrapped loaf. "This here is a fifteen-cent loaf."

The man put his hat back on his head. He answered with inflexible humility, "Won't you—can't you see your way to cut off ten cents' worth?"

Al said snarlingly, "Goddamn it, Mae. Give 'em the loaf."

The man turned toward Al. "No, we want ta buy ten cents' worth of it. We got it figgered awful close, mister, to get to California."

Mae said resignedly, "You can have this for ten cents."

"That'd be robbin' you, ma'am."

"Go ahead—Al says to take it." She pushed the waxpapered loaf across the counter. The man took a deep leather pouch from his rear pocket, untied the strings, and spread it open. It was heavy with silver and with greasy bills.

"May soun' funny to be so tight," he apologized. "We got a thousan' miles to go, an' we don' know if we'll make it." He dug in the pouch with a forefinger, located a dime, and pinched in for it. When he put it down on the counter he had a penny with it. He was about to drop the penny back into the pouch when his eye fell on the boys frozen before the candy counter. He moved slowly down to them. He pointed in the case at big long sticks of striped peppermint. "Is them penny candy, ma'am?"

Mae moved down and looked in. "Which ones?"

"There, them stripy ones."

The little boys raised their eyes to her face and they stopped breathing; their mouths were partly opened, their half-naked bodies were rigid.

"Oh—them. Well, no—them's two for a penny."

"Well, gimme two then, ma'am." He placed the copper cent carefully on the counter. The boys expelled their held breath softly. Mae held the big sticks out.

Steinbeck, John. *The Grapes of Wrath.*
New York: Viking, 1967 (1939).

Figure 6: Annotation of *The Grapes of Wrath*

Qualitative Measures

Levels of Meaning

There are multiple and often implicit levels of meaning within the excerpt and the novel as a whole. The surface level focuses on the literal journey of the Joads, but the novel also works on metaphorical and philosophical levels.

Structure

The text is relatively simple, explicit, and conventional in form. Events are largely related in chronological order.

Language Conventionality and Clarity

Although the language used is generally familiar, clear, and conversational, the dialect of the characters may pose a challenge for some readers. Steinbeck also puts a great deal of weight on certain less familiar words, such as faltering. In various portions of the novel not fully represented in the excerpt, the author combines rich, vivid, and detailed description with an economy of words that requires heavy inferencing.

Knowledge Demands

The themes are sophisticated. The experiences and perspective conveyed will be different from those of many students. Knowledge of the Great Depression, the "Okie Migration" to California, and the religion and music of the migrants is helpful, but the author himself provides much of the context needed for comprehension.

Quantitative Measures

The quantitative assessment of The Grapes of Wrath demonstrates the difficulty many currently existing readability measures have in capturing adequately the richness of sophisticated works of literature, as various ratings suggest a placement within the grades 2–3 text complexity band. A Coh-Metrix analysis also tends to suggest the text is an easy one since the syntax is uncomplicated and the author uses a conventional story structure and only a moderate number of abstract words. (The analysis does indicate, however, that a great deal of inferencing will be required to interpret and connect the text's words, sentences, and central ideas.)

Reader-Task Considerations

These are to be determined locally with reference to such variables as a student's motivation, knowledge, and experiences as well as purpose and the complexity of the task assigned and the questions posed.

Recommended Placement

Though considered extremely easy by many quantitative measures, The Grapes of Wrath has a sophistication of theme and content that makes it more suitable for early high school (grades 9–10), which is where the Standards have placed it. In this case, qualitative measures have overruled the quantitative measures.

Example 3: *The Longitude Prize* (Grades 9–10 Text Complexity Band)

Excerpt

From Chapter 1: "A Most Terrible Sea"

At six in the morning I was awaked by a great shock, and a confused noise of the men on deck. I ran up, thinking some ship had run foul of us, for by my own reckoning, and that of every other person in the ship, we were at least thirty-five leagues distant from land; but, before I could reach the quarter-deck, the ship gave a great stroke upon the ground, and the sea broke over her. Just after this I could perceive the land, rocky, rugged and uneven, about two cables' length from us . . . the masts soon went overboard, carrying some men with them . . . notwithstanding a most terrible sea, one of the [lifeboats] was launched, and eight of the best men jumped into her; but she had scarcely got to the ship's stern when she was hurled to the bottom, and every soul in her perished. The rest of the boats were soon washed to pieces on the deck. We then made a raft . . . and waited with resignation for Providence to assist us.

—From an account of the wreck of HMS *Litchfield* off the coast of North Africa, 1758

The *Litchfield* came to grief because no one aboard knew where they were. As the narrator tells us, by his own reckoning and that of everyone else they were supposed to be thirty-five leagues, about a hundred miles, from land. The word "reckoning" was short for "dead reckoning"—the system used by ships at sea to keep track of their position, meaning their longitude and latitude. It was an intricate system, a craft, and like every other craft involved the mastery of certain tools, in this case such instruments as compass, hourglass, and quadrant. It was an art as well.

Latitude, the north-south position, had always been the navigator's faithful guide. Even in ancient times, a Greek or Roman sailor could tell how far north of the equator he was by observing the North Star's height above the horizon, or the sun's at noon. This could be done without instruments, trusting in experience and the naked eye, although it is believed that an ancestor of the quadrant called the astrolabe—"star-measurer"—was known to the ancients, and used by them to measure the angular height of the sun or a star above the horizon.

Phoenicians, Greeks, and Romans tended to sail along the coasts and were rarely out of sight of land. As later navigators left the safety of the Mediterranean to plunge into the vast Atlantic—far from shore, and from the shorebirds that led them to it—they still had the sun and the North Star. And these enabled them to follow imagined parallel lines of latitude that circle the globe. Following a line of latitude—"sailing the parallel"—kept a ship on a steady east-west course. Christopher Columbus, who sailed the parallel in 1492, held his ships on such a safe course, west and west again, straight on toward Asia. When they came across an island off the coast of what would later be called America, Columbus compelled his crew to sign an affidavit stating that this island was no island but mainland Asia.

Dash, Joan. *The Longitude Prize*.
New York: Farrar, Straus and Giroux, 2000. (2000)

Figure 7: Annotation of *The Longitude Prize*

Qualitative Measures

Levels of Meaning

There are multiple and often implicit levels of meaning within the excerpt and the novel as a whole. The surface level focuses on the literal journey of the Joads, but the novel also works on metaphorical and philosophical levels.

Structure

The text is relatively simple, explicit, and conventional in form. Events are largely related in chronological order.

Language Conventionality and Clarity

Although the language used is generally familiar, clear, and conversational, the dialect of the characters may pose a challenge for some readers. Steinbeck also puts a great deal of weight on certain less familiar words, such as faltering. In various portions of the novel not fully represented in the excerpt, the author combines rich, vivid, and detailed description with an economy of words that requires heavy inferencing.

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The themes are sophisticated. The experiences and perspective conveyed will be different from those of many students. Knowledge of the Great Depression, the "Okie Migration" to California, and the religion and music of the migrants is helpful, but the author himself provides much of the context needed for comprehension.

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The quantitative assessment of The Grapes of Wrath demonstrates the difficulty many currently existing readability measures have in capturing adequately the richness of sophisticated works of literature, as various ratings suggest a placement within the grades 2–3 text complexity band. A Coh-Metrix analysis also tends to suggest the text is an easy one since the syntax is uncomplicated and the author uses a conventional story structure and only a moderate number of abstract words. (The analysis does indicate, however, that a great deal of inferencing will be required to interpret and connect the text's words, sentences, and central ideas.)

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These are to be determined locally with reference to such variables as a student's motivation, knowledge, and experiences as well as purpose and the complexity of the task assigned and the questions posed.

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Though considered extremely easy by many quantitative measures, The Grapes of Wrath has a sophistication of theme and content that makes it more suitable for early high school (grades 9–10), which is where the Standards have placed it. In this case, qualitative measures have overruled the quantitative measures.

Reading Foundational Skills

The following supplements the Reading Standards: Foundational Skills (K–5) in the main document (pp. 14–16). See page 40 in the bibliography of this appendix for sources used in helping construct the foundational skills and the material below.

Phoneme-Grapheme Correspondences

Consonants

Common graphemes (spellings) are listed in the following table for each of the consonant sounds. Note that the term *grapheme* refers to a letter or letter combination that corresponds to one speech sound.

Figure 8: Consonant Phoneme-Grapheme Correspondences in English

Phoneme	Word Examples	Common Graphemes (Spellings) for the Phoneme*
/p/	pit, spider, stop	p
/b/	bit, brat, bubble	b
/m/	mitt, comb, hymn	m, mb, mn
/t/	tickle, mitt, sipped	t, tt, ed
/d/	die, loved	d, ed
/n/	nice, knight, gnat	n, kn, gn
/k/	cup, kite, duck, chorus, folk, quiet	k, c, ck, ch, lk, q
/g/	girl, Pittsburgh	g, gh
/ng/	sing, bank	ng, n
/f/	fluff, sphere, tough, calf	f, ff, gh, ph, lf
/v/	van, dove	v, ve
/s/	sit, pass, science, psychic	s, ss, sc, ps
/z/	zoo, jazz, nose, as, xylophone	z, zz, se, s, x
/th/	thin, breath, ether	th
/th/	this, breathe, either	th
/sh/	shoe, mission, sure, charade, precious, notion, mission, special	sh, ss, s, ch, sc, ti, si, ci
/zh/	measure, azure	s, z
/ch/	cheap, future, etch	ch, tch
/j/	judge, wage	j, dge, ge
/l/	lamb, call, single	l, ll, le
/r/	reach, wrap, her, fur, stir	r, wr, er/ur/ir
/y/	you, use, feud, onion	y, (u, eu), i
/w/	witch, queen	w, (q)u
/wh/	where	wh
/h/	house, whole	h, wh

*Graphemes in the word list are among the most common spellings, but the list does not include all possible graphemes for a given consonant. Most graphemes are more than one letter.

Vowels

Common graphemes (spellings) are listed in the following table for each of the vowel sounds. Note that the term *grapheme* refers to a letter or letter combination that corresponds to one speech sound.

Figure 9: Vowel Phoneme-Grapheme Correspondences in English

Phoneme	Word Examples	Common Graphemes (Spellings) for the Phoneme*
/ē/	see, these, me, eat, key, happy, chief, either	ee, e_e, -e, ea, ey, -y, ie, ei
/ĭ/	sit, gym	i, y
/ā/	make, rain, play, great, baby, eight, vein, they	a_e, ai, ay, ea, -y, eigh, ei, ey
/ĕ/	bed, breath	e, ea
/ă/	cat	a
/ī/	time, pie, cry, right, rifle	i_e, ie, -y, igh, -i
/ŏ/	fox, swap, palm	o, wa, al
/ŭ/	cup, cover, flood, tough	u, o, oo, ou
/aw/	saw, pause, call, water, bought	aw, au, all, wa, ough
/ō.	vote, boat, toe, snow, open	o_e, oa, oe, ow, o-,
/o͝o/	took, put, could	oo, u, ou
/ū/ [o͞o]	moo, tube, blue, chew, suit, soup	oo, u_e, ue, ew, ui, ou
/y//ū/	use, few, cute	u, ew, u_e
/oi/	boil, boy	oi, oy
/ow/	out, cow	ou, ow
er	her, fur, sir	er, ur, ir
ar	cart	ar
or	sport	or

* Graphemes in the word list are among the most common spellings, but the list does not include all possible graphemes for a given vowel. Many graphemes are more than one letter.

Phonological Awareness

General Progression of Phonological Awareness Skills (PreK–1)

Word Awareness (Spoken Language)

Move a chip or marker to stand for each word in a spoken sentence.

The dog barks. (3)
The brown dog barks. (4)
The brown dog barks loudly. (5)

Rhyme Recognition during Word Play

Say "yes" if the words have the same last sounds (rhyme):

clock/dock (y)
red/said (y)
down/boy (n)

Repetition and Creation of Alliteration during Word Play

Nice, neat Nathan
Chewy, chunky chocolate

Syllable Counting or Identification (Spoken Language)

A spoken syllable is a unit of speech organized around a vowel sound.

Repeat the word, say each syllable loudly, and feel the jaw drop on the vowel sound:

chair (1) table (2) gymnasium (4)

Onset and Rime Manipulation (Spoken Language)

Within a single syllable, *onset* is the consonant sound or sounds that may precede the vowel; *rime* is the vowel and all other consonant sounds that may follow the vowel.

Say the two parts slowly and then blend into a whole word:

school	onset - /sch/; rime - /ool/
star	onset - /st/; rime - /ar/
place	onset - /pl/; rime - /ace/
all	onset (none); rime - /all/

General Progression of Phoneme Awareness Skills (K–2)

Phonemes are individual speech sounds that are combined to create words in a language system. Phoneme awareness requires progressive differentiation of sounds in spoken words and the ability to think about and manipulate those sounds. Activities should lead to the pairing of phonemes (speech sounds) with *graphemes* (letters and letter combinations that represent those sounds) for the purposes of word recognition and spelling.

Phoneme Identity

Say the sound that begins these words. What is your mouth doing when you make that sound?

milk, mouth, monster /m/ — The lips are together, and the sound goes through the nose.
thick, thimble, thank /th/ — The tongue is between the teeth, and a hissy sound is produced.
octopus, otter, opposite /o/ — The mouth is wide open, and we can sing that sound.

Phoneme Isolation

What is the first speech sound in this word?

ship	/sh/
van	/v/
king	/k/
echo	/e/

What is the last speech sound in this word?

comb	/m/
sink	/k/
rag	/g/
go	/o/

Phoneme Blending (Spoken Language)

Blend the sounds to make a word:

(Provide these sounds slowly.)

/s/ /ay/	say
/ou/ /t/	out
/sh/ /ar/ /k/	shark
/p/ /o/ /s/ /t/	post

Phoneme Segmentation (Spoken Language)

Say each sound as you move a chip onto a line or sound box:

no	/n/ /o/
rag	/r/ /a/ /g/
socks	/s/ /o/ /k/ /s/
float	/f/ /l/ /oa/ /t/

Phoneme Addition (Spoken Language)

What word would you have if you added /th/ to the beginning of "ink"? (think)

What word would you have if you added /d/ to the end of the word "fine"? (find)

What word would you have if you added /z/ to the end of the word "frog"? (frogs)

Phoneme Substitution (Spoken Language)

Say "rope." Change /r/ to /m/. What word would you get? (mope)

Say "chum." Change /u/ to /ar/. What word would you get? (charm)

Say "sing." Change /ng/ to /t/. What word would you get? (sit)

Phoneme Deletion (Spoken Language)

Say "park." Now say "park" without /p/. (ark)

Say "four." Now say "four" without /f/. (or)

Orthography

Categories of Phoneme-Grapheme Correspondences

Figure 10: Consonant Graphemes with Definitions and Examples

Grapheme Type	Definition	Examples
Single letters	A single consonant letter can represent a consonant phoneme.	b, d, f, g, h, j, k, l, m, n, p, r, s, t, v, w, y, z
Doublets	A doublet uses two of the same letter to spell one consonant phoneme.	ff, ll, ss, zz
Digraphs	A digraph is a two- (di-) letter combination that stands for one phoneme; neither letter acts alone to represent the sound.	th, sh, ch, wh ph, ng (sing) gh (cough) [ck is a guest in this category]
Trigraphs	A trigraph is a three- (tri-) letter combination that stands for one phoneme; none of the letters acts alone to represent the sound.	-tch -dge
Consonants in blends	A blend contains two or three graphemes because the consonant sounds are separate and identifiable. A blend is not "one sound."	s-c-r (scrape) th-r (thrush) c-l (clean) f-t (sift) l-k (milk) s-t (most) and many more
Silent letter combinations	Silent letter combinations use two letters: one represents the phoneme, and the other is silent. Most of these are from Anglo-Saxon or Greek.	kn (knock), wr (wrestle), gn (gnarl), ps (psychology), rh (rhythm), -mb (crumb), -lk (folk), -mn (hymn), -st (listen)
Combination qu	These two letters, always together, usually stand for two sounds, /k/ /w/.	quickly

Figure 11: Vowel Graphemes with Definitions and Examples

Grapheme Type	Definition	Examples
Single letters	A single vowel letter stands for a vowel sound.	(short vowels) cap, hit, gem, clod, muss (long vowels) me, no, music
Vowel teams	A combination of two, three, or four letters stands for a vowel.	(short vowels) head, hook (long vowels) boat, sigh, weigh (diphthongs) toil, bout
Vowel-r combinations	A vowel, followed by r, works in combination with /r/ to make a unique vowel sound.	car, sport, her, burn, first
Vowel-consonant-e (VCe)	The vowel–consonant–silent e pattern is common for spelling a long vowel sound.	gate, eve, rude, hope, five

Figure 12: Six Types of Written Syllable Patterns

Syllable Type	Definition	Examples
Closed	A syllable with a short vowel spelled with a single vowel letter ending in one or more consonants	dap-ple hos-tel bev-erage
Vowel-C-e ("Magic e")	A syllable with a long vowel spelled with one vowel + one consonant + silent *e*	compete despite
Open	A syllable that ends with a long vowel sound, spelled with a single vowel letter	program table recent
Vowel Team	Syllables that use two to four letters to spell the vowel	beau-ti-ful train-er con-geal spoil-age
Vowel-r (r-controlled)	A syllable with **er, ir, or, ar**, or **ur** Vowel pronunciation often changes before /r/.	in-jur-ious con-sort char-ter
Consonant-le	An unaccented final syllable containing a consonant before /l/ followed by a silent *e*	dribble beagle little

Three Useful Principles for Chunking Longer Words into Syllables

1. VC-CV: Two or more consonants between two vowels
When syllables have two or more adjacent consonants between them, we divide between the consonants. The first syllable will be closed (with a short vowel).

sub-let nap-kin pen-ny emp-ty

2. V-CV and VC-V: One consonant between two vowels

a) First try dividing *before* the consonant. This makes the first syllable open and the vowel long. This strategy will work 75 percent of the time with VCV syllable division.

e-ven ra-bies de-cent ri-val

b) If the word is not recognized, try dividing *after* the consonant. This makes the first syllable closed and the vowel sound short. This strategy will work 25 percent of the time with VCV syllable division.

ev-er rab-id dec-ade riv-er

3. Consonant blends usually stick together. Do not separate digraphs when using the first two principles for decoding.

e-ther spec-trum se-quin

Morphemes Represented in English Orthography

Figure 13: Examples of Inflectional Suffixes in English

Inflection	Example
-s plural noun	I had two **eggs** for breakfast.
-s third person singular verb	She **gets** what she **wants**.
-ed past tense verb	We **posted** the notice.
-ing progressive tense verb	We will be **waiting** a long time.
-en past participle	He had **eaten** his lunch.
's possessive singular	The **frog's** spots were brown.
-er comparative adjective	He is **taller** than she is.
-est superlative adjective	Tom is the **tallest** of all.

Examples of Derivational Suffixes in English

Derivational suffixes, such as *-ful*, *-ation*, and *-ity*, are more numerous than inflections and work in ways that inflectional suffixes do not. Most derivational suffixes in English come from the Latin layer of language. Derivational suffixes mark or determine part of speech (verb, noun, adjective, adverb) of the suffixed word. Suffixes such as *-ment*, *-ity*, and *-tion* turn words into nouns; *-ful*, *-ous*, and *-al* turn words into adjectives; *-ly* turns words into adverbs.

nature (n. — from nat, birth)	permit (n. or v.)
natural (adj.)	permission (n.)
naturalize (v.)	permissive (adj.)
naturalizing (v.)	permissible (adj.)
naturalistic (adj.)	permissibly (adv.)

Writing

Definitions of the Standards' Three Text Types

Argument

Arguments are used for many purposes—to change the reader's point of view, to bring about some action on the reader's part, or to ask the reader to accept the writer's explanation or evaluation of a concept, issue, or problem. An argument is a reasoned, logical way of demonstrating that the writer's position, belief, or conclusion is valid. In English language arts, students make claims about the worth or meaning of a literary work or works. They defend their interpretations or judgments with evidence from the text(s) they are writing about. In history/social studies, students analyze evidence from multiple primary and secondary sources to advance a claim that is best supported by the evidence, and they argue for a historically or empirically situated interpretation. In science, students make claims in the form of statements or conclusions that answer questions or address problems. Using data in a scientifically acceptable form, students marshal evidence and draw on their understanding of scientific concepts to argue in support of their claims. Although young children are not able to produce fully developed logical arguments, they develop a variety of methods to extend and elaborate their work by providing examples, offering reasons for their assertions, and explaining cause and effect. These kinds of expository structures are steps on the road to argument. In grades K–5, the term "opinion" is used to refer to this developing form of argument.

Informational/Explanatory Writing

Informational/explanatory writing conveys information accurately. This kind of writing serves one or more closely related purposes: to increase readers' knowledge of a subject, to help readers better understand a procedure or process, or to provide readers with an enhanced comprehension of a concept. Informational/explanatory writing addresses matters such as types (*What are the different types of poetry?*) and components (*What are the parts of a motor?*); size, function, or behavior (*How big is the United States? What is an X-ray used for? How do penguins find food?*); how things work (*How does the legislative branch of government function?*); and why things happen (*Why do some authors blend genres?*). To produce this kind of writing, students draw from what they already know and from primary and secondary sources. With practice, students become better able to develop a controlling idea and a coherent focus on a topic and more skilled at selecting and incorporating relevant examples, facts, and details into their writing. They are also able to use a variety of techniques to convey information, such as naming, defining, describing, or differentiating different types or parts; comparing or contrasting ideas or concepts; and citing an anecdote or a scenario to illustrate a point. Informational/explanatory writing includes a wide array of genres, including academic genres such as literary analyses, scientific and historical reports, summaries, and précis writing as well as forms of workplace and functional writing such as instructions, manuals, memos, reports, applications, and résumés. As students advance through the grades, they expand their repertoire of informational/explanatory genres and use them effectively in a variety of disciplines and domains.

Although information is provided in both arguments and explanations, the two types of writing have different aims. Arguments seek to make people believe that something is true or to persuade people to change their beliefs or behavior. Explanations, on the other hand, start with the assumption of truthfulness and answer questions about why or how. Their aim is to make the reader understand rather than to persuade him or her to accept a certain point of view. In short, arguments are used for persuasion and explanations for clarification.

Like arguments, explanations provide information about causes, contexts, and consequences of processes, phenomena, states of affairs, objects, terminology, and so on. However, in an argument, the writer not only gives information but also presents a case with the "pros" (supporting ideas) and "cons" (opposing ideas) on a debatable issue. Because an argument deals with whether the main claim is true, it demands empirical descriptive evidence, statistics, or definitions for support. When writing an argument, the writer supports his or her claim(s) with sound reasoning and relevant and sufficient evidence.

Narrative Writing

Narrative writing conveys experience, either real or imaginary, and uses time as its deep structure. It can be used for many purposes, such as to inform, instruct, persuade, or entertain. In English language arts, students produce narratives that take the form of creative fictional stories, memoirs, anecdotes, and autobiographies. Over time, they learn to provide visual details of scenes, objects, or people; to depict specific actions (for example, movements, gestures,

Creative Writing—beyond Narrative

The narrative category does not include all of the possible forms of creative writing, such as many types of poetry. The Standards leave the inclusion and evaluation of other such forms to teacher discretion.

postures, and expressions); to use dialogue and interior monologue that provide insight into the narrator's and characters' personalities and motives; and to manipulate pace to highlight the significance of events and create tension and suspense. In history/social studies, students write narrative accounts about individuals. They also construct event models of what happened, selecting from their sources only the most relevant information. In science, students write narrative descriptions of the step-by-step procedures they follow in their investigations so that others can replicate their procedures and (perhaps) reach the same results. With practice, students expand their repertoire and control of different narrative strategies.

Texts that Blend Types

Skilled writers many times use a blend of these three text types to accomplish their purposes. For example, *The Longitude Prize*, included above and in Appendix B, embeds narrative elements within a largely expository structure. Effective student writing can also cross the boundaries of type, as does the grade 12 student sample "Fact vs. Fiction and All the Grey Space In Between" found in Appendix C.

The Special Place of Argument in the Standards

While all three text types are important, the Standards put particular emphasis on students' ability to write sound arguments on substantive topics and issues, as this ability is critical to college and career readiness. English and education professor Gerald Graff (2003) writes that "argument literacy" is fundamental to being educated. The university is largely an "argument culture," Graff contends; therefore, K–12 schools should "teach the conflicts" so that students are adept at understanding and engaging in argument (both oral and written) when they enter college. He claims that because argument is not standard in most school curricula, only 20 percent of those who enter college are prepared in this respect. Theorist and critic Neil Postman (1997) calls argument the soul of an education because argument forces a writer to evaluate the strengths and weaknesses of multiple perspectives. When teachers ask students to consider two or more perspectives on a topic or issue, something far beyond surface knowledge is required: students must think critically and deeply, assess the validity of their own thinking, and anticipate counterclaims in opposition to their own assertions.

"Argument" and "Persuasion"

When writing to persuade, writers employ a variety of persuasive strategies. One common strategy is an appeal to the credibility, character, or authority of the writer (or speaker). When writers establish that they are knowledgeable and trustworthy, audiences are more likely to believe what they say. Another is an appeal to the audience's self-interest, sense of identity, or emotions, any of which can sway an audience. A logical argument, on the other hand, convinces the audience because of the perceived merit and reasonableness of the claims and proofs offered rather than either the emotions the writing evokes in the audience or the character or credentials of the writer. The Standards place special emphasis on writing logical arguments as a particularly important form of college- and career-ready writing.

The unique importance of argument in college and careers is asserted eloquently by Joseph M. Williams and Lawrence McEnerney (n.d.) of the University of Chicago Writing Program. As part of their attempt to explain to new college students the major differences between good high school and college writing, Williams and McEnerney define *argument* not as "wrangling" but as "a serious and focused conversation among people who are intensely interested in getting to the bottom of things *cooperatively*":

> Those values are also an integral part of your education in college. For four years, you are asked to read, do research, gather data, analyze it, think about it, and then communicate it to readers in a form . . . which enables them to assess it and use it. You are asked to do this not because we expect you all to become professional scholars, but because in just about any profession you pursue, you will do research, think about what you find, make decisions about complex matters, and then explain those decisions—usually in writing—to others who have a stake in your decisions being sound ones. In an Age of Information, what most professionals do is research, think, and make arguments. (And part of the value of doing your own thinking and writing is that it makes you much better at evaluating the thinking and writing of others.) (ch. 1)

In the process of describing the special value of argument in college- and career-ready writing, Williams and McEnerney also establish argument's close links to research in particular and to knowledge building in general, both of which are also heavily emphasized in the Standards.

Much evidence supports the value of argument generally and its particular importance to college and career readiness. A 2009 ACT national curriculum survey of postsecondary instructors of composition, freshman English, and survey of American literature courses (ACT, Inc., 2009) found that "write to argue or persuade readers" was virtually tied with "write to convey information" as the most important type of writing needed by incoming college students. Other curriculum surveys, including those conducted by the College Board (Milewski, Johnson, Glazer, & Kubota, 2005) and

the states of Virginia and Florida[6], also found strong support for writing arguments as a key part of instruction. The 2007 writing framework for the National Assessment of Educational Progress (NAEP) (National Assessment Governing Board, 2006) assigns persuasive writing the single largest targeted allotment of assessment time at grade 12 (40 percent, versus 25 percent for narrative writing and 35 percent for informative writing). (The 2011 prepublication framework [National Assessment Governing Board, 2007] maintains the 40 percent figure for persuasive writing at grade 12, allotting 40 percent to writing to explain and 20 percent to writing to convey experience.) Writing arguments or writing to persuade is also an important element in standards frameworks for numerous high-performing nations.[7]

Specific skills central to writing arguments are also highly valued by postsecondary educators. A 2002 survey of instructors of freshman composition and other introductory courses across the curriculum at California's community colleges, California State University campuses, and University of California campuses (Intersegmental Committee of the Academic Senates of the California Community Colleges, the California State University, and the University of California, 2002) found that among the most important skills expected of incoming students were articulating a clear thesis; identifying, evaluating, and using evidence to support or challenge the thesis; and considering and incorporating counterarguments into their writing. On the 2009 ACT national curriculum survey (ACT, Inc., 2009), postsecondary faculty gave high ratings to such argument-related skills as "develop ideas by using some specific reasons, details, and examples," "take and maintain a position on an issue," and "support claims with multiple and appropriate sources of evidence."

The value of effective argument extends well beyond the classroom or workplace, however. As Richard Fulkerson (1996) puts it in *Teaching the Argument in Writing*, the proper context for thinking about argument is one "in which the goal is not victory but a good decision, one in which all arguers are at risk of needing to alter their views, one in which a participant takes seriously and fairly the views different from his or her own" (pp. 16–17). Such capacities are broadly important for the literate, educated person living in the diverse, information-rich environment of the twenty-first century.

[6]Unpublished data collected by Achieve, Inc.
[7]See, for example, frameworks from Finland, Hong Kong, and Singapore as well as Victoria and New South Wales in Australia.

Speaking and Listening

The Special Role of Speaking and Listening in K–5 Literacy

If literacy levels are to improve, the aims of the English language arts classroom, especially in the earliest grades, must include oral language in a purposeful, systematic way, in part because it helps students master the printed word. Besides having intrinsic value as modes of communication, listening and speaking are necessary prerequisites of reading and writing (Fromkin, Rodman, & Hyams, 2006; Hulit, Howard, & Fahey, 2010; Pence & Justice, 2007; Stuart, Wright, Grigor, & Howey, 2002). The interrelationship between oral and written language is illustrated in the table below, using the distinction linguists make between *receptive language* (language that is heard, processed, and understood by an individual) and *expressive language* (language that is generated and produced by an individual).

Figure 14: Receptive and Expressive Oral and Written Language

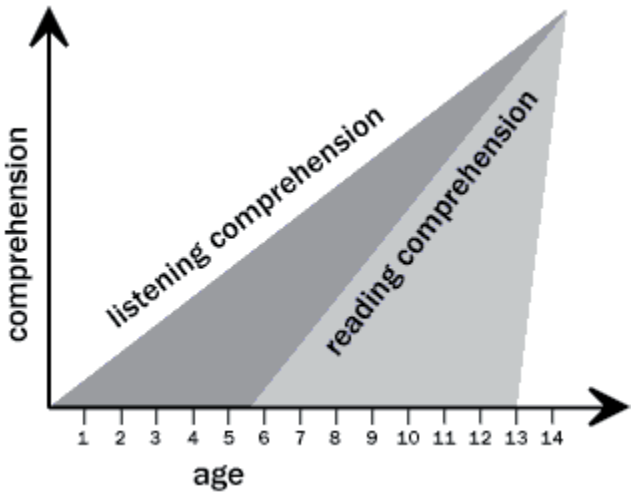
	Receptive Language	Expressive Language
Oral Language	Listening	Speaking
Written Language	Reading (decoding + comprehension)	Writing (handwriting, spelling, written composition)

Oral language development precedes and is the foundation for written language development; in other words, oral language is primary and written language builds on it. Children's oral language competence is strongly predictive of their facility in learning to read and write: listening and speaking vocabulary and even mastery of syntax set boundaries as to what children can read and understand no matter how well they can decode (Catts, Adolf, & Weismer, 2006; Hart & Risley, 1995; Hoover & Gough, 1990: Snow, Burns, & Griffin, 1998).

For children in preschool and the early grades, receptive and expressive abilities do not develop simultaneously or at the same pace: receptive language generally precedes expressive language. Children need to be able to understand words before they can produce and use them.

Oral language is particularly important for the youngest students. Hart and Risley (1995), who studied young children in the context of their early family life and then at school, found that the total number of words children had heard as preschoolers predicted how many words they understood and how fast they could learn new words in kindergarten. Preschoolers who had heard more words had larger vocabularies once in kindergarten. Furthermore, when the students were in grade 3, their early language competence from the preschool years still accurately predicted their language and reading comprehension. The preschoolers who had heard more words, and subsequently had learned more words orally, were better readers. In short, early language advantage persists and manifests itself in higher levels of literacy. A meta-analysis by Sticht and James (1984) indicates that the importance of oral language extends well beyond the earliest grades. As illustrated in the graphic below, Sticht and James found evidence strongly suggesting that children's listening comprehension outpaces reading comprehension until the middle school years (grades 6–8).

Figure 15: Listening and Reading Comprehension, by Age



The research strongly suggests that the English language arts classroom should explicitly address the link between oral and written language, exploiting the influence of oral language on a child's later ability to read by allocating instructional time to building children's listening skills, as called for in the Standards. The early grades should not focus on decoding alone, nor should the later grades pay attention only to building reading comprehension. Time should be devoted to reading fiction and content-rich selections aloud to young children, just as it is to providing those same children with the skills they will need to decode and encode.

This focus on oral language is of greatest importance for the children most at risk—children for whom English is a second language and children who have not been exposed at home to the kind of language found in written texts (Dickinson & Smith, 1994). Ensuring that all children in the United States have access to an excellent education requires that issues of oral language come to the fore in elementary classrooms.

Read-Alouds and the Reading-Speaking-Listening Link

Generally, teachers will encourage children in the upper elementary grades to read texts independently and reflect on them in writing. However, children in the early grades—particularly kindergarten through grade 3—benefit from participating in rich, structured conversations with an adult in response to written texts that are read aloud, orally comparing and contrasting as well as analyzing and synthesizing (Bus, Van Ijzendoorn, & Pellegrini, 1995; Feitelstein, Goldstein, Iraqui, & Share, 1993; Feitelstein, Kita, & Goldstein, 1986; Whitehurst et al., 1988). The Standards acknowledge the importance of this aural dimension of early learning by including a robust set of K–3 Speaking and Listening standards and by offering in Appendix B an extensive number of read-aloud text exemplars appropriate for K–1 and for grades 2–3.

Because, as indicated above, children's listening comprehension likely outpaces reading comprehension until the middle school years, it is particularly important that students in the earliest grades build knowledge through being read to as well as through reading, with the balance gradually shifting to reading independently. By reading a story or nonfiction selection aloud, teachers allow children to experience written language without the burden of decoding, granting them access to content that they may not be able to read and understand by themselves. Children are then free to focus their mental energy on the words and ideas presented in the text, and they will eventually be better prepared to tackle rich written content on their own. Whereas most titles selected for kindergarten and grade 1 will need to be read aloud exclusively, some titles selected for grades 2–5 may be appropriate for read-alouds as well as for reading independently. Reading aloud to students in the upper grades should not, however, be used as a substitute for independent reading by students; read-alouds at this level should supplement and enrich what students are able to read by themselves.

Language

Overview

The Standards take a hybrid approach to matters of conventions, knowledge of language, and vocabulary. As noted in the table below, certain elements important to reading, writing, and speaking and listening are included in those strands to help provide a coherent set of expectations for those modes of communication.

Figure 16: Elements of the Language Standards
in the Reading, Writing, and Speaking and Listening Strands

Strand	Standard
Reading	**R.CCR.4.** Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
Writing	**W.CCR.5.** Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
Speaking and Listening	**SL.CCR.6.** Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

In many respects, however, conventions, knowledge of language, and vocabulary extend across reading, writing, speaking, and listening. Many of the conventions-related standards are as appropriate to formal spoken English as they are to formal written English. Language choice is a matter of craft for both writers and speakers. New words and phrases are acquired not only through reading and being read to but also through direct vocabulary instruction and (particularly in the earliest grades) through purposeful classroom discussions around rich content.

The inclusion of Language standards in their own strand should not be taken as an indication that skills related to conventions, knowledge of language, and vocabulary are unimportant to reading, writing, speaking, and listening; indeed, they are inseparable from such contexts.

Conventions and Knowledge of Language

Teaching and Learning the Conventions of Standard English

Development of Grammatical Knowledge

Grammar and usage development in children and in adults rarely follows a linear path. Native speakers and language learners often begin making new errors and seem to lose their mastery of particular grammatical structures or print conventions as they learn new, more complex grammatical structures or new usages of English, such as in college-level persuasive essays (Bardovi-Harlig, 2000; Bartholomae, 1980; DeVilliers & DeVilliers, 1973; Shaughnessy, 1979). These errors are often signs of language development as learners synthesize new grammatical and usage knowledge with their current knowledge. Thus, students will often need to return to the same grammar topic in greater complexity as they move through K–12 schooling and as they increase the range and complexity of the texts and communicative contexts in which they read and write. The Standards account for the recursive, ongoing nature of grammatical knowledge in two ways. First, the Standards return to certain important language topics in higher grades at greater levels of sophistication. For instance, instruction on verbs in early elementary school (K–3) should address simple present, past, and future tenses; later instruction should extend students' knowledge of verbs to other tenses (progressive and perfect tenses[8] in grades 4 and 5), mood (modal auxiliaries in grade 4 and grammatical mood in grade 8) and voice (active and passive voice in grade 8). Second, the Standards identify with an asterisk (*) certain skills and understandings that students are to be introduced to in basic ways at lower grades but that are likely in need of being

[8]Though progressive and perfect are more correctly *aspects* of verbs rather than *tenses*, the Standards use the more familiar notion here and throughout for the sake of accessibility.

retaught and relearned in subsequent grades as students' writing and speaking matures and grows more complex. (See "Progressive Language Skills in the Standards," below.)

Making Appropriate Grammar and Usage Choices in Writing and Speaking

Students must have a strong command of the grammar and usage of spoken and written standard English to succeed academically and professionally. Yet there is great variety in the language and grammar features of spoken and written standard English (Biber, 1991; Krauthamer, 1999), of academic and everyday standard English, and of the language of different disciplines (Schleppegrell, 2001). Furthermore, in the twenty-first century, students must be able to communicate effectively in a wide range of print and digital texts, each of which may require different grammatical and usage choices to be effective. Thus, grammar and usage instruction should acknowledge the many varieties of English that exist and address differences in grammatical structure and usage between these varieties in order to help students make purposeful language choices in their writing and speaking (Fogel & Ehri, 2000; Wheeler & Swords, 2004). Students must also be taught the *purposes* for using particular grammatical features in particular disciplines or texts; if they are taught simply to vary their grammar and language to keep their writing "interesting," they may actually become more confused about how to make effective language choices (Lefstein, 2009). The Standards encourage this sort of instruction in a number of ways, most directly through a series of grade-specific standards associated with Language CCR standard 3 that, beginning in grade 1, focuses on making students aware of language variety.

Using Knowledge of Grammar and Usage for Reading and Listening Comprehension

Grammatical knowledge can also aid reading comprehension and interpretation (Gargani, 2006; Williams, 2000, 2005). Researchers recommend that students be taught to use knowledge of grammar and usage, as well as knowledge of vocabulary, to comprehend complex academic texts (García & Beltrán, 2003; Short & Fitzsimmons, 2007; RAND Reading Study Group, 2002). At the elementary level, for example, students can use knowledge of verbs to help them understand the plot and characters in a text (Williams, 2005). At the secondary level, learning the grammatical structures of nonstandard dialects can help students understand how accomplished writers such as Harper Lee, Langston Hughes, and Mark Twain use various dialects of English to great advantage and effect, and can help students analyze setting, character, and author's craft in great works of literature. Teaching about the grammatical patterns found in specific disciplines has also been shown to help English language learners' reading comprehension in general and reading comprehension in history classrooms in particular (Achugar, Schleppegrell, & Oteíza, 2007; Gargani, 2006).

As students learn more about the patterns of English grammar in different communicative contexts throughout their K–12 academic careers, they can develop more complex understandings of English grammar and usage. Students can use this understanding to make more purposeful and effective choices in their writing and speaking and more accurate and rich interpretations in their reading and listening.

Progressive Language Skills in the Standards

While all of the Standards are cumulative, certain Language skills and understandings are more likely than others to need to be retaught and relearned as students advance through the grades. Beginning in grade 3, the Standards note such "progressive" skills and understandings with an asterisk (*) in the main document; they are also summarized in the table on pages 29 and 55 of that document as well as on page 34 of this appendix. These skills and understandings should be mastered at a basic level no later than the end of the grade in which they are introduced in the Standards. In subsequent grades, as their writing and speaking become more sophisticated, students will need to learn to apply these skills and understandings in more advanced ways.

The following example shows how one such task—ensuring subject-verb agreement, formally introduced in the Standards in grade 3—can become more challenging as students' writing matures. The sentences in the table below are taken verbatim from the annotated writing samples found in Appendix C. The example is illustrative only of a general development of sophistication and not meant to be exhaustive, to set firm grade-specific expectations, or to establish a precise hierarchy of increasing difficulty in subject-verb agreement.

Figure 17: Example of Subject-Verb Agreement Progression across Grades

Example	Condition
Horses are so beautiful and fun to ride. [Horses, grade 3]	Subject and verb next to each other
When I started out the door, I noticed that Tigger and Max were following me to school. [Glowing Shoes, grade 4]	Compound subject joined by *and*
A mother or female horse is called a mare. [Horses, grade 3]	Compound subject joined by *or*; each subject takes a singular verb[1]
The first thing to do is research, research, research! [Zoo Field Trip, grade 4]	Intervening phrase between subject and verb
If the watershed for the pools is changed, the condition of the pools changes. [A Geographical Report, grade 7]	Intervening phrase between each subject and verb suggesting a different number for the verb than the subject calls for
Another was the way to the other evil places. [Getting Shot and Living Through It, grade 5] *All his stories are the same type.* [Author Response: Roald Dahl, grade 5] *All the characters that Roald Dahl ever made were probably fake characters.* [Author Response: Roald Dahl, grade 5] *One of the reasons why my cat Gus is the best pet is because he is a cuddle bug.* [A Pet Story About My Cat . . . Gus, grade 6]	Indefinite pronoun as subject, with increasing distance between subject and verb

[1]In this particular example, or female horse should have been punctuated by the student as a nonrestrictive appositive, but the sentence as is illustrates the notion of a compound subject joined by or.

Figure 18: Language Progressive Skills, by Grade

The following standards, marked with an asterisk (*) in the main Standards document, are particularly likely to require continued attention in higher grades as they are applied to increasingly sophisticated writing and speaking.

Standard	Grade(s)							
	3	4	5	6	7	8	9–10	11–12
L.3.1f. Ensure subject-verb and pronoun-antecedent agreement.								
L.3.3a. Choose words and phrases for effect.								
L.4.1f. Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons.								
L.4.1g. Correctly use frequently confused words (e.g., *to/too/two; there/their*).								
L.4.3a. Choose words and phrases to convey ideas precisely.*								
L.4.3b. Choose punctuation for effect.								
L.5.1d. Recognize and correct inappropriate shifts in verb tense.								
L.5.2a. Use punctuation to separate items in a series.†								
L.6.1c. Recognize and correct inappropriate shifts in pronoun number and person.								
L.6.1d. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents).								
L.6.1e. Recognize variations from standard English in their own and others' writing and speaking, and identify and use strategies to improve expression in conventional language.								
L.6.2a. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements.								
L.6.3a. Vary sentence patterns for meaning, reader/listener interest, and style.‡								
L.6.3b. Maintain consistency in style and tone.								
L.7.1c. Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.								
L.7.3a. Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.								
L.8.1d. Recognize and correct inappropriate shifts in verb voice and mood.								
L.9–10.1a. Use parallel structure.								

* Subsumed by L.7.3a
† Subsumed by L.9–10.1a
‡ Subsumed by L.11–12.3a

Vocabulary

Acquiring Vocabulary

> Words are not just words. They are the nexus—the interface—between communication and thought. When we read, it is through words that we build, refine, and modify our knowledge. What makes vocabulary valuable and important is not the words themselves so much as the understandings they afford.
>
> Marilyn Jager Adams (2009, p. 180)

The importance of students acquiring a rich and varied vocabulary cannot be overstated. Vocabulary has been empirically connected to reading comprehension since at least 1925 (Whipple, 1925) and had its importance to comprehension confirmed in recent years (National Institute of Child Health and Human Development, 2000). It is widely accepted among researchers that the difference in students' vocabulary levels is a key factor in disparities in academic achievement (Baumann & Kameenui, 1991; Becker, 1977; Stanovich, 1986) but that vocabulary instruction has been neither frequent nor systematic in most schools (Biemiller, 2001; Durkin, 1978; Lesaux, Kieffer, Faller, & Kelley, 2010; Scott & Nagy, 1997).

Research suggests that if students are going to grasp and retain words and comprehend text, they need incremental, repeated exposure in a variety of contexts to the words they are trying to learn. When students make multiple connections between a new word and their own experiences, they develop a nuanced and flexible understanding of the word they are learning. In this way, students learn not only what a word means but also how to use that word in a variety of contexts, and they can apply appropriate senses of the word's meaning in order to understand the word in different contexts (Landauer & Dumais, 1997; Landauer, McNamara, Dennis, & Kintsch, 2007; Nagy, Herman, & Anderson, 1985).

Initially, children readily learn words from oral conversation because such conversations are context rich in ways that aid in vocabulary acquisition: in discussions, a small set of words (accompanied by gesture and intonation) is used with great frequency to talk about a narrow range of situations children are exposed to on a day-to-day basis. Yet as children reach school age, new words are introduced less frequently in conversation, and consequently vocabulary acquisition eventually stagnates by grade 4 or 5 unless students acquire additional words from written context (Hayes & Ahrens, 1988).

Written language contains literally thousands of words more than are typically used in conversational language. Yet writing lacks the interactivity and nonverbal context that make acquiring vocabulary through oral conversation relatively easy, which means that purposeful and ongoing concentration on vocabulary is needed (Hayes & Ahrens, 1988). In fact, at most between 5 and 15 percent of new words encountered upon first reading are retained, and the weaker a student's vocabulary is the smaller the gain (Daneman & Green, 1986; Hayes & Ahrens, 1988; Herman, Anderson, Pearson, & Nagy, 1987; Sternberg & Powell, 1983). Yet research shows that if students are truly to understand what they read, they must grasp upward of 95 percent of the words (Betts, 1946; Carver, 1994; Hu & Nation, 2000; Laufer, 1988).

The challenge in reaching what we might call "lexical dexterity" is that, in any given instance, it is not the entire spectrum of a word's history, meanings, usages, and features that matters but only those aspects that are relevant at that moment. Therefore, for a reader to grasp the meaning of a word, two things must happen: first, the reader's internal representation of the word must be sufficiently complete and well articulated to allow the intended meaning to be known to him or her; second, the reader must understand the context well enough to select the intended meaning from the realm of the word's possible meanings (which in turn depends on understanding the surrounding words of the text).

Key to students' vocabulary development is building rich and flexible word knowledge. Students need plentiful opportunities to use and respond to the words they learn through playful informal talk, discussion, reading or being read to, and responding to what is read. Students benefit from instruction about the connections and patterns in language. Developing in students an analytical attitude toward the logic and sentence structure of their texts, alongside an awareness of word parts, word origins, and word relationships, provides students with a sense of how language works such that syntax, morphology, and etymology can become useful cues in building meaning as students encounter new words and concepts (Beck, McKeown, & Kucan, 2008). Although direct study of language is essential to student progress, most word learning occurs indirectly and unconsciously through normal reading, writing, listening, and speaking (Miller, 1999; Nagy, Anderson, & Herman, 1987).

As students are exposed to and interact with language throughout their school careers, they are able to acquire understandings of word meanings, build awareness of the workings of language, and apply their knowledge to comprehend and produce language.

Three Tiers of Words

Isabel L. Beck, Margaret G. McKeown, and Linda Kucan (2002, 2008) have outlined a useful model for conceptualizing categories of words readers encounter in texts and for understanding the instructional and learning challenges that words in each category present. They describe three levels, or *tiers*, of words in terms of the words' commonality (more to less frequently occurring) and applicability (broader to narrower).

While the term *tier* may connote a hierarchy, a ranking of words from least to most important, the reality is that all three tiers of words are vital to comprehension and vocabulary development, although learning tier two and three words typically requires more deliberate effort (at least for students whose first language is English) than does learning tier one words.

- **Tier One words** are the words of everyday speech usually learned in the early grades, albeit not at the same rate by all children. They are not considered a challenge to the average native speaker, though English language learners of any age will have to attend carefully to them. While Tier One words are important, they are not the focus of this discussion.

- **Tier Two words** (what the Standards refer to as *general academic* words) are far more likely to appear in written texts than in speech. They appear in all sorts of texts: informational texts (words such as *relative*, *vary*, *formulate*, *specificity*, and *accumulate*), technical texts (*calibrate*, *itemize*, *periphery*), and literary texts (*misfortune*, *dignified*, *faltered*, *unabashedly*). Tier Two words often represent subtle or precise ways to say relatively simple things—*saunter* instead of *walk*, for example. Because Tier Two words are found across many types of texts, they are highly generalizable.

- **Tier Three words** (what the Standards refer to as *domain-specific* words) are specific to a domain or field of study (*lava*, *carburetor*, *legislature*, *circumference*, *aorta*) and key to understanding a new concept within a text. Because of their specificity and close ties to content knowledge, Tier Three words are far more common in informational texts than in literature. Recognized as new and "hard" words for most readers (particularly student readers), they are often explicitly defined by the author of a text, repeatedly used, and otherwise heavily scaffolded (e.g., made a part of a glossary).

Tier Two Words and Access to Complex Texts

Because Tier Three words are obviously unfamiliar to most students, contain the ideas necessary to a new topic, and are recognized as both important and specific to the subject area in which they are instructing students, teachers often define Tier Three words prior to students encountering them in a text and then reinforce their acquisition throughout a lesson. Unfortunately, this is not typically the case with Tier Two words, which by definition are not unique to a particular discipline and as a result are not the clear responsibility of a particular content area teacher. What is more, many Tier Two words are far less well defined by contextual clues in the texts in which they appear and are far less likely to be defined explicitly within a text than are Tier Three words. Yet Tier Two words are frequently encountered in complex written texts and are particularly powerful because of their wide applicability to many sorts of reading. Teachers thus need to be alert to the presence of Tier Two words and determine which ones need careful attention.

Tier Three Words and Content Learning

This normal process of word acquisition occurs up to four times faster for Tier Three words when students have become familiar with the domain of the discourse and encounter the word in different contexts (Landauer & Dumais, 1997). Hence, vocabulary development for these words occurs most effectively through a coherent course of study in which subject matters are integrated and coordinated across the curriculum and domains become familiar to the student over several days or weeks.

Examples of Tier Two and Tier Three Words in Context

The following annotated samples call attention to Tier Two and **Tier Three** words in particular texts and, by singling them out, foreground the importance of these words to the meaning of the texts in which they appear. Both samples appear without annotations in Appendix B.

Example 1: *Volcanoes* (Grades 4–5 Text Complexity Band

Excerpt

> In **early times**, no one knew how **volcanoes formed** or why they **spouted red-hot molten** rock. In **modern times**, scientists began to study **volcanoes**. They still don't know all the answers, but they know much about how a **volcano** works.

> Our planet made up of many **layers** of rock. The top **layers** of **solid** rock are called the **crust**. Deep beneath the **crust** is the **mantle**, where it is so hot that some rock melts. The melted, or **molten,** rock is called **magma**.
>
> **Volcanoes** are **formed** when **magma** pushes its way up through the crack in Earth's **crust**. This is called a **volcanic eruption**. When **magma pours forth** on the **surface**, it is called **lava**.
>
> Simon, Seymour. *Volcanoes.* New York: HarperCollins, 2006. (2006)

Of the Tier Two words, among the most important to the overall meaning of the excerpt is **layers**. An understanding of the word **layers** is necessary both to visualize the structure of the crust ("the top **layers** of **solid** rock are called the **crust**") and to grasp the notion of the planet being composed of **layers**, of which the **crust** and the **mantle** are uppermost. Perhaps equally important are the word **spouted** and the phrase **pours forth**; an understanding of each of these is needed to visualize the action of a volcano. The same could be said of the word **surface**. Both **layers** and **surface** are likely to reappear in middle and high school academic texts in both literal and figurative contexts ("this would seem plausible on the surface"; "this story has layers of meaning"), which would justify more intensive instruction in them in grades 4–5.

Tier Three words often repeat; in this excerpt, all of the Tier Three words except **mantle** and **lava** appear at least twice. **Volcano(es)** appears four times—five if **volcanic** is counted. As is also typical with Tier Three words, the text provides the reader with generous support in determining meaning, including explicit definitions (e.g., "the melted, or **molten**, rock is called **magma**") and repetition and overlapping sentences (e.g., . . . called the **crust**. Deep beneath the **crust** . . .).

Example 2: *Freedom Walkers* (Grades 6–8 Text Complexity Band)

Excerpt

> From the Introduction: "Why They Walked"
>
> Not so long ago in Montgomery, Alabama, the color of your skin **determined** where you could sit on a public bus. If you happened to be an African American, you had to sit in the back of the bus, even if there were empty seats up front.
>
> Back then, **racial segregation** was the rule throughout the American South. Strict laws—called **"Jim Crow"** laws—enforced a system of **white supremacy** that **discriminated** against blacks and kept them in their place as **second-class** citizens.
>
> People were separated by race from the moment they were born in **segregated** hospitals until the day they were buried in **segregated** cemeteries. Blacks and whites did not attend the same schools, **worship** in the same churches, eat in the same restaurants, sleep in the same hotels, drink from the same water fountains, or sit together in the same movie theaters.
>
> In Montgomery, it was against the law for a white person and a Negro to play checkers on public property or ride together in a taxi.
>
> Most southern blacks were denied their right to vote. The biggest **obstacle** was the **poll tax**, a special tax that was required of all voters but was too costly for many blacks and for poor whites as well. Voters also had to pass a **literacy** test to prove that they could read, write, and understand the U.S. Constitution. These tests were often **rigged** to **disqualify** even highly educated blacks. Those who overcame the **obstacles** and insisted on **registering** as voters faced threats, **harassment** and even physical violence. As a result, African Americans in the South could not express their **grievances** in the voting booth, which for the most part, was closed to them. But there were other ways to protest, and one day a half century ago, the black citizens in Montgomery rose up in protest and united to demand their rights—by walking peacefully.
>
> It all started on a bus.
>
> Freedman, Russell. *Freedom Walkers: The Story of the Montgomery Bus Boycott.* New York: Holiday House, 2006. (2006)

The first Tier Two word encountered in the excerpt, **determined**, is essential to understanding the overall meaning of the text. The power of **determined** here lies in the notion that skin color in Montgomery, Alabama, at that time was the causal agent for all that follows. The centrality of **determined** to the topic merits the word intensive attention. Its study is further merited by the fact that it has multiple meanings, is likely to appear in future literary and informational texts, and is part of a family of related words (*determine*, *determination*, *determined*, *terminate*, *terminal*).

Understanding the excerpt's Tier Three words is also necessary to comprehend the text fully. As was the case in example 1, these words are often repeated and defined in context. **Segregation**, for example, is introduced in the second paragraph, and while determining its meaning from the sentence in which it appears might be difficult, several closely related concepts (**white supremacy**, **discriminated**, **second-class**) appears in the next sentence to provide more context.

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A Note on International Sources for the Standards

In the course of developing the Standards, the writing team consulted numerous international models, including those from Ireland, Finland, New Zealand, Australia (by state), Canada (by province), Singapore, the United Kingdom, and others. Several patterns emerging from international standards efforts influenced the design and content of the Standards:

(1) *Other nations pay equal attention to what students read and how they read*. Many countries set standards for student reading by providing a reading list. The United Kingdom has standards for the "range and content" of student reading. While lacking the mandate to set particular reading requirements, the Standards nonetheless follow the spirit of international models by setting explicit expectations for the range, quality, and complexity of what students read along with more conventional standards describing how well students must be able to read.

(2) *Students are required to write in response to sources*. In several international assessment programs, students are confronted with a text or texts and asked to gather evidence, analyze readings, and synthesize content. The Standards likewise require students to "draw evidence from literary or informational texts to support analysis, reflection, and research" (Writing CCR standard 9).

(3) *Writing arguments and writing informational/explanatory texts are priorities*. The Standards follow international models by making writing arguments and writing informational/explanatory texts the dominant modes of writing in high school to demonstrate readiness for college and career.

Glossary of Key Terms

Every effort has been made to ensure that the phrasing of the Standards is as clear and free of jargon as possible. When used, specialized and discipline-specific terms (e.g., *simile*, *stanza*, *declarative sentence*) typically conform to their standard definition, and readers are advised to consult high-quality dictionaries or standard resources in the field for clarification. The terms defined below are limited to those words and phrases particularly important to the Standards and that have a meaning unique to this document. *CCSS* refers to the main Common Core State Standards document; the names of various sections (e.g., "Reading") refer to parts of this appendix.

Definitions of many important terms associated with reading foundational skills appear in Reading Foundational Skills, pages 19–25. Descriptions of the Standards' three writing types (argument, informative/explanatory writing, and narrative) can be found in Writing, pages 26–27.

Domain-specific words and phrases – Vocabulary specific to a particular field of study (domain), such as the human body (CCSS, p. 32); in the Standards, *domain-specific words and phrases* are analogous to Tier Three words (Language, p. 36).

Editing – A part of writing and preparing presentations concerned chiefly with improving the clarity, organization, concision, and correctness of expression relative to task, purpose, and audience; compared to *revising*, a smaller-scale activity often associated with surface aspects of a text; see also *revising*, *rewriting*

Emergent reader texts – Texts consisting of short sentences comprised of learned sight words and CVC words; may also include rebuses to represent words that cannot yet be decoded or recognized; see also *rebus*

Evidence – Facts, figures, details, quotations, or other sources of data and information that provide support for claims or an analysis and that can be evaluated by others; should appear in a form and be derived from a source widely accepted as appropriate to a particular discipline, as in details or quotations from a text in the study of literature and experimental results in the study of science

Focused question – A query narrowly tailored to task, purpose, and audience, as in a research query that is sufficiently precise to allow a student to achieve adequate specificity and depth within the time and format constraints

Formal English – See *standard English*

General academic words and phrases – Vocabulary common to written texts but not commonly a part of speech; in the Standards, *general academic words and phrases* are analogous to Tier Two words and phrases (Language, p 36)

Independent(ly) – A student performance done without *scaffolding* from a teacher, other adult, or peer; in the Standards, often paired with *proficient(ly)* to suggest a successful student performance done without *scaffolding*; in the Reading standards, the act of reading a text without scaffolding, as in an assessment; see also *proficient(ly)*, *scaffolding*

More sustained research project – An investigation intended to address a relatively expansive query using several sources over an extended period of time, as in a few weeks of instructional time

Point of view – Chiefly in literary texts, the narrative point of view (as in first- or third-person narration); more broadly, the position or perspective conveyed or represented by an author, narrator, speaker, or character

Print or digital (texts, sources) – Sometimes added for emphasis to stress that a given standard is particularly likely to be applied to electronic as well as traditional texts; the standards are generally assumed to apply to both

Proficient(ly) – A student performance that meets the criterion established in the Standards as measured by a teacher or assessment; in the Standards, often paired with *independent(ly)* to suggest a successful student performance done without *scaffolding*; in the Reading standards, the act of reading a text with comprehension; see also *independent(ly)*, *scaffolding*

Rebus – A mode of expressing words and phrases by using pictures of objects whose names resemble those words

Revising – A part of writing and preparing presentations concerned chiefly with a reconsideration and reworking of the content of a text relative to task, purpose, and audience; compared to *editing*, a larger-scale activity often associated with the overall content and structure of a text; see also *editing*, *rewriting*

Rewriting – A part of writing and preparing presentations that involves largely or wholly replacing a previous, unsatisfactory effort with a new effort, better aligned to task, purpose, and audience, on the same or a similar topic or theme; compared to *revising*, a larger-scale activity more akin to replacement than refinement; see also *editing*, *revising*

Scaffolding – Temporary guidance or assistance provided to a student by a teacher, another adult, or a more capable peer, enabling the student to perform a task he or she otherwise would not be able to do alone, with the goal of fostering the student's capacity to perform the task on his or her own later on*

Short research project – An investigation intended to address a narrowly tailored query in a brief period of time, as in a few class periods or a week of instructional time

Source – A text used largely for informational purposes, as in research; see also *text*

Standard English – In the Standards, the most widely accepted and understood form of expression in English in the United States; used in the Standards to refer to formal English writing and speaking; the particular focus of Language standards 1 and 2 (CCSS, pp. 25, 27, 52, 54)

Technical subjects – A course devoted to a practical study, such as engineering, technology, design, business, or other workforce-related subject; a technical aspect of a wider field of study, such as art or music

Text complexity – The inherent difficulty of reading and comprehending a text combined with consideration of reader and task variables; in the Standards, a three-part assessment of text difficulty that pairs qualitative and quantitative measures with reader-task considerations (CCSS, pp. ; Reading, pp. xx)

Text complexity band – A range of text difficulty corresponding to grade spans within the Standards; specifically, the spans from grades 2–3, grades 4–5, grades 6–8, grades 9–10, and grades 11–CCR (college and career readiness)

Textual evidence – See *evidence*

With prompting and support/with (some) guidance and support – See *scaffolding*

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* Though Vygotsky himself does not use the term *scaffolding*, the educational meaning of the term relates closely to his concept of the zone of proximal development. See L. S. Vygotsky (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.