# Accelerating Productive Digital Innovation that Supports the Common Core State Standards

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# Overview

In June 2010, the Common Core State Standards Initiative, led by the National Governors Association and the Council of Chief State School Officers, released the Common Core State Standards (CCSS) for Mathematics, English Language Arts, and Literacy in History/Social Studies, Science and Technical Subjects. Forty-six states, three U.S. territories, and the District of Columbia[1] have adopted the standards in English language arts/literacy and mathematics. The standards are the result of a state-led initiative that drew on the expertise of hundreds of teachers, researchers and content experts from across the country; they define a staircase to college and career readiness, building on the best of previous state standards and evidence from international comparisons as well as domestic reports and recommendations.

In the past, each state developed its own standards. The broad adoption of the CCSS means that what was formerly a patchwork of state standards across the country has been transformed into one set of strong, focused, consistent expectations for college and career readiness for all students, providing an unprecedented opportunity for innovation. To achieve the promise of this innovation, it is important that developers (publishers, product managers, editors, software developers, marketers and professional development providers and others creating resources to support the implementation of the CCSS) understand the structure of the standards and the major shifts they represent.

Additionally, the CCSS require that instructional resources not treat the standards as merely a sum of disjointed parts of equal grain size or emphasis. To meet the mathematics standards, students sometimes need to work on one thing at a time and sometimes need to work on several things at once, passing up and down the content hierarchy; students will sometimes need to revisit previous learning in light of new knowledge. Above all, students will need to focus strongly on the major work of each grade in mathematics. Materials for English language arts (ELA) that treat the standards as independent grains may lead to misinterpretation. To give an example, if the ELA standards are treated as independent grains, one might approach instruction by finding a text to match an isolated standard, in effect making the text a tool for teaching a specific standard, rather than mining each text for all it has to offer within the context of multiple standards. The independent and equally emphasized grain approach therefore avoids the richer task of dealing with complex text holistically. These and other issues of alignment are discussed more thoroughly throughout this guide.

This document aims to serve as a primer and guide toward responsible interpretation of the standards for those creating programs and resources, particularly in a digital environment, to support the implementation

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1 For a complete list of states that have adopted the Common Core State Standards refer to the list posted at http://www.corestandards.org/in-the-states. The three U.S. territories are Guam, the Virgin Islands, and the American Samoa Islands; in addition, the Department of Defense Education Activity has signed on to the Common Core State Standards.

of the CCSS and improve student achievement. The guide will attempt to help the reader gain a full understanding of:

- the key shifts required by the CCSS and what it means to be aligned to those shifts;
- criteria for developing resources that accurately and responsively support the standards; and
- the architecture/structure of the standards and guidelines to help interpret that structure.

Throughout this guide there are several references to the CCSS. Users of this guide may want to have a copy of the CCSS available while reading in order to refer to the indicated text in each case. The full text of the CCSS can be found on the Common Core State Standards Initiative's website: (http://www.corestandards.org/the-standards).

In addition, as states move from widespread adoption of the CCSS to implementation, there is a need to appropriately identify and link assets using a shared system of identifiers and a common XML representation. The Council of Chief State School Officers (CCSSO) and National Governors Association Center for Best Practices (NGA Center), have released an official, viable approach for publishing identifiers and XML designation to represent the standards. The Partnership for the Assessment of Readiness for College and Careers (PARCC), the Smarter Balanced Assessment Consortium (Smarter Balanced) and the State Educational Technology Directors Association (SETDA) – working in partnership with the CCSSO – have launched a collaborative, state-centric project ("Granular Identifiers and Metadata for the Common Core State Standards" or GIM-CCSS) to facilitate the long-term technical implementation of the CCSS in a digital format that meets the diversity of stakeholder needs in the field, while preserving the conceptual and structural integrity of the standards.[2] More information is included on both of these initiatives in this guide and on the Common Core State Standards Initiative's website: (http://www.corestandards.org/common-core-state-standards-official-identifiers-and-xml-representation).

2 http://www.setda.org/web/guest/Interoperability

# Key Shifts Required by the Common Core State Standards

The major implications of the Common Core State Standards can be captured at a high level by considering three key shifts for each subject. Understanding the shifts well will help users of the CCSS make informed decisions about resources, instructional decisions, implementation strategies, assessments, and professional development for the CCSS. The shifts in both ELA/literacy and mathematics provide a context for change that is not easily observable when examining standards individually. Software developers, publishers, professional development providers, educators and others creating resources to support the implementation of the CCSS who take the time to carefully read and understand the shifts outlined in this section will:

- more clearly see the differences between the CCSS and many standards used by states in the past;
- understand the connections between the standards as required by the CCSS; and
- be better equipped to develop materials that accurately align to the CCSS and provide meaningful opportunities for student achievement.

## The Three Shifts for ELA/Literacy

### 1. Building knowledge through content-rich nonfiction

The Common Core State Standards cover English language arts as well as literacy in history/social studies, science and technical subjects. The Standards follow the National Assessment for Educational Progress (NAEP) lead in balancing the reading of literature with the reading of informational texts, including texts in history/social studies, science, and technical subjects (see Table 1). The focus on building knowledge through content-rich nonfiction begins with a shift to a 50/50 balance between informational and literary reading in grades K-5, a departure from the current practice in which often the great preponderance of texts students read instructionally are fictional stories. By high school the standards require that 70 percent of what students read be informational text. It is important to note that the bulk of that percentage will be carried by non-ELA disciplines that do not study fictional texts - ELA teachers will continue to spend a lot of time with fiction. In grades 6-12, the standards for literacy in history/social studies, science and technical subjects ensure that students can independently build knowledge in these disciplines through reading and writing. On page 5 of the standards—where the distinction between literature and informational text is introduced—there is an explicit, unambiguous statement regarding the balance of texts relative to the disciplines

covered by the Standards: "... the ELA classroom must focus on literature (stories, drama, and poetry) as well as literary nonfiction, [and] a great deal of informational reading in grades 6–12 must take place in other classes…" In a follow up footnote the point is reiterated: "The percentages… reflect the sum of student reading, not just reading in ELA settings. Teachers of senior English classes, for example, are not required to devote 70 percent of reading to informational texts. Rather, 70 percent of student reading across the grade should be informational." Part of the motivation behind the interdisciplinary approach to literacy promulgated by the standards is extensive research establishing the need for college and career ready students to be proficient in reading complex informational text independently in a variety of content areas. Most of the required reading in college and workforce training programs is informational in structure and challenging in content. It is also important to understand that these guidelines of percentages are only broad relative comparisons. It would be inappropriate to use these percentages to determine precise numbers of titles, minutes, pageviews or pages.

**Table 1. Distribution of Literary and Informational Passages by Grade in the 2009 NAEP Reading Framework**

| Grade | Literary | Informational |
|---|---|---|
| 4 | 50% | 50% |
| 8 | 45% | 55% |
| 12 | 30% | 70% |

*Source: National Assessment Governing Board. (2008). Reading framework for the 2009 National Assessment of Educational Programs. Washington, DC: US Government Printing Office.*

***"Building knowledge systematically in ELA is like giving children various pieces of a puzzle in each grade that, over time, will form one big picture."*** -- ELA/Literacy CCSS, pp. 33

The ELA/literacy standards also require that students deliberately practice the skill of using a coherent set of nonfiction texts to build knowledge. The cycle is virtuous - as students' knowledge of a topic builds, they read more complex text in the subject and further build both their knowledge and their ability to read even more complex text. Table 2 illustrates the purposeful sequencing of text to help students build knowledge using a specific example – *The Human Body.*

## Table 2. Exemplar Texts for Building Knowledge on a Topic (The Human Body) Across Grades

| Exemplar Texts on a Topic Across Grades | K | 1 | 2-3 | 4-5 |
|---|---|---|---|---|
| **The Human Body**<br><br>Students can begin learning about the human body starting in kindergarten and then review and extend their learning during each subsequent grade. | **The five senses and associated body parts**<br>• *My Five Senses* by Aliki (1989)<br>• *Hearing* by Maria Rius (1985)<br>• *Sight* by Maria Rius (1985)<br>• *Smell* by Maria Rius (1985)<br>• *Taste* by Maria Rius (1985)<br>• *Touch* by Maria Rius (1985)<br>**Taking care of your body: overview (hygiene, diet, exercise, rest)**<br>• *My Amazing Body: A First Look at Health & Fitness* by Pat Thomas (2001)<br>• *Get Up and Go!* by Nancy Carlson (2008)<br>• *Go Wash Up* by Doering Tourville (2008)<br>• *Sleep* by Paul Showers (1997)<br>• *Fuel the Body* by Doering Tourville (2008) | **Introduction to the systems of the human body and associated body parts**<br>• *Under Your Skin: Your Amazing Body* by Mick Manning (2007)<br>• *Me and My Amazing Body* by Joan Sweeney (1999)<br>• *The Human Body* by Gallimard Jeunesse (2007)<br>• *The Busy Body Book* by Lizzy Rockwell (2008)<br>• *First Encyclopedia of the Human Body* by Fiona Chandler (2004)<br>**Taking care of your body: Germs, diseases, and preventing illness**<br>• *Germs Make Me Sick* by Marilyn Berger (1995)<br>• *Tiny Life on Your Body* by Christine Taylor-Butler (2005)<br>• *Germ Stories* by Arthur Kornberg (2007)<br>• *All About Scabs* by Genichiro Yagu (1998) | **Digestive and excretory systems**<br>• *What Happens to a Hamburger* by Paul Showers (1985)<br>• *The Digestive System* by Christine Taylor-Butler (2008)<br>• *The Digestive System* by Rebecca L. Johnson (2006)<br>• *The Digestive System* by Kristin Petrie (2007)<br>**Taking care of your body: Healthy eating and nutrition**<br>• *Good Enough to Eat* by Lizzy Rockwell (1999)<br>• *Showdown at the Food Pyramid* by Rex Barron (2004)<br>**Muscular, skeletal, and nervous systems**<br>• *The Mighty Muscular and Skeletal Systems* Crabtree Publishing (2009)<br>• *Muscles* by Seymour Simon (1998)<br>• *Bones* by Seymour Simon (1998)<br>• *The Astounding Nervous System* Crabtree Publishing (2009)<br>• *The Nervous System* by Joelle Riley (2004) | **Circulatory system**<br>• *The Heart* by Seymour Simon (2006)<br>• *The Heart and Circulation* by Carol Ballard (2005)<br>• *The Circulatory System* by Kristin Petrie (2007)<br>• *The Amazing Circulatory System* by John Burstein (2009)<br>**Respiratory system**<br>• *The Lungs* by Seymour Simon (2007)<br>• *The Respiratory System* by Susan Glass (2004)<br>• *The Respiratory System* by Kristin Petrie (2007)<br>• *The Remarkable Respiratory System* by John Burstein (2009)<br>**Endocrine system**<br>• *The Endocrine System* by Rebecca Olien (2006)<br>• *The Exciting Endocrine System* by John Burstein (2009) |

*Source: http://www.corestandards.org/assets/CCSSI_ELA%20Standards.pdf*

## 2. Reading, writing and speaking grounded in evidence from text, both literary and informational

Rather than asking students questions that they can answer from their prior knowledge or experience, the standards expect students to answer questions that depend on their having read the text. As stated in the ELA/Literacy standards, "Students cite specific evidence when offering an oral or written interpretation of a text. They use relevant evidence when supporting their own points in writing and speaking, making their reasoning clear to the reader or listener, and they constructively evaluate others' use of evidence."[3] Students should be writing to sources, i.e. using evidence from texts to present careful analyses, well-defended claims, and clear information. In reading, the standards focus on students' ability to read carefully and grasp

3 Common Core State Standards in ELA/Literacy, p. 7.

information, arguments, ideas and detail based on text evidence. The standards require the cultivation of narrative writing and in the later grades a command of sequence and detail for effective argumentative and informational writing. A hallmark of instruction aligned to this shift is the presence of high-quality text-dependent questions. Text-dependent questions do not require information or evidence from outside the text or texts; they establish what follows and what does not follow from the text itself. Rigorous text-dependent questions require students to demonstrate that they not only can follow the details of what is explicitly stated, but are able to make valid claims that square with all the evidence in the text. They also involve analysis, synthesis, evaluation and point towards the most difficult parts of text. The effective use of text-dependent questions also provides an opportunity to address the academic language and syntax that are features of complex text – the features that make text difficult for students. Simply put, good questions can make students stronger and more capable readers. Table 3 illustrates some examples of text-dependent questions.

## Table 3. Understanding Text-Dependent Questions

| Not Text-Dependent | | Text-Dependent |
|---|---|---|
| In "Casey at the Bat," Casey strikes out. Describe a time when you failed at something. | → | What makes Casey's experiences at bat humorous? |
| In "Letter from a Birmingham Jail," Dr. King discusses nonviolent protest. Discuss, in writing, a time when you wanted to fight against something that you felt was unfair. | → | What can you infer from King's letter about the letter that he received? |
| In "The Gettysburg Address" Lincoln says the nation is dedicated to the proposition that all men are created equal. Why is equality an important value to promote? | → | "The Gettysburg Address" mentions the year 1776. According to Lincoln's speech, why is this year significant to the events described in the speech? |

The CCSS are standards for college and career readiness, and most college and career writing requires students to take a position or inform others while citing evidence from text, rather than providing a personal opinion untethered to any evidence. Students need to develop the skill of grounding their responses in evidence from the text. Requiring students to use evidence can and should occur during oral discussions with readalouds in the youngest grades and continuing across all grades and content areas. This shift is important because being able to locate and deploy evidence is a hallmark of the strong reader and writer. For additional research and information supporting key elements of the standards, refer to Appendix A to the CCSS in ELA/Literacy (www.corestandards.org/assets/Appendix_A.pdf).

## 3. Regular practice with complex text and its academic language

The standards build a staircase of complexity of the text students must read to be ready for the demands of college and careers. They not only include the expectations about the skills in ELA/literacy that students develop, such as complexity of syntax - sentence structure, etc. - but also the skills in relation to particular texts – both how students read, write, speak, listen as well as what they are reading. The CCSS are the first to require text complexity as a specific standard: "Read and comprehend complex literary and informational texts independently and proficiently." (Reading Standard 10, ELA/Literacy standards, p. 10) This shift to regular practice with complex text is crucial to preparing students for college and careers. 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. What chiefly distinguished the performance of those students who had earned the benchmark score or better from those who had not was their ability to answer questions associated with complex texts. The findings held for male and female students, students from all racial/ethnic groups, and students from families with widely varying incomes.[4] The ACT report is one part of an extensive body of research attesting to the importance of text complexity in reading achievement.

**Table 4. Features of Complex Text**

- Subtle and/or frequent transitions
- Multiple and/or subtle themes and purpose
- Density of information
- Unfamiliar settings, topics and events
- Lack of repetition, overlap or similarity in words and sentences
- Complex sentences
- Uncommon vocabulary
- Lack of words, sentences or paragraphs that review or pull things together for the student
- Longer paragraphs
- Any text structure which is less narrative and/or mixes structure

Varied and complex sentence structures in combination with academic language are key features of complex texts. Table 4 outlines a summary of the additional features of complex text. It is important to note that academic language in this context does not mean the technical words unique to a discipline or unique to the study of ELA, but rather the words that readers will find in all types of complex texts from different disciplines (such as "ignite" and "commit").

When choosing texts, three dimensions of text complexity should be considered: (1) quantitative measures to assign a text to a grade band; (2) qualitative measures[5] to locate a text within a specific grade band; and (3) professional judgment to decide how suited a text is for a specific instructional purpose with a particular set of students. Additional resources focused on text complexity are available at http://www.achievethecore.org/steal-these-tools/text-complexity. [6]

4 ACT, Inc. "Reading Between the Lines: What the ACT Reveals About College Readiness in Reading." (2006)

5 Appropriateness of the subject matter for a particular age range is often addressed when qualitatively considering the knowledge demands of a text, the density of information and the instances of unfamiliar settings, topics, or events within a text. Professional judgment is also an important factor in making decisions about age appropriateness.

6 www.achievethecore.org provides numerous resources to help determine text complexity including tools for Quantitative Analysis (http://www.achievethecore.org/steal-these-tools/text-complexity/quantitative-measures) and Sample Qualitative Scales for grade bands 2-3, 4-5, 6-8, 9-10, and 11-College and career readiness (http://www.achievethecore.org/steal-these-tools/text-complexity/qualitative-measures). For additional research and information supporting key elements of the standards, refer to Appendix A to the CCSS in ELA/Literacy (www.corestandards.org/assets/Appendix_A.pdf).

## The Three Shifts for Mathematics

### 1. Focus strongly where the Standards focus

*"Less topic coverage can be associated with higher scores on those topics covered because students have more time to master the content that is taught."*

> –Ginsburg et al., 2005, Reassessing U.S. International Mathematics Performance: New Findings from the 2003 TIMSS and PISA

*"This finding that postsecondary instructors target fewer skills as being of high importance is consistent with recent policy statements and findings raising concerns that some states require too many standards to be taught and measured, rather than focusing on the most important state standards for students to attain. … Because the postsecondary survey results indicate that a more rigorous treatment of fundamental content knowledge and skills needed for credit-bearing college courses would better prepare students for postsecondary school and work, states would likely benefit from examining their state standards and, where necessary, reducing them to focus only on the knowledge and skills that research shows are essential to college and career readiness and postsecondary success. …"*

> —ACT National Curriculum Survey 2009

For years national reports have called for greater focus in U.S. mathematics education. The Trends in International Mathematics and Science Study (TIMSS) and other international studies have concluded that mathematics education in the United States is a mile wide and an inch deep, in contrast to high-performing countries, where strong foundations are laid and then further knowledge is built on them. The design principle of mathematics instruction in those countries is focus with coherent progressions. The U.S. has lacked such discipline. Focus requires that we significantly narrow the scope of content in each grade so that students more deeply experience that which remains.

The strong focus of the standards in early grades is arithmetic along with the components of measurement that support it. That includes the concepts underlying arithmetic, the skills of arithmetic computation, and the ability to apply arithmetic to solve problems and put arithmetic to engaging uses. Arithmetic in the K–5 standards is an important life skill, as well as a thinking subject and a rehearsal for algebra in the middle grades. Table 5 outlines the areas of focus for each grade or grade span for K-8.

Focus remains important through the middle and high school grades in order to prepare students for college and careers; surveys suggest that postsecondary instructors value greater mastery of prerequisites over shallow exposure to a wide array of topics with dubious relevance to postsecondary work.

The standards focus deeply on the major work of each grade so that students can gain strong foundations: solid conceptual understanding, a high degree of procedural skill and fluency, and the ability to apply the

math they know to solve problems. Focus compromised by adding even a few additional topics is no longer focused. To developers of resources, the shift of focus literally means to drop certain topics, especially in the early grades. By focusing the major work of each grade on a few carefully selected major areas, the CCSS for Mathematics give teachers permission to significantly narrow and deepen the way time and energy is spent in the mathematics classroom. The focus of each grade is not taught in a single lesson or unit or introduced as a special event at some point in the year. Instead, the focus areas are present as the focus of mathematics instruction throughout the school year. Most importantly, this shift in instruction will give students time to learn, practice and master specific knowledge and skills that will serve as the foundation for the mathematics they will learn in later grades.

**Table 5. Focus Areas for Mathematics by Grade Level K-8**

| Grade | Focus Areas in Support of Rich Instruction and Expectations |
|---|---|
| K-2 | Addition and subtraction- concepts, skills, and problem solving and place value |
| 3-5 | Multiplication and division of whole numbers and fractions – concepts, skills, and problem solving |
| 6 | Ratios and proportional relationships; early expressions and equations |
| 7 | Ratios and proportional relationships; arithmetic of rational numbers |
| 8 | Linear algebra, linear functions |

*For further detail on the priorities for each grade, read Where To Focus: Math Shifts, Key Fluencies, and Major Work of Grade at http://www.achievethecore.org/steal-these-tools/focus-in-math.*

## 2. Coherence: Think across grades, and link to major topics within grades

Coherence is about making math make sense. Mathematics is not a list of disconnected tricks or mnemonics. It is an elegant subject in which powerful knowledge results from reasoning with a small number of principles such as place value and properties of operations. The standards define progressions of learning that leverage these principles as they build knowledge over the grades.

When people talk about coherence, they often talk about making connections between topics. The most important connections are vertical: the links from one grade to the next that allow students to progress in their mathematical education. That is why it is critical to think across grades and examine the progressions in the standards to see how major content develops over time.

Connections at a single grade level can be used to improve focus, by tightly linking secondary topics to the major work of the grade. For example, in grade 3, bar graphs are not "just another topic to cover." Rather, the standard about bar graphs asks students to use information presented in bar graphs to solve word problems using the four operations of arithmetic. Instead of allowing bar graphs to detract from the focus on arithmetic, the standards are showing how bar graphs can be positioned in support of the major work of the grade. In this way coherence can support focus.

### 3. Rigor: in major topics pursue conceptual understanding, procedural skills and fluency, and application with equal intensity

The word "rigor" takes on a very specific meaning in the context of the third shift in mathematics. To help students meet the expectations of the standards, educators will need to pursue, with equal intensity, three aspects of rigor in the major work of each grade: conceptual understanding, procedural skill and fluency, and applications. The word "understand" is used in the standards to set explicit expectations for conceptual understanding, the word "fluently" is used to set explicit expectations for fluency, and the phrase "real-world problems" and the star symbol (*) to set expectations and flag opportunities for applications and modeling.

To date, curricula have not always been balanced in their approach to these three aspects of rigor. Some curricula stress fluency in computation, without acknowledging the role of conceptual understanding in attaining fluency. Some stress conceptual understanding, without acknowledging that fluency requires separate classroom work of a different nature. Some stress pure mathematics, without acknowledging first of all that applications can be highly motivating for students, and moreover, that a mathematical education should make students fit for more than just their next mathematics course. At another extreme, some curricula focus solely on applications, without acknowledging that math doesn't teach itself.

The standards do not take sides in these ways, but rather they set high expectations for all three components of rigor in the major work of each grade. Of course, that makes it necessary that we first follow through on the focus in the standards—otherwise we are asking teachers and students to do more with less.

## What does alignment to the shifts mean (and not mean)?

***These Standards are not intended to be new names for old ways of doing business. They are a call to take the next step. … It is time to recognize that Standards are not just promises to our children, but promises we intend to keep.***

–Common Core State Standards in Mathematics, p. 5

Frequently, alignment to a new set of standards has been approached as a cross-walking exercise, resulting in large Excel spreadsheets that line up and match topics one by one. But there are several reasons why this type of exercise does not work for the CCSS. For one, cross-walking can result in large percentages of "aligned

content" while obscuring the fact that the materials in question align not at all to the letter or the spirit of the standards being implemented. Cross-walking exercises could result in all of the former standards or materials having a place within the CCSS - particularly in mathematics, given the principle of focus, this is a dangerous conclusion. Developers of instructional resources should take pains to ensure that in any alignment exercise, the three shifts in ELA/literacy and the three shifts in mathematics are central to the exercise around re-purposing existing material or creating new material to support the CCSS. Another pitfall with crosswalking or alignment studies has been that they have been limited to a superficial analysis of topics - the danger here being a basic reshuffling of existing activities and resources - in other words, new names for old ways of doing business.

# Criteria for Programs and Materials that support the Common Core State Standards[7]

The following criteria articulate the most significant elements of the Common Core State Standards and lay out implications for programs and materials. They can help teachers, curriculum and product/software developers, and publishers better understand what should be included or excluded from materials and other resources in order to be clearly aligned to the CCSS. The criteria illustrate what shifts must take place in the next generation of material, including paring away elements that distract or are at odds with the CCSS. Note that the criteria apply to materials and tools, not to teachers or teaching. The criteria are based on the shifts for each content area and therefore serve as a guide for accurately and responsively developing materials that support the CCSS.

## Using the Criteria

The criteria can be used in several ways:

***I. Informing purchases and adoptions.*** Schools or districts evaluating materials and tools for purchase can use the criteria to evaluate claims of alignment. States reviewing materials and tools for adoption can incorporate these criteria into their rubrics. Publishers and developers of other resources currently modifying their programs, or designing new materials and tools, can use the criteria to shape these projects.

***II. Working with previously purchased materials.*** Most existing materials and tools likely fail to meet one or more of these criteria, even in cases where alignment to the Standards is claimed. But the pattern of failure is likely to be informative. States and districts need not wait for "the perfect book" to arrive, but can use the criteria now to carry out a thoughtful plan to modify or combine existing resources in such a way that students' actual learning experiences approach the key shifts of the CCSS. Publishers and developers of other resources can develop innovative materials and tools specifically aimed at addressing identified weaknesses of widespread textbooks or programs.

***III. Reviewing teacher-developed materials and guiding their development.*** Publishers aren't the only source of instructional materials; teachers also create materials and tools, ranging in length from an individual lesson up to an entire unit or longer. States, districts, schools, and teachers themselves can use the criteria

7 Content in this section derived in full from the Publishers' Criteria in ELA/Literacy K-2, 3-12 (Updated April 2012) and Mathematics K-8 (July 2012). The Publishers' Criteria can be located at the Common Core State Standards Initiative's website: www.corestandards.org. The criteria will be updated to include Mathematics in high school in Winter 2013.

to assess the alignment of teacher-developed materials to the Standards and guide the development of new materials aligned to the Standards.

***IV. Professional development.*** The criteria can be used to support activities that help communicate the shifts in the Standards. For example, teachers can analyze existing math materials to reveal how they treat the major work of the grade, or assess how well materials attend to the three aspects of rigor, or determine which problems are key to developing the ideas and skills of the grade. For ELA/Literacy materials, teachers can assess if existing materials reflect the balance between information and literary reading as required by the CCSS, help students develop coherent knowledge within each grade or across years, practice developing text-dependent questions for existing text, or provide all students with the opportunity to engage with complex texts.

The standards do not dictate the acceptable forms of instructional resources—to the contrary, they are an historic opportunity to raise student achievement through innovation. Materials and tools of very different forms can meet the criteria that follow, including workbooks, multi-year programs, and targeted interventions. For example, materials and tools that treat a single important topic or domain in mathematics might be valuable to consider. Or in ELA/Literacy, materials that provide a variety of text-dependent questions related to a series of texts on a topic might also be valuable. Resources that focus on building knowledge through nonfiction text could help to address a common gap in current materials.

Innovative resources include digital or online materials and tools. Digital materials offer substantial promise for conveying mathematics in new and vivid ways and customizing learning. In a digital or online format, diving deeper and reaching back and forth across the grades is easy and often useful. Focus and coherence can be greatly enhanced through dynamic navigation—though, if such capabilities are used poorly, focus and coherence could also be greatly diminished. Digital materials can also offer opportunities for students to interact with text and build natural connections between reading, writing, speaking, and listening. Online and digital tools can provide students with the ability to engage with text evidence, academic vocabulary, and complex sentences in dynamic ways.

An overarching criterion for materials and tools is that they provide supports for special populations such as students with disabilities, English language learners, and gifted students. [8]

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8 Slides from a brief and informal presentation by Phil Daro about mathematical language and English language learners can be found at http://db.tt/VARV3ebl.

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## English Language Arts and Literacy

There are three sections that describe the ELA/Literacy criteria: one outlines the criteria for grades K-2, another outlines the criteria for grades 3-12, and the third outlines criteria for history/social studies, science, and technical subjects for grades 6-12.

### Criteria for Grades K–2

In the early grades, developing materials that accurately align to the spirit of the CCSS requires attention to the foundations of reading. While the goal for readers of all ages is to be able to understand and learn from what they read and to express such knowledge clearly through speaking and writing about text, primary grade instruction in the foundations of reading is essential to ensure that reading problems are prevented and that most students will read well enough to benefit from grade level instruction. While these criteria begin with the foundational skills, they are not an end in and of themselves; rather, they are necessary and important components of an effective, comprehensive reading program designed to develop proficient readers with the capacity to comprehend texts across a range of types and disciplines.

**Digital Opportunity #1**

The requirement that students encounter sufficiently complex text through **listening** even while they are learning how to read and write, creates opportunity for digital support through audio innovations.

In kindergarten through the second grade, the most notable shifts in the standards when compared to state standards include explicit preparation to read informational text and a requirement that students' reading material be substantive and linked in meaningful ways to content area learning. They also include a more in-depth approach to vocabulary development and a requirement that students encounter sufficiently complex text through listening even while they are learning how to read and write.

The standards provide a coherent approach to reading comprehension in the early years built on anchor standards that extend into third through twelfth grade learning. Finally, the standards cultivate a wide range of writing including narrative expression of experiences real and imagined as well as sharing information and opinions.

The criteria for grades K-2 consist of three parts:

*I. Key criteria that should guide the teaching of reading foundations*

The Common Core State Standards offer specific guidance on reading foundations that should be incorporated into materials and other resources so that students will be well on their way to decoding automatically and reading with fluency by the time they finish second grade. While progress in fluency with more complex text should continue through third grade and beyond, and gains in understanding of language structure should continue through the elementary grades, the first three years of instruction (K-2) are the most critical for preventing students from falling behind and preventing reading failure. The standards articulate a well-developed set of skills and habits that taken collectively lay the foundation for students to achieve competence in reading comprehension. (See pp. 14–16 of the ELA CCSS for more detail.)

Materials aligned with the CCSS need to provide sequential, cumulative instruction and practice opportunities for the full range of foundational skills. The elements should be gradually interwoven—from simple to complex—so that students come to understand and use the system of correspondences that characterize written English. The code systems on which reading and writing depend include letters, the speech sounds of spoken language (phonemes), the correspondences between phonemes and graphemes (phonics) and the representation of meaningful word parts (morphemes). Automatic and accurate word recognition is the expected outcome of this instruction. By learning to decipher word forms students will be able to access word meanings in print, and make the shift to independent, close reading of complex text.

***1. Materials allow for flexibility in meeting the needs of a wide range of students.*** Students come to school unevenly prepared to read. While the primary purpose of a beginning reading instruction program is to ensure that all students learn how to read, some students will move ahead quickly and should be able to move on once they have demonstrated mastery of the basic content. Additionally, adjustments should be made to programs now in use to refine content and methodology that will likely "catch" more of those students who otherwise would fall behind and require remedial work.

**Digital Opportunity #2**

The requirement that materials allow flexibility to meet the needs of all students opens a door of digital opportunity for scaffolding and supporting foundational reading instruction through personal customization and adaptivity.

***2. Materials include effective instruction for all aspects of foundational reading (including distributed practice).***[9] Materials that are aligned to the standards should provide explicit and systematic instruction and diagnostic support in concepts of print, phonological awareness, phonics, vocabulary development, syntax, and fluency. These foundational skills are necessary and central components of an effective, comprehensive reading program designed to develop proficient readers with the capacity to comprehend texts across a range of types and disciplines. Materials should provide ample opportunities for students to understand and fully learn the spelling/sound patterns necessary — though not sufficient — to become successful readers. This goal is accomplished when students can transfer knowledge of these patterns to words not previously seen or studied. Because students differ widely in how much exposure and practice they need to master foundational skills, materials also need to incorporate high-quality activities for

**Digital Opportunity #3**

Personalized and asynchronous learning can be facilitated by digital systems which allow learning to be custom-tailored to individual needs.

9 Details about what explicitly should be taught is outlined in the Foundational Reading Standards and further explicated in Appendix A of the Standards, including but not limited to the explicit teaching of the speech sounds of English orthography, instruction in the nature of the speech sound system (what is a vowel; what is a consonant; how is a consonant different from a vowel), and instruction in letter formation as well as letter naming and alphabetic order. (www.corestandards.org/assets/Appendix_A.pdf)

those students who are able to reach facility with less practice. Those students who need less practice can enjoy activities such as extension assignments and especially more independent reading.

*3. Fluency is a particular focus of instructional materials.* Fluency in the early grades is a function of automaticity in basic skills in speech sound, letter, word, and phrase recognition, as well as knowledge of the meanings of the words that are being read. Materials should include routines and guidance that will remind teachers to monitor the consolidation of skills as students are learning them. Consolidation is usually accomplished through systematic and cumulative instruction, sufficient practice to achieve accuracy, and a variety of specific fluency-building techniques supported by research. These include monitored partner reading, choral reading, repeated readings with text, short timed practice that is slightly challenging to the reader, and involving the student in monitoring progress toward a specific fluency goal.

Teacher support for fluency instruction should explicitly recognize that reading rates vary with the type of text being read and the purpose for reading. For example, comprehension of texts that are of greater informational density or complexity generally requires slower reading. Therefore, if fluency is being monitored to identify those students who need more work in this area, passages that have been standardized through research should be used to assess students' fluency.

Many educational technology products have effectively supported English language learners by scaffolding potentially difficult vocabulary with reference materials including dictionaries and cognates. CCSS essentially describes value in similar types of supports and scaffolds for all students; for example enabling considerate, contextual definitions for difficult vocabulary that might otherwise impede reading comprehension.

### Digital Opportunity #4

The requirement that students encounter sufficiently complex text through listening even while they are learning how to read and write, creates opportunity for digital audio supports. Such supports will also help students develop fluency.

*4. Materials focus on academic vocabulary prevalent in complex texts throughout reading, writing, listening, and speaking instruction.* When they enter school, students differ markedly in their vocabulary knowledge. The entire curriculum should address this vocabulary gap early and systematically or it will expand and accelerate. All materials should provide opportunities for wider ranging and more intensive vocabulary instruction for students with weaker vocabularies than their peers.

Instruction in science, social studies, and the arts will be a major vehicle for enhancing students' vocabulary because most new word learning takes place in the context of having to understand and express ideas about subject matter. Students should receive frequent instruction in word meanings and practice with a variety of vocabulary-building activities. For example, they should learn to examine the context of how the words are being used in the text, consider multiple meanings of common words, examine shades of meaning of words that overlap semantically, and choose words carefully to express ideas. As they learn to read meaningful word parts, such as verb markers and compara-

tive endings, the relationship between word form and word meaning should also be addressed. For English language learners, explicitly highlighting and linking cognates of key words with other languages can be very useful. Materials should use games, jokes, puns, and other forms of word play to enhance instruction and develop a sense of excitement about words.

Some students, including some English language learners, will also need support in mastering the meaning of high-frequency words that are essential to reading grade-level text. Supplemental resources will be necessary for supporting students who are developing knowledge of these words. Since teachers will often not have the time to teach explicitly all of the high-frequency words required, materials should make it possible for students to learn the words' meanings on their own, providing such things as student-friendly definitions for high-frequency words whose meanings cannot be inferred from the context.

### Digital Opportunity #5

Many educational technology products have effectively supported English language learners by scaffolding potentially difficult vocabulary with reference materials including dictionaries and cognates. CCSS essentially describes value in similar types of supports and scaffolds for all students; for example enabling considerate, contextual definitions for difficult vocabulary that might otherwise impede reading comprehension.

***5. Materials offer assessment opportunities that measure progress in the foundations of reading.*** Activities used for assessment should clearly denote which standards are being emphasized, and materials should offer frequent and easily implemented assessments, including systems for record keeping and follow-up. These should include a framework and tools standardized by research in relation to established predictive benchmarks when fluency is being measured. Vocabulary development as well should be assessed using the most reliable and valid methods currently available.

### Digital Opportunity #6

Technology products can provide assessment features embedded in the software, which enable the facilitation and aggregation of student performance data to support data-driven instruction in the classroom.

*II. Key criteria that should guide the selection of texts for read-alouds and for students who already can read*

The CCSS strongly point to the necessity for teaching students how to read with texts that are written to facilitate accurate, independent, confident reading, and the consolidation of basic reading skills in 2nd and 3rd grade. Students who can read are much more likely to read.

The Common Core State Standards point strongly toward the integration of text reading skills with language comprehension instruction, even for those students who lag behind in achieving reading facility. That said, students should be guided into thoughtful reading of even the simplest texts used with beginning readers. To that end, all texts should contain some meaningful information or narrative content with which to develop students' comprehension. The criteria recommended below emphasize the need to provide all students with consistent opportunities to confront and comprehend grade-level text.

In addition to students learning to read texts at the K-2 level of complexity, the standards encourage students to encounter more complex texts to build knowledge through read-alouds. Students' early knowledge in areas like history and science should not be limited to what they can read on their own. Because students at these grades can listen to much more complex material than they can read themselves, read-aloud selections should be provided to the teachers in curriculum materials. These should be at levels of complexity well above what students can read on their own.

*1. Texts for each grade align with the requirements outlined in the Standards.* The Common Core State Standards hinge on students encountering appropriate texts at each grade level to develop the mature language skills and the conceptual knowledge they need for success in school and life. Beginning in grade 2, Reading Standard 10 outlines the band level of text complexity at which students need to demonstrate comprehension. (Appendix A in the ELA/Literacy Common Core State Standards gives further information on how text complexity can be measured and offers guidance to teachers and curriculum developers on selecting the texts their students read.)[10]

*2. All students (including those who are behind) have extensive opportunities to encounter grade-level text.* Far too often, students who have fallen behind are given only less complex texts rather than the instruction they need in the foundational skills in reading as well as vocabulary and other supports they need to read at an appropriate level of complexity. Complex text, whether accessed through individual reading or as a group reading activity, is a rich repository of information which all readers learn how to access. Complex text contains more sophisticated academic vocabulary, lends itself to more complex tasks, and is able to support rich dialogue.

Instruction for slower readers is most effective when it addresses all of the critical reading components in an integrated and coordinated manner. Students who need additional assistance, however, must not miss out on essential instruction their classmates are receiving to help them think deeply

10 Clear common standards for measuring text complexity, based on evidence and on the principles laid out in Appendix A, can be found at http://www.achievethecore.org/steal-these-tools/text-complexity.

about texts, participate in thoughtful discussions, and gain knowledge of both words and the world.

*3. Text selections are worth reading and re-reading.* The standards maintain that high-quality text selections should be consistently offered to students because they will encourage students and teachers to dig more deeply into their meanings than they would with lower quality material. Texts selected for inclusion should be well written and, as appropriate, richly illustrated. This principle applies equally to texts intended for reading aloud and texts for students to read by themselves. (For samples of appropriate quality of selection, see Appendix B of the Common Core State Standards.)

*4. Literacy programs shift the balance of texts and instructional time to include equal measures of literary and informational text.* The standards call for elementary curriculum materials to be recalibrated to reflect a mix of 50 percent literary and 50 percent informational text, including reading in ELA, science, social studies, and the arts. Achieving the appropriate balance between literary and informational text in the next generation of materials requires a significant shift in early literacy materials and instructional time so that scientific and historical text are given the same time and weight as literary text. (See p. 31 of the standards for details on how literature and informational texts are defined.)

In the last few years, informational texts that are rich and accessible to even first and second grades are available although many more such texts are needed. Because students at these grades can listen to much more complex material than they can read themselves, read-aloud selections should be provided for the teachers in the curriculum materials. These should be at levels of complexity well above what students can read on their own. Science and social studies in particular should be taught in such a way that students have access to the concepts and vocabulary through read-alouds beyond what they can read on their own.

**Digital Opportunity #7**

Read-aloud selections of materials that are well above what students can read on their own can be provided as collections of audio passages or whole audio books, whether on CD or digital reading devices.

To develop reading comprehension and vocabulary for all readers, the selected informational texts need to build a coherent body of knowledge within and across grades. (The sample series of texts regarding "The Human Body" provided on p. 33 of the Common Core State Standards offers an example of selecting texts to build knowledge coherently within and across grades. It includes both grade level texts and readaloud texts that illustrate the quality and complexity of student reading in the standards.)

*5. Additional materials aim to increase the regular independent reading of texts that appeal to students' interests while developing both their knowledge base and joy in reading.* These materials should ensure that all students have daily opportunities to read texts of their choice on their

## Table 6. Determining Which Reading Standards Can Be Addressed With a Particular Text

The text itself is the driver for what standards would logically be employed to comprehend it fully. Text-dependent questions and tasks need to be created in such a way that they activate the reading standards that would be useful and appropriate to solve some comprehension challenge the text presents. With careful attention to Standard 1 – use of evidence and Standard 10 – appropriately complex text and the development of text-dependent questions and tasks, standards 2 - 9 are regularly in play. Which standard in particular depends on the qualitative features of the text at hand. The CCSS reading standards are taught in service to the reader's comprehension of the text, so creating text-dependent questions offers frequent opportunities to engage multiple standards. This represents a major shift from current practice, where standards are often itemized.

own during and outside of the school day. Students need access to a wide range of materials on a variety of topics and genres both in their classrooms and in their school libraries to ensure that they have opportunities to independently read broadly and widely to build their knowledge, experience, and joy in reading. Materials will need to include texts at students' own reading level as well as texts with complexity levels that will challenge and motivate students. Texts should also vary in length and density, requiring students to slow down or read more quickly depending on their purpose for reading. In alignment with the standards and to acknowledge the range of students' interests, these materials should include informational texts as well as literature.

### *III. Key criteria for the development of high-quality, fully integrated materials that provide linear, cumulative skill progressions and practice with text-dependent questions and tasks*

Materials offered in support of reading comprehension should assist teachers and students in staying focused on the primary goal of instruction in these early years: developing proficient and fluent readers able to learn independently from a wide variety of rich texts. The aim is for students to understand that thinking and reading occur simultaneously. Curricula should focus classroom time on practicing reading, writing, speaking, and listening with high-quality text and text-dependent questions and omit that which would otherwise distract from achieving those goals.

*1. Questions and tasks cultivate students' abilities to ask and answer questions based on the text.* Materials that accompany texts should ask students to think about what they have read or heard and then ask them to draw evidence from the text in support of their ideas about the reading. The standards strongly focus on students gathering evidence and knowledge from what they read and therefore require that a majority of questions and tasks that children ask and respond to be based on the text under consideration. (This is equally true for read-alouds students listen to as for material students read for themselves.)

Student background knowledge and experiences can illuminate the reading but should not replace attention to the text itself. Questions and tasks should require thinking about the text carefully and finding evidence in the text itself to support the response. Discussion tasks, activities, questions, and writings following readings should draw on a full range of insights and knowledge contained in the text in terms of both content and language. Instructional support materials should focus on posing questions and writing tasks that help students become interested in the text and cultivate student mastery of the specific details and ideas of the text.

High quality text-dependent questions are more often text specific rather than generic. That is, high quality questions should be developed to address the specific text being read, in response to the demands of that text. Good questions engage students to attend to the particular dimensions, ideas, and specifics that illuminate each text. Though there is a productive role for good general questions for teachers and students to have at hand, materials should not over rely on "cookie-cutter" questions that could be asked of any text, such as "What is the main idea? Provide three supporting details." Materials should develop sequences of individually crafted questions that draw students and teachers into an exploration of the text or texts at hand.

***2. Materials provide opportunities for students to build knowledge through close reading of specific texts (including read-alouds).*** Materials should design opportunities for careful reading of selected passages or texts and create a series of questions that demonstrate how close attention to those readings allows students to gather evidence and build knowledge. This approach can and should encourage the comparison and synthesis of multiple sources. Once each source is read or listened to and understood carefully, attention should be given to integrating what students have just read with what they have read and learned previously. How does what they have just read compare to what they have learned before? Drawing upon relevant prior knowledge, how does the text expand or challenge that knowledge?

***3. Scaffolds enable all students to experience rather than avoid the complexity of the text.*** Many students will need careful instruction — including effective scaffolding — to enable them to read at the level required by the Common Core State Standards. However, the scaffolding should not preempt or replace the text by translating its contents for students or telling students what they are going to learn in advance of reading or listening to the text; the scaffolding should not become an alternate, simpler source of information that diminishes the need for students to read or listen to the text itself carefully.

**Digital Opportunity #8**

A good example of scaffolds and support principals is Universal Design for Learning (UDL), which is a set of principles for curriculum product development that give all individuals equal opportunities to learn. These principles when integrated into technology can provide significant benefit to student learners (http://www.udlcenter.org).

Students' initial exposure to a text should often engage them directly with the text so they can

practice independent reading. Students should be asked to glean the information they need from multiple readings of a text, each with a specific purpose. In particular, aligned curriculum should explicitly direct students to re-read challenging portions of the text and teachers to return to these portions in read-alouds. Follow-up support should guide readers in the use of appropriate strategies and habits when encountering places in the text where they might struggle, including scaffolding the application of decoding strategies, and pointing students back to the text with teacher support when they are confused or run into vocabulary or other problems.

When necessary, extra textual scaffolding prior to and during the first read should focus on words and concepts that are essential to a basic understanding and that students are not likely to know or be able to determine from context. Supports should be designed to serve a wide range of readers, including those English language learners and other students who are especially challenged by the complex text before them. Texts and the discussion questions should be selected and ordered so that they bootstrap onto each other and promote deep thinking and substantive engagement with the text. Care should also be taken that introducing broad themes and questions in advance of reading does not prompt overly general conversations rather than focusing reading on the specifics, drawing evidence from the text, and gleaning meaning from it. In short, activities related to the text should be such that the text itself is the focus of the instruction and children are able to appreciate and get a sense of the selection as a whole.

***4. Reading strategies support comprehension of specific texts and the focus on building knowledge.*** Close reading and gathering knowledge from specific texts should be at the heart of classroom activities and not be consigned to the margins when completing assignments. Reading strategies should work in the service of reading comprehension (rather than an end unto themselves) and assist students in building knowledge from texts. To be effective, strategies should be introduced and exercised when they help clarify a specific part of a text and are dictated by specific features of a text and especially to assist with understanding more challenging sections. Over time, and through supportive discussion, interaction, and reflection, students need to build an infrastructure of skills, habits, knowledge, dispositions, and experience that enables them to approach new challenging texts with confidence and stamina.

***5. Reading passages are by design centrally located within materials.*** The reading passages in either the teachers' guides or the students' editions of curriculum materials should be easily found and put at the center of the layout so that teachers can select the appropriate texts. The text should be the clear focus of student and teacher attention. Surrounding materials should be thoughtfully considered and justified as essential before being included. The text should be central, and surrounding materials should be included only when necessary, so as not to distract from the text itself.

***6. Materials offer assessment opportunities that genuinely measure progress.*** Aligned materials should guide teachers to provide scaffolding to students but also gradually remove those supports by including tasks that require students to demonstrate their independent capacity to read and write in every domain at the appropriate level of complexity and sophistication. Activities used for assessment should clearly denote what standards are being emphasized, and materials should offer frequent and easily implemented assessments, including systems for record keeping and follow-up.

*7. **Writing opportunities for students are prominent and varied.*** The standards call for writing both as a means of communicating thinking and answering questions and as a means of self-expression and exploration. Writing assignments should be varied and ask students to draw on their experience, on their imagination, and most frequently on the texts they encounter through reading or read-alouds. As a means to such expressions, the standards require students in the early grades to know their letters, phonetic conventions, sentence structures, spelling and the like. Acquiring these basic skills and tools along with regular opportunities to express themselves will enable students to engage in a full range of writing, including writing narratives (both real and imagined), writing to inform, and writing opinions.

Materials must also have a clear and documented research base. Materials offered as an excellent match for the CCSS should produce evidence of their usability and efficacy with a full range of students, including English language learners. In all materials, principles of reading acquisition are explained, instructions to teachers and students are clear and concise, and the relationship between tasks and the expected learning outcome is clear. Programs that already have a research base should build on that base by continuing to monitor their efficacy with the whole range of Common Core State Standards.

## Criteria for Grades 3–12

At the heart of the ELA criteria for grades 3-12 are instructions for shifting the focus of literacy instruction to center on careful examination of the text itself. In aligned materials, work in reading and writing (as well as speaking and listening) must center on the text under consideration. The standards focus on students reading closely to draw evidence and knowledge from the text and require students to read texts of adequate range and complexity. The criteria outlined below therefore revolve around the texts that students read and the kinds of questions students should address as they write and speak about them.

The standards and these criteria sharpen the focus on the close connection between comprehension of text and acquisition of knowledge. While the link between comprehension and knowledge in reading science and history texts is clear, the same principle applies to all reading. The criteria make plain that developing students' prowess at drawing knowledge from the text itself is the point of reading; reading well means gaining the maximum insight or knowledge possible from each source. Student knowledge drawn from the text is demonstrated when the student uses evidence from the text to support a claim about the text. Hence evidence and knowledge link directly to the text.

The criteria for ELA/Literacy grades 3-12 consists of two parts: The first articulates criteria for ELA materials in grades 3–12 and the second for history/social studies, science, and technical materials in grades 6–12. Each part contains sections discussing the key criteria:

### *I. Key Criteria for Text Selection*

#### *1. Text Complexity: The Common Core State Standards require students to read increasingly complex texts with growing independence as they progress toward career and college readiness.*

***A. Texts for each grade align with the complexity requirements outlined in the Standards.*** Reading Standard 10 outlines the level of text complexity at which students need to demonstrate comprehension in each grade. (Appendix A in the CCSS gives further information on how text complexity can be measured and offers guidance to teachers and curriculum developers on selecting the texts their students read.)[11] Research makes clear that the complexity levels of the texts students are presently required to read are significantly below what is required to achieve college and career readiness. The CCSS hinge on students encountering appropriately complex texts at each grade level to develop the mature language skills and the conceptual knowledge they need for success in school and life. Instructional materials should also offer advanced texts to provide students at every grade with the opportunity to read texts beyond their current grade level to prepare them for the challenges of more complex text.

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11 Clear common standards for measuring text complexity, based on evidence and on the principles laid out in Appendix A, can be found at http://www.achievethecore.org/steal-these-tools/text-complexity.

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***B. All students (including those who are behind) have extensive opportunities to encounter grade-level complex text.*** Far too often, students who have fallen behind are only given less complex texts rather than the support they need to read texts at the appropriate level of complexity. Complex text is a rich repository of ideas, information, and experience which all readers should learn how to access, although some students will need more scaffolding to do so. Curriculum developers and teachers have the flexibility to build progressions of texts of increasing complexity within grade-level bands that overlap to a limited degree with earlier bands (e.g., grades 4–5 and grades 6–8).

Curriculum materials should provide extensive opportunities for all students in a classroom to engage with complex text, although students whose reading ability is developing at a slower rate also will need supplementary opportunities to read text they can comprehend successfully without extensive supports. These students may also need extra assistance with fluency practice and vocabulary building. Students who need additional assistance, however, must not miss out on essential practice and instruction their classmates are receiving to help them read closely, think deeply about texts, participate in thoughtful discussions, and gain knowledge of both words and the world.

Some percentage of students will enter grade 3 or later grades without a command of foundational reading skills such as decoding. It is essential for these students to have age-appropriate materials to ensure that they receive the extensive training and practice in the foundational reading skills required to achieve fluency and comprehension. The K–2 criteria more fully articulate the essential foundational skills all students need to decode to become fluent readers and comprehend text.

***C. Shorter, challenging texts that elicit close reading and re-reading are provided regularly at each grade.*** The study of short texts is particularly useful to enable students at a wide range of reading levels to participate in the close analysis of more demanding text. The Common Core State Standards place a high priority on the close, sustained reading of complex text, beginning with Reading Standard 1. Such reading focuses on what lies within the four corners of the text. It often requires compact, short, self-contained texts that students can read and re-read deliberately and slowly to probe and ponder the meanings of individual words, the order in which sentences unfold, and the development of ideas over the course of the text. Reading in this manner allows students to fully understand informational texts as well as analyze works of literature effectively.

***D. Novels, plays, and other extended full-length readings are also provided with opportunities for close reading.*** Students should also be required to read texts of a range of lengths — for a variety of purposes — including several longer texts each year. Discussion of extended or longer texts should span the entire text while also creating a series of questions that demonstrate how careful attention to specific passages within the text provide opportunities for close reading. Focusing on extended texts will enable students to develop the stamina and persistence they need to read and extract knowledge and insight from larger volumes of material. Not only do students

need to be able to read closely, but they also need to be able to read larger volumes of text when necessary for research or other purposes.

***E. Additional materials aim to increase regular independent reading of texts that appeal to students' interests while developing both their knowledge base and joy in reading.*** These materials should ensure that all students have daily opportunities to read texts of their choice on their own during and outside of the school day. Students need access to a wide range of materials on a variety of topics and genres both in their classrooms and in their school libraries to ensure that they have opportunities to independently read broadly and widely to build their knowledge, experience, and joy in reading. Materials will need to include texts at students' own reading level as well as texts with complexity levels that will challenge and motivate students. Texts should also vary in length and density, requiring students to slow down or read more quickly depending on their purpose for reading. In alignment with the standards and to acknowledge the range of students' interests, these materials should include informational texts and literary nonfiction as well as literature. A variety of formats can also engage a wider range of students, such as high-quality newspaper and magazine articles as well as information-rich websites.

***2. Range and Quality of Texts: The Common Core State Standards require a greater focus on informational text in elementary school and literary nonfiction in ELA classes in grades 6–12.***

***A. In grades 3–5, literacy programs shift the balance of texts and instructional time to include equal measures of literary and informational texts.*** The standards call for elementary curriculum materials to be recalibrated to reflect a mix of 50 percent literary and 50 percent informational text, including reading in ELA, science, social studies, and the arts. Achieving the appropriate balance between literary and informational text in the next generation of materials requires a significant shift in early literacy materials and instructional time so that scientific and historical text are given the same time and weight as literary text. (See p. 31 of the standards for details on how literature and informational texts are defined.) In addition, to develop reading comprehension for all readers, as well as build vocabulary, the selected informational texts should build a coherent body of knowledge both within and across grades. (The sample series of texts regarding "The Human Body" provided on p. 33 of the CCSS offers an example of selecting texts that build knowledge coherently within and across grades.)[12]

***B. In grades 6–12, ELA programs shift the balance of texts and instructional time towards reading substantially more literary nonfiction.*** The Common Core State Standards require

12 The note on the range and content of student reading in K–5 (p. 10) states: "By reading texts in history/social studies, science, and other disciplines, students build a foundation of knowledge in these fields that will also give them background knowledge to be better readers in all content areas in later grades. Students can only gain this foundation when the curriculum is intentionally and coherently structured to develop rich content knowledge within and across grades."

aligned ELA curriculum materials in grades 6–12 to include a blend of literature (fiction, poetry, and drama) and a substantial sampling of literary nonfiction, including essays, speeches, opinion pieces, biographies, journalism, and historical, scientific, or other documents written for a broad audience. (See p. 57 of the standards for more details.) Most ELA programs and materials designed for them will need to increase substantially the amount of literary nonfiction they include. The standards emphasize arguments (such as those in the U.S. foundational documents) and other literary nonfiction that is built on informational text structures rather than literary nonfiction that is structured as stories (such as memoirs or biographies). Of course, literary nonfiction extends well beyond historical documents to include the best of nonfiction written for a broad audience on a wide variety of topics, such as science, contemporary events and ideas, nature, and the arts. (Appendix B of the CCSS provides several examples of high-quality literary nonfiction.)

**Digital Opportunity #9**

Digital texts provide the opportunity to embed sequenced text-dependent questions.

***C. The quality of the suggested texts is high — they are worth reading closely and exhibit exceptional craft and thought or provide useful information.*** Given the emphasis of the Common Core State Standards on close reading, many of the texts selected should be worthy of close attention and careful re-reading for understanding. To become career and college ready, students must grapple with a range of works that span many genres, cultures, and eras and model the kinds of thinking and writing students should aspire to in their own work. Also, there should be selections of sources that require students to read and integrate a larger volume of material for research purposes. (See Appendix B of the standards for grade-specific examples of texts.)

***D. Specific texts or text types named in the Standards are included.*** At specific points, the Common Core State Standards require certain texts or types of texts. In grades 9–12, foundational documents from American history, selections from American literature and world literature, a play by Shakespeare, and an American drama are all required. In early grades, students are required to study classic myths and stories, including works representing diverse cultures. Aligned materials for grades 3–12 should set out a coherent selection and sequence of texts (of sufficient complexity and quality) to give students a well-developed sense of bodies of literature (like American literature or classic myths and stories) as part of becoming college and career ready.

***E. Within a sequence or collection of texts, specific anchor texts are selected for especially careful reading.*** Often in research and other contexts, several texts will be read to explore a topic. It is essential that such materials include a selected text or set of texts that can act as cornerstone or anchor text(s) that make careful study worthwhile. The anchor text(s) provide essential opportunities for students to spend the time and care required for close reading and to

demonstrate in-depth comprehension of a specific source or sources. The additional research sources beyond the anchor texts then enable students to demonstrate they can read widely as well as read a specific source in depth.

## *II. Key Criteria for Questions and Tasks*

### *1. High-Quality Text-Dependent Questions and Tasks: Among the highest priorities of the Common Core State Standards is that students be able to read closely and gain knowledge from texts.*

***A. A significant percentage of tasks and questions are text-dependent.*** The standards strongly focus on students gathering evidence, knowledge, and insight from what they read and therefore require that a majority of the questions and tasks that students ask and respond to be based on the text under consideration. Rigorous text-dependent questions require students to demonstrate that they not only can follow the details of what is explicitly stated but also are able to make valid claims that square with all the evidence in the text.

Text-dependent questions do not require information or evidence from outside the text or texts; they establish what follows and what does not follow from the text itself. Eighty to ninety percent of the Reading Standards in each grade require text-dependent analysis; accordingly, aligned curriculum materials should have a similar percentage of text-dependent questions. When examining a complex text in depth, tasks should require careful scrutiny of the text and specific references to evidence from the text itself to support responses.

High quality text-dependent questions are more often text specific rather than generic. That is, high quality questions should be developed to address the specific text being read, in response to the demands of that text. Good questions engage students to attend to the particular dimensions, ideas, and specifics that illuminate each text. Though there is a productive role for good general questions for teachers and students to have at hand, materials should not over rely on "cookie-cutter" questions that could be asked of any text, such as "What is the main idea? Provide three supporting details." Materials should develop sequences of individually crafted questions that draw students and teachers into an exploration of the text or texts at hand.

A text-dependent approach can and should be applied to building knowledge from multiple sources as well as making connections among texts and learned material, according to the principle that each source be read and understood carefully. Gathering text evidence is equally crucial when dealing with larger volumes of text for research or other purposes. Student background knowledge and experiences can illuminate the reading but should not replace attention to the text itself.

***B. High-quality sequences of text-dependent questions elicit sustained attention to the specifics of the text and their impact.*** The sequence of questions should cultivate student mastery of the specific ideas and illuminating particulars of the text. High-quality text-dependent questions

will often move beyond what is directly stated to require students to make nontrivial inferences based on evidence in the text. Questions aligned with CCSS should demand attention to the text to answer fully. An effective set of discussion questions might begin with relatively simple questions requiring attention to specific words, details, and arguments and then move on to explore the impact of those specifics on the text as a whole. Good questions will often linger over specific phrases and sentences to ensure careful comprehension and also promote deep thinking and substantive analysis of the text. Effective question sequences will build on each other to ensure that students learn to stay focused on the text so they can learn fully from it. Even when dealing with larger volumes of text, questions should be designed to stimulate student attention to gaining specific knowledge and insight from each source.

***C. Questions and tasks require the use of textual evidence, including supporting valid inferences from the text.*** The Common Core State standards require students to become more adept at drawing evidence from the text and explaining that evidence orally and in writing. Aligned curriculum materials should include explicit models of a range of high-quality evidence-based answers to questions — samples of proficient student responses — about specific texts from each grade. Questions should require students to demonstrate that they follow the details of what is explicitly stated and are able to make nontrivial inferences beyond what is explicitly stated in the text regarding what logically follows from the evidence in the text. Evidence will play a similarly crucial role in student writing, speaking, and listening, as an increasing command of evidence in texts is essential to making progress in reading as well as the other literacy strands.

***D. Instructional design cultivates student interest and engagement in reading rich texts carefully.*** A core part of the craft of developing instructional materials is to construct questions and tasks that motivate students to read inquisitively and carefully. Questions should reward careful reading by focusing on illuminating specifics and ideas of the text that "pay off" in a deeper understanding and insight. Often, a good question will help students see something worthwhile that they would not have seen on a more cursory reading. The sequence of questions should not be random but should build toward more coherent understanding and analysis. Care should be taken that initial questions are not so overly broad and general that they pull students away from an in-depth encounter with the specific text or texts; rather, strong questions will return students to the text to achieve greater insight and understanding. The best questions will motivate students to dig in and explore further — just as texts should be worth reading, so should questions be worth answering.

***E. Materials provide opportunities for students to build knowledge through close reading of specific texts.*** Materials should design opportunities for close reading of selected passages or texts and create a series of questions that demonstrate how careful attention to those readings allows students to gather evidence and build knowledge. This approach can and should encourage the comparison and synthesis of multiple sources. Once each source is read and understood carefully, attention should be given to integrating what students have just read with what they have read and learned previously. How does what they have just read compare to what they

have learned before? Drawing upon relevant prior knowledge, how does the text expand or challenge that knowledge? As students apply knowledge and concepts gained through reading to build a more coherent understanding of a subject, productive connections and comparisons across texts and ideas should bring students back to careful reading of specific texts. Students can and should make connections between texts, but this activity should not supersede the close examination of each specific text.

***F. Questions and tasks attend to analyzing the arguments and information at the heart of informational text.*** As previously stated, the CCSS emphasize the reading of more informational text in grades K–5 and more literary nonfiction in grades 6–12. This emphasis mirrors the Writing standards that focus on students' abilities to marshal an argument and write to inform or explain. The shift in both reading and writing constitutes a significant change from the traditional focus in ELA classrooms on narrative text or the narrative aspects of literary nonfiction (the characters and the story) toward more in-depth engagement with the informational and argumentative aspects of these texts. While the English teacher is not meant to be a content expert in an area covered by particular texts, curriculum materials should guide teachers and students to demonstrate careful understanding of the information developed in the text. For example, in a narrative with a great deal of science, teachers and students should be required to follow and comprehend the scientific information as presented by the text. In a similar fashion, it is just as essential for teachers and students to follow the details of an argument and reasoning in literary nonfiction as it is for them to attend to issues of style.

***2. Cultivating Students' Ability To Read Complex Texts Independently: Another key priority of the Common Core State Standards is a requirement that students be able to demonstrate their independent capacity to read at the appropriate level of complexity and depth.***

***A. Scaffolds enable all students to experience rather than avoid the complexity of the text.*** Many students will need careful instruction — including effective scaffolding — to enable them to read at the level of text complexity required by the CCSS. However, the scaffolding should not preempt or replace the text by translating its contents for students or telling students what they are going to learn in advance of reading the text; the scaffolding should not become an alternate, simpler source of information that diminishes the need for students to read the text itself carefully. Effective scaffolding aligned with the standards should result in the reader encountering the text on its own terms, with instructions providing helpful directions that focus students on the text. Follow-up support should guide the reader when encountering places in the text where he or she might struggle. Aligned curriculum materials therefore should explicitly direct students to re-read challenging portions of the text and offer instructors clear guidance about an array of text-based scaffolds. When productive struggle with the text is exhausted, questions rather than explanations can help focus the student's attention on key phrases and statements in the text or on the organization of ideas in the paragraph.

When necessary, extra textual scaffolding prior to and during the first read should focus on words and concepts that are essential to a basic understanding and that students are not likely to know or be able to determine from context. Supports should be designed to serve a wide range

of readers, including those English language learners and other students who are especially challenged by the complex text before them. Texts and the discussion questions should be selected and ordered so that they bootstrap onto each other and promote deep thinking and substantive engagement with the text.

***B. Reading strategies support comprehension of specific texts and the focus on building knowledge and insight.*** Close reading and gathering knowledge from specific texts should be at the heart of classroom activities and not be consigned to the margins when completing assignments. Reading strategies should work in the service of reading comprehension (rather than an end unto themselves) and assist students in building knowledge and insight from specific texts. To be effective, instruction on specific reading techniques should occur when they illuminate specific aspects of a text. Students need to build an infrastructure of skills, habits, knowledge, dispositions, and experience that enables them to approach new challenging texts with confidence and stamina. As much as possible, this training should be embedded in the activity of reading the text rather than being taught as a separate body of material. Additionally, care should be taken that introducing broad themes and questions in advance of reading does not prompt overly general conversations rather than focusing reading on the specific ideas and details, drawing evidence from the text, and gleaning meaning and knowledge from it.

***C. Design for whole-group, small-group, and individual instruction cultivates student responsibility and independence.*** It is essential that questions, tasks, and activities be designed to ensure that all students are actively engaged in reading. Materials should provide opportunities for students to participate in real, substantive discussions that require them to respond directly to the ideas of their peers. Teachers can begin by asking the kind and level of questions appropriate to the reading and then students should be prompted to ask high-quality questions about what they are reading to one another for further comprehension and analysis. Writing about text is also an effective way to elicit this active engagement. Students should have opportunities to use writing to clarify, examine, and organize their own thinking, so reading materials should provide effective ongoing prompts for students to analyze texts in writing. Instructional materials should be designed to devote sufficient time in class to students encountering text without scaffolding, as they often will in college- and career-ready environments. A significant portion of the time spent with each text should provide opportunities for students to work independently on analyzing grade-level text because this independent analysis is required by the standards.

***D. Questions and tasks require careful comprehension of the text before asking for further evaluation or interpretation.*** The Common Core State Standards call for students to demonstrate a careful understanding of what they read before engaging their opinions, appraisals, or interpretations. Aligned materials should therefore require students to demonstrate that they have followed the details and logic of an author's argument before they are asked to evaluate the thesis or compare the thesis to others. When engaging in critique, materials should require students to return to the text to check the quality and accuracy of their evaluations and interpretations. Often, curricula surrounding texts leap too quickly into broad and wide-open

questions of interpretation before cultivating command of the details and specific ideas in the text.

***E. Materials make the text the focus of instruction by avoiding features that distract from the text.*** Teachers' guides or students' editions of curriculum materials should highlight the reading selections. Everything included in the surrounding materials should be thoughtfully considered and justified before being included. The text should be central, and surrounding materials should be included only when necessary, so as not to distract from the text itself. Instructional support materials should focus on questions that engage students in becoming interested in the text. Rather than being consigned to the margins when completing assignments, close and careful reading should be at the center of classroom activities. Given the focus of the CCSS, publishers and other developers should be extremely sparing in offering activities that are not text based. Existing curricula will need to be revised substantially to focus classroom time on students and teachers practicing reading, writing, speaking, and listening in direct response to high-quality text.

***F. Materials offer assessment opportunities that genuinely measure progress.*** Aligned materials should guide teachers to provide scaffolding but also gradually remove those supports by including tasks that require students to demonstrate their independent capacity to read and write in every domain at the appropriate level of complexity and sophistication. Activities used for assessment should clearly denote what standards and texts are being emphasized, and materials should offer frequent and easily implemented assessments, including systems for record keeping and follow-up.

### *III. Key Criteria for Academic Vocabulary*

Materials focus on academic vocabulary prevalent in complex texts throughout reading, writing, listening, and speaking instruction. Academic vocabulary (described in more detail as Tier 2 words in Appendix A of the Common Core State Standards) includes those words that readers will find in all types of complex texts from different disciplines. Sometimes curricula ignore these words and pay attention only to the technical words that are unique to a discipline. Materials aligned with the CCSS should help students acquire knowledge of general academic vocabulary because these are the words that will help them access a wide range of complex texts.

Aligned materials should guide students to gather as much as they can about the meaning of these words from the context of how they are being used in the text, while offering support for vocabulary when students are not likely to be able to figure out their meanings from the text alone. As the meanings of words vary with the context, the more varied the context provided to teach the meaning of a word is, the more effective the results will be (e.g., a state was admitted to the Union; he admitted his errors; admission was too expensive). In alignment with the standards, materials should also require students to explain the impact of specific word choices on the text. Materials and activities should also provide ample opportunities for students to practice the use of academic vocabulary in their speaking and writing.

Some students, including some English language learners, will also need support in mastering high-frequency words that are not Tier 2 words but are essential to reading grade-level text. Materials should therefore offer the resources necessary for supporting students who are developing knowledge of high-frequency words. Since teachers will often not have the time to teach explicitly all of the high-frequency words required, materials should make it possible for students to learn the words' meanings on their own, providing such things as student-friendly definitions for high-frequency words whose meanings cannot be inferred from the context. It also can be useful for English language learners to highlight explicitly and link cognates of key words with other languages.

### *IV. Key Criteria for Writing to Sources and Research*

*1. **Materials portray writing to sources as a key task.*** The CCSS require students not only to show that they can analyze and synthesize sources but also to present careful analysis, well-defended claims, and clear information through their writing. Several of the Writing Standards, including most explicitly Standard 9, require students to draw evidence from a text or texts to support analysis, reflection, or research. Materials aligned with the CCSS should give students extensive opportunities to write in response to sources throughout grade-level materials. Model rubrics for the writing assignments as well as high-quality student samples should also be provided as guidance to teachers.

*2. **Materials focus on forming arguments as well as informative writing.*** While narrative writing is given prominence in early grades, as students progress through the grades the Common Core State Standards increasingly ask students to write arguments or informational reports from sources. As a consequence, less classroom time should be spent in later grades on personal writing in response to decontextualized prompts that ask students to detail personal experiences or opinions. The CCSS require that the balance of writing students are asked to do parallel the balance assessed on the National Assessment of Educational Progress (NAEP):

- In elementary school, 30 percent of student writing should be to argue, 35 percent should be to explain/inform, and 35 percent should be narrative.
- In middle school, 35 percent of student writing should be to write arguments, 35 percent should be to explain/inform, and 30 percent should be narrative.
- In high school, 40 percent of student writing should be to write arguments, 40 percent should be to explain/inform, and 20 percent should be narrative.

These forms of writing are not strictly independent; for example, arguments and explanations often include narrative elements, and both informing and arguing rely on using information or evidence drawn from texts.

***3. Materials make it clear that student writing should be responsive to the needs of the audience and the particulars of the text in question.*** As the standards are silent on length and structure, student writing should not be evaluated by whether it follows a particular format or formula (e.g., the five paragraph essay). Instead, the CCSS have been carefully designed to focus on the elements or characteristics of good writing including drawing sufficient evidence from texts, writing coherently with well-developed ideas, and writing clearly with sufficient command of standard English.

***4. Students are given extensive practice with short, focused research projects.*** Writing Standard 7 emphasizes that students should conduct several short research projects in addition to more sustained research efforts. Materials should require several of these short research projects annually to enable students to repeat the research process many times and develop the expertise needed to conduct research independently. A progression of shorter research projects also encourages students to develop expertise in one area by confronting and analyzing different aspects of the same topic as well as other texts and source materials on that topic.

## *V. Additional Key Criteria for Student Reading, Writing, Listening, and Speaking*

***1. Materials provide systematic opportunities for students to read complex text with fluency.*** Fluency describes the pace and accuracy with which students read — the extent to which students adjust the pace, stress, and tone of their reading to respond to the words in the text. Often, students who are behind face fluency challenges and need more practice reading sufficiently complex text. Materials aligned with the CCSS should draw on the connections between the Speaking and Listening Standards and the Reading Standards on fluency to provide opportunities for students to develop this important skill (e.g., rehearsing an oral performance of a written piece has the built-in benefit of promoting reading fluency).

***2. Materials help teachers plan substantive academic discussions.*** In accordance with the Speaking and Listening Standards, materials aligned with the CCSS should show teachers how to plan engaging discussions around grade-level topics and texts that students have studied and researched in advance. Speaking and Listening prompts and questions should offer opportunities for students to share preparation, evidence, and research — real, substantive discussions that require students to respond directly to the ideas of their peers. Materials should highlight strengthening students' listening skills as well as their ability to respond to and challenge their peers with relevant follow-up questions and evidence.

***3. Materials use multimedia and technology to deepen attention to evidence and texts.*** The CCSS require students to compare the knowledge they gain from reading texts to the knowledge they gain from other multimedia sources, such as video. The Standards for Reading

Literature specifically require students to observe different productions of the same play to assess how each production interprets evidence from the script. Materials aligned with the CCSS therefore should use multimedia and technology in a way that engages students in absorbing or expressing details of the text rather than becoming a distraction or replacement for engaging with the text.

*4. Materials embrace the most significant grammar and language conventions*. The Language Standards provide a focus for instruction each year to ensure that students gain adequate mastery of the essential "rules" of standard written and spoken English. They also push students to learn how to approach language as a matter of craft so they can communicate clearly and powerfully. In addition to meeting each year's grade-specific standards, students are expected to retain and further develop skills and understandings mastered in preceding grades. Thus, aligned materials should demonstrate that they explicitly and effectively support student mastery of the full range of grammar and conventions as they are applied in increasingly sophisticated contexts. The materials should also indicate when students should adhere to formal conventions and when they are speaking and writing for a less formal purpose.

## Criteria for History/Social Studies, Science, and Technical Subjects, Grades 6-12

The following criteria are for materials in history/social studies, science, and technical subjects. The criteria restate several key points from the ELA criteria as they relate to these content areas and add others that are particularly significant. As was the case with ELA, what follows is not an exhaustive list but the most significant elements of the CCSS to be mindful of when revising and developing aligned materials.

Meeting the demands of the Literacy Standards requires substantially expanding the literacy requirements in history/social studies as well as in science and technical subjects. The adoption of the Literacy Standards in History/Social Studies, Science, and Technical Subjects therefore requires several significant shifts in these curricula. Specifically, in alignment with NAEP, the standards require that in grades 6–12, student reading across the curriculum must include a balance of texts that is one-third literary, one-third history/social studies, and one-third science. Specific standards (pp. 60–66) define the actual literacy skills for which history/social studies, science, and technical teachers are responsible. (Appendix B of the CCSS contains a sampling of texts of appropriate quality and complexity for study in these disciplines.)

### *I. Key Criteria for Text Selection*

*1. Text Complexity: The Common Core State Standards require students to read increasingly complex texts with growing independence as they progress toward career and college readiness.*

*A. Texts for each grade align with the complexity requirements outlined in the Standards.* Reading Standard 10 outlines the level of text complexity at which students need to demonstrate comprehension in each grade. (Appendix A in the CCSS gives further information on how text complexity can be measured and offers guidance to teachers and curriculum developers on selecting the texts their students read.)[13] Research makes clear that the complexity levels of the texts students are presently required to read are significantly below what is required to achieve college and career readiness. The CCSS hinge on students encountering appropriately complex texts at each grade level to develop the mature language skills and the conceptual knowledge they need for success in school and life. Instructional materials should also offer advanced texts to provide students at every grade with the opportunity to read texts beyond their current grade level to prepare them for the challenges of more complex text.

*B. All students (including those who are behind) have extensive opportunities to encounter grade-level complex text.* Far too often, students who have fallen behind are only given less complex texts rather than the support they need to read texts at the appropriate level of complexity. Complex text is a rich repository of information which all readers learn how to access, although some students will need more scaffolding to do so. Developers and teachers have the flexibility to build progressions of text within grade-level bands that overlap to a limited degree with earlier bands (e.g., grades 4–5 and grades 6–8).

Materials should provide extensive opportunities for all students in a classroom to engage with complex text, although students whose reading ability is developing at a slower rate also will need supplementary opportunities to read text they can comprehend successfully without extensive supports. These students may also need extra assistance with fluency practice and vocabulary building. Students who need additional assistance, however, must not miss out on essential practice and instruction their classmates are receiving to help them read closely, think deeply about texts, participate in thoughtful discussions, and gain knowledge of both words and the world.

*2. Range and Quality of Texts: The Common Core State Standards require a keen focus on informational text.*

A. *Materials provide texts that are valuable sources of information.* Informational texts in science, history, and technical subjects may or may not exhibit literary craft, but they should be worth reading as valuable sources of information to gain important knowledge. It is essential that the scientific and historical texts chosen for careful study be focused on such significant topics that they are worth the instructional time for students to examine them deliberately to develop a full understanding. To encourage close reading on a regular basis, many of these texts should

13 A working group has developed clear, common Standards for measuring text complexity that are consistent across different curricula and publishers. These measures blend quantitative and qualitative factors and are being widely shared and made available to publishers and curriculum developers. The measures are based on the principles laid out in Appendix A and have been further developed and refined. These criteria recognize the critical role that teachers play in text selection.

be short enough to enable thorough examination. Students should also be required to assimilate larger volumes of content-area text to demonstrate college and career readiness. Discussion of extended or longer texts should span the entire text while also creating a series of questions that demonstrate how careful attention to specific passages within the text provides opportunities for close reading. Focusing on extended texts will enable students to develop the stamina and persistence they need to read and extract knowledge and insight from larger volumes of material. Not only do students need to be able to read closely, but they also need to be able to read larger volumes of text when necessary for research or other purposes.

***B. Materials include opportunities to combine quantitative information derived from charts and other visual formats and media with information derived from text.*** An important part of building knowledge in history/social studies, science, and technical subjects is integrating information drawn from different formats and media. For example, the Reading Standards require students to integrate the knowledge they gain from quantitative data with information they gain from a single or multiple written text sources. Therefore, materials aligned with the CCSS might require students to compare their own experimental results to results about which they have read, and integrate information from video or other media with what they learn from text.

## *II. Key Criteria for Questions and Tasks*

### *1. High-Quality Text-Dependent Questions and Tasks: Among the highest priorities of the Common Core State Standards is that students be able to read closely and gain knowledge from texts.*

***A. Materials provide opportunities for students to build knowledge through close reading of a specific text or texts.*** As in the ELA Reading Standards, the large majority of the Literacy Standards for History/Social Studies, Science, and Technical Subjects require that aligned curricula include high-quality questions and tasks that are text-dependent. Such questions should encourage students to "read like a detective" by prompting relevant and central inquiries into the meaning of the source material that can be answered only through close attention to the text. The Literacy Standards therefore require students to demonstrate their ability to follow the details of what is explicitly stated, make valid inferences that logically follow from what is stated, and draw knowledge from the text. Student background knowledge and experiences can illuminate the reading but should not replace attention to the text itself.

Materials should design opportunities for close reading of selected passages from extended or longer texts and create a series of questions that demonstrate how close attention to those passages allows students to gather evidence and knowledge from the text. This text-dependent approach can and should be applied to building knowledge from the comparison and synthesis of multiple sources in science and history. (It bears noting that science includes many non-text sources such as experiments, observations, and discourse around these scientific activities.) Once each source is read and understood carefully, attention should be given to integrating what students have just read with what they have read and learned previously. How does what they have just read compare to what they have learned before? Drawing upon relevant prior knowledge, how does the text expand or challenge that knowledge? As students apply knowledge and

concepts gained through reading to build a more coherent understanding of a subject, productive connections and comparisons across texts and ideas should bring students back to careful reading of specific texts. Gathering text evidence is equally crucial when dealing with larger volumes of text for research or other purposes.

***B. All activities involving text require that students demonstrate increasing mastery of evidence drawn from text.*** The CCSS require students to become more adept at drawing evidence from the text and explaining that evidence orally and in writing. Aligned curriculum materials should include explicit models of a range of high-quality evidence-based answers to questions — samples of proficient student responses — about specific texts from each grade. Questions should require students to demonstrate that they follow the details of what is explicitly stated and are able to make nontrivial inferences beyond what is explicitly stated in the text regarding what logically follows from the evidence in the text. Gathering text evidence is equally crucial when dealing with larger volumes of text for research or other purposes.

***C. Questions and tasks require careful comprehension of the text before asking for further evaluation and interpretation.*** The CCSS call for students to demonstrate a careful understanding of what they read before engaging their opinions, appraisals, or interpretations. Aligned materials should therefore require students to demonstrate that they have followed the details and logic of an author's argument before they are asked to evaluate the thesis or compare the thesis to others. Before students are asked to go beyond the text and apply their learning, they should demonstrate their grasp of the specific ideas and details of the text.

***3. Cultivating Students' Ability To Read Complex Texts Independently: Another key priority of the CCSS is a requirement that students be able to demonstrate their independent capacity to read at the appropriate level of complexity and depth.*** Aligned materials therefore should guide teachers to provide scaffolding to students but also gradually remove those supports by including tasks that require students to demonstrate their independent capacity to read and write in every domain at the appropriate level of complexity and sophistication.

***A. Scaffolds enable all students to experience rather than avoid the complexity of the text.*** Many students will need careful instruction — including effective scaffolding — to enable them to read at the level of text complexity required by the Common Core State Standards. However, the scaffolding should not preempt or replace the text by translating its contents for students or telling students what they are going to learn in advance of reading the text; the scaffolding should not become an alternate, simpler source of information that diminishes the need for students to read the text itself carefully. Effective scaffolding aligned with the standards should result in the reader encountering the text on its own terms, with instructions providing helpful directions that focus students on the text. Follow-up support should guide readers in the use of appropriate strategies and habits when encountering places in the text where they might

struggle. When productive struggle with the text is exhausted, questions rather than explanations can help focus the student's attention on key phrases and statements in the text or on the organization of ideas in the paragraph or the work as a whole.

When necessary, extra textual scaffolding prior to and during the first read should focus on words and concepts that are essential to a basic understanding and that students are not likely to know or be able to determine from context. Supports should be designed to serve a wide range of readers, including those English language learners and other students who are especially challenged by the complex text before them. Texts and the discussion questions should be selected and ordered so that they bootstrap onto each other and promote deep thinking and substantive engagement with the text.

***B. Design for whole-group, small-group, and individual instruction cultivates student responsibility and independence. I***t is essential that questions, tasks, and activities are designed to ensure that all students are actively engaged in reading. Materials should provide opportunities for students to participate in real, substantive discussions that require them to respond directly to the ideas of their peers. Teachers can begin by asking the kind and level of questions appropriate to the reading and then students should be prompted to ask high-quality questions about what they are reading to further comprehension and analysis. Writing about text is also an effective way to elicit this active engagement. Students should have opportunities to use writing to clarify, examine, and organize their own thinking, so reading materials should provide effective ongoing prompts for students to analyze texts in writing. Instructional materials should be designed to devote sufficient time in class to students encountering text without scaffolding, as they often will in college- and career-ready environments. A significant portion of the time spent with each text should provide opportunities for students to work independently within and outside of class on analyzing the text because this independent analysis is required by the standards.

### *III. Key Criteria for Academic (and Domain-Specific) Vocabulary*

Materials focus on academic vocabulary prevalent in complex texts throughout reading, writing, listening, and speaking instruction. The CCSS require a focus on academic vocabulary that is prevalent in more complex texts as well as domain-specific words. Academic vocabulary (described in more detail as Tier 2 words in Appendix A of the CCSS) includes those words that readers will find in all types of complex texts from different disciplines. Materials aligned with the CCSS should help students acquire knowledge of general academic vocabulary in addition to domain-specific words because these words will help students access a range of complex texts in diverse subject areas.

Aligned materials should guide students to gather as much as they can about the meaning of these words from the context of how they are being used in the text, while offering support for vocabulary when students are not likely to be able to figure out their meanings from the text alone. As the meanings of words vary with the context, the more varied the context provided to teach the meaning of a word is, the more effective the results will be (e.g., a state was admitted to the Union; he admitted his errors; admission was too expensive). In alignment with the standards, materials should also require students to explain the impact of specific word choices on the text. Materials and activities should also provide ample opportunities for students to practice

the use of academic vocabulary in their speaking and writing.

Some students, including some English language learners, will also need support in mastering high-frequency words that are not Tier 2 words but are essential to reading grade-level text. Materials should therefore offer the resources necessary for supporting students who are developing knowledge of high-frequency words. Since teachers will often not have the time to teach explicitly all of the high-frequency words required, materials should make it possible for students to learn the words' meanings on their own, providing such things as student-friendly definitions for high-frequency words whose meanings cannot be inferred from the context. It also can be useful for English language learners to highlight explicitly and link cognates of key words with other languages.

### *IV. Key Criteria for Writing to Sources and Research*

*1. **Materials portray writing to sources as a key task.*** Crafting an argument frequently relies on using information; similarly, an analysis of a subject will include argumentative elements. While these forms are not strictly independent, what is critical to both forms of writing is the use and integration of evidence. In historical, technical, and scientific writing, accuracy matters, and students should demonstrate their knowledge through precision and detail.

*2. **Materials make it clear that student writing should be responsive to the needs of the audience and the particulars of the text in question.*** As the standards are silent on length and structure, student writing should not be evaluated by whether it follows a traditional format or formula (e.g. the five paragraph essay). Instead, the Common Core State Standards have been carefully designed to focus on the elements or characteristics of good writing including drawing sufficient evidence from texts, writing coherently with well-developed ideas, and writing clearly with sufficient command of standard English.

*3. **Students are given extensive practice with short, focused research projects.*** Writing Standard 7 emphasizes that students should conduct several short research projects in addition to more sustained research efforts. Materials should require several of these short research projects annually to enable students to repeat the research process many times and develop the expertise needed to conduct research independently. A progression of shorter research projects also encourages students to develop expertise in one area by confronting and analyzing different aspects of the same topic as well as other texts and source materials on that topic.

Materials and programs must also have a clear and documented research base. The most important evidence is that the materials help accelerate student progress toward career and college readiness. It can be surprising which questions, tasks, and instructions provoke the most productive engagement with text, accelerate student growth, and deepen instructor facility with the materials. A great deal of the material designed for the standards will by necessity be new, but as much as possible the work should be based on research and developed and refined through actual testing in classrooms. Developers of materials and programs should provide a clear research plan for how the efficacy of their materials will be assessed and improved over time. Revisions should be based on evidence of actual use and results with a wide range of students, including English language learners.

## Mathematics

As discussed in the previous section on the shifts required by the Common Core State Standards, focus and coherence are the two major evidence-based design principles of the CCSS for Mathematics. These principles are meant to fuel greater achievement in a rigorous curriculum, in which students acquire conceptual understanding, procedural skill and fluency, and the ability to apply mathematics to solve problems. Mathematics materials should reflect the shifts of focus, coherence, and rigor as the main themes, as outlined in the criteria below.

### Criteria for Materials and Tools Aligned to the Standards

***I. Focus on Major Work: In any single grade, students and teachers using the materials as designed spend the large majority of their time, approximately three-quarters, on the major work of each grade.*** In order to preserve the focus and coherence of the standards, both assessment consortia have designated clusters as major, additional, or supporting,[15] with clusters designated as major comprising the major work of each grade. Materials are highly unlikely to be aligned to the standards' focus unless students and teachers using them as designed spend the large majority of their time, approximately three-quarters,[16] on the major work of each grade. In addition, major work should especially predominate in the first half of the year (e.g., in grade 3 this is necessary so that students have sufficient time to build understanding and fluency with multiplication).

Digital or online materials that allow navigation or have no fixed pacing plan are explicitly designed to ensure that students' time on task meets this criterion.

Note that an important subset of the major work in grades K–8 is the progression that leads toward middle-school algebra (see Table 8). Materials aligned to the CCSSM give especially careful treatment to these clusters and their interconnections.

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15 For cluster-level emphases at grades K–2, see http://www.achievethecore.org/downloads/Math%20Shifts%20and%20Major%20Work%20of%20Grade.pdf.

16 Given the particular clusters that are designated major in grade 7, the criterion for that grade is approximately two-thirds, rather than approximately three-fourths.

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## Table 7. Progress to Algebra in Grades K-8

| K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Know number names and the count sequence<br><br>Count to tell the number of objects<br><br>Compare numbers<br><br>Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from<br><br>Work with numbers 11-19 to gain foundations for place value | Represent and solve problems involving addition and subtraction<br><br>Understand and apply properties of operations and the relationship between addition and subtraction<br><br>Add and subtract within 20<br><br>Work with addition and subtraction equations<br><br>Extend the counting sequence<br><br>Understand place value<br><br>Use place value understanding and properties of operations to add and subtract<br><br>Measure lengths indirectly and by iterating length units | Represent and solve problems involving addition and subtraction<br><br>Add and subtract within 20<br><br>Understand place value<br><br>Use place value understanding and properties of operations to add and subtract<br><br>Measure and estimate lengths in standard units<br><br>Relate addition and subtraction to length | Represent & solve problems involving multiplication and division<br><br>Understand properties of multiplication and the relationship between multiplication and division<br><br>Multiply & divide within 100<br><br>Solve problems involving the four operations, and identify & explain patterns in arithmetic<br><br>Develop understanding of fractions as numbers<br><br>Solve problems involving measurement and estimation of intervals of time, liquid volumes, & masses of objects<br><br>Geometric measurement: understand concepts of area and relate area to multiplication and to addition | Use the four operations with whole numbers to solve problems<br><br>Generalize place value understanding for multi-digit whole numbers<br><br>Use place value understanding and properties of operations to perform multidigit arithmetic<br><br>Extend understanding of fraction equivalence and ordering<br><br>Build fractions from unit fractions by applying and extending previous understandings of operations<br><br>Understand decimal notation for fractions, and compare decimal fractions | Understand the place value system<br><br>Perform operations with multi-digit whole numbers and decimals to hundredths<br><br>Use equivalent fractions as a strategy to add and subtract fractions<br><br>Apply and extend previous understandings of multiplication and division to multiply and divide fractions<br><br>Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition<br><br>Graph points in the coordinate plane to solve real-world and mathematical problems* | Apply and extend previous understandings of multiplication and division to divide fractions by fractions<br><br>Apply and extend previous understandings of numbers to the system of rational numbers<br><br>Understand ratio concepts and use ratio reasoning to solve problems<br><br>Apply and extend previous understandings of arithmetic to algebraic expressions<br><br>Reason about and solve one-variable equations and inequalities<br><br>Represent and analyze quantitative relationships between dependent and independent variables | Apply and extend previous understanding of operations with fractions to add, subtract, multiply, and divide rational numbers<br><br>Analyze proportional relationships and use them to solve real-world and mathematical problems<br><br>Use properties of operations to generate equivalent expressions<br><br>Solve real-life and mathematical problems using numerical and algebraic expressions and equations | Work with radical and integer exponents<br><br>Understand the connections between proportional relationships, lines, and linear equations<br><br>Analyze and solve linear equations and pairs of simultaneous linear equations<br><br>Define, evaluate, and compare functions<br><br>Use functions to model relationships between quantities* |

**Indicates a cluster that is well thought of as part of a student's progress to algebra, but that is currently not designated as Major by one or both of the assessment consortia in their draft materials. Apart from the two asterisked exceptions, the clusters listed here are a subset of those designated as Major in both of the assessment consortia's draft documents.*

*II. Focus in Early Grades: Materials do not assess any of the following topics before the grade level indicated.*

Materials do not assess pattern problems in K–5 that do not support the focus on arithmetic, such as "find the next one" problems.As Table 9 indicates, the standards as a whole do include these topics—they are not being left out. However, in the coherent progression of the standards, these topics first appear at later grades in order to establish focus. Thus, in aligned materials there are no chapter tests, unit tests, or other assessment components that make students or teachers responsible for any of the above topics before the grade in which they are introduced in the standards. (One way to meet this criterion is for materials to omit these topics entirely prior to the indicated grades.)

There are not significant differences between aligning learning activities and aligning assessments to the CCSSM. The same criteria/lenses should be used to align both activities and assessment. They should both reflect the same shifts in mathematics.

## Table 8. Topics not to Assess before these grades

| Topic | Grade Introduced in the Standards |
|---|---|
| **Probability,** including chance, likely outcomes, probability models. | 7 |
| **Statistical distributions,** including center, variation, clumping, outliers, mean, median, mode, range, quartiles; and **statistical association or trends,** including two-way tables, bivariate measurement data, scatter plots, trend line, line of best fit, correlation. | 6 |
| **Similarity, congruence, or geometric transformations.** | 8 |
| **Symmetry** of shapes, including line/reflection symmetry, rotational symmetry. | 4 |

*III. Focus and Coherence through Supporting Work: Supporting content does not detract from focus, but rather enhances focus and coherence simultaneously by engaging students in the major work of the grade.* For example, materials for K–5 generally treat data displays as an occasion for solving grade-level word problems using the four operations.[17] (This criterion does not apply in the case of targeted supplemental materials or other tools that do not include supporting content.)

17 For more information about this example, see Table 1 in the Progression for K-3 Categorical Data and 2-5 Measurement Data, http://commoncoretools.files.wordpress.com/2011/06/ccss_progression_md_k5_2011_06_20.pdf. More generally, the PARCC Model Content Frameworks give examples in each grade of how to improve focus and coherence by linking supporting topics to the major work.

***IV. Rigor and Balance: Materials and tools reflect the balances in the standards and help students meet the standards' rigorous expectations, by (all of the following, in the case of comprehensive materials; at least one of the following for supplemental or targeted resources):***

**Digital Opportunity #10**

Technology can provide multiple ways to build conceptual understanding in mathematics

***1. Developing students' conceptual understanding of key mathematical concepts, where called for in specific content standards or cluster headings.*** Materials amply feature high-quality conceptual problems and questions that can serve as fertile conversation-starters in a classroom if students are unable to answer them. This includes brief conceptual problems with low computational difficulty (e.g., 'Find a number greater than 1/5 and less than 1/4'); brief conceptual questions (e.g., 'If the divisor does not change and the dividend increases, what happens to the quotient?'); and problems that involve identifying correspondences across different mathematical representations of quantitative relationships.[18] In the materials, conceptual understanding is not a generalized imperative applied with a broad brush, but is attended to most thoroughly in those places in the content standards where explicit expectations are set for understanding or interpreting. Such problems and activities include fine-grained mathematical concepts, such as place value, the whole-number product $a \times b$, the fraction $a/b$, the fraction product $(a/b) \times q$, expressions as records of calculations, solving equations as a process of answering a question, etc. (Conceptual understanding of key mathematical concepts is thus distinct from applications or fluency work, and these three aspects of rigor must be balanced as indicated in the standards.)

***2. Giving attention throughout the year to individual standards that set an expectation of fluency.*** The standards are explicit where fluency is expected. Materials in grades K–6 help students make steady progress throughout the year toward fluent (accurate and reasonably fast) computation, including knowing single-digit products and sums from memory (see, e.g., 2.OA.2 and 3.OA.7). Progress toward these goals is interwoven with students' developing conceptual understanding of the operations in question.[19] Manipulatives and concrete representations such as diagrams that enhance conceptual understanding are closely connected to the written and symbolic methods to which they refer (see, e.g., 1.NBT). As well, purely procedural problems and exercises are present. These include cases in which opportunistic strategies are valuable—e.g., the sum $698 + 240$ or the system $x + y = 1$, $2x + 2y = 3$—as well as an ample number of generic cases so that students can learn and practice efficient algorithms (e.g., the sum $8767 + 2286$). Methods and algorithms are general and based on principles of mathematics, not mnemonics or tricks. [20] Materials do not make fluency a generalized imperative to be applied with a broad brush, but attend most thoroughly to those places in the content standards where explicit expectations are set for fluency. In higher grades, algebra is

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18 Note that for ELL students, multiple representations also serve as multiple access paths.

19 For more about how students develop fluency in tandem with understanding, see the Progressions for Operations and Algebraic Thinking, http://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf and for Number and Operations in Base Ten, http://commoncoretools.files.wordpress.com/2011/04/ccss_progression_nbt_2011_04_073.pdf.

20 Non-mathematical approaches (such as the "butterfly method" of adding fractions) compromise focus and coherence and displace mathematics in the curriculum (cf. 5.NF.1). For additional background on this point, see the remarks by Phil Daro excerpted at http://vimeo.com/achievethecore/darofocus and/or the full video, available at http://commoncoretools.me/2012/05/21/phil-daro-on-learning-mathematics-through-problem-solving/.

the language of much of mathematics. Like learning any language, we learn by using it. Sufficient practice with algebraic operations is provided so as to make realistic the attainment of the standards as a whole; for example, fluency in algebra can help students get past the need to manage computational details so that they can observe structure (MP.7) and express regularity in repeated reasoning (MP.8).

***3. Allowing teachers and students using the materials as designed to spend sufficient time working with engaging applications, without losing focus on the major work of each grade.*** Materials in grades K–8 include an ample number of single-step and multi-step contextual problems that develop the mathematics of the grade, afford opportunities for practice, and engage students in problem solving. Materials for grades 6–8 also include problems in which students must make their own assumptions or simplifications in order to model a situation mathematically. Applications take the form of problems to be worked on individually as well as classroom activities centered on application scenarios. Materials attend thoroughly to those places in the content Standards where expectations for multi-step and real-world problems are explicit. Applications in the materials draw only on content knowledge and skills specified in the content Standards, with particular stress on applying major work, and a preference for the more fundamental techniques from additional and supporting work. Modeling builds slowly across K–8, and applications are relatively simple in earlier grades. Problems and activities are grade-level appropriate, with a sensible tradeoff between the sophistication of the problem and the difficulty or newness of the content knowledge the student is expected to bring to bear. [21]

Additional aspects of the Rigor and Balance Criterion:

(1) The three aspects of rigor are not always separate in materials. (Conceptual understanding needs to underpin fluency work; fluency can be practiced in the context of applications; and applications can build conceptual understanding.)

(2) Nor are the three aspects of rigor always together in materials. (Fluency requires dedicated practice to that end. Rich applications cannot always be shoehorned into the mathematical topic of the day. And conceptual understanding will not come along for free unless explicitly taught.)

(3) Digital and online materials with no fixed lesson flow or pacing plan are not designed for superficial browsing but rather instantiate the Rigor and Balance criterion and promote depth and mastery.

***V. Consistent Progressions: Materials are consistent with the progressions in the standards, by (all of the following):***

***1. Basing content progressions on the grade-by-grade progressions in the Standards. Progressions in materials match closely with those in the standards.*** This does not require the table of contents in a book to be a replica of the content Standards; but the match between the standards and what students are to learn should be close in each grade. Discrepancies are clearly aimed at helping students

21 Cf. CCSSM, p. 84. Also note that modeling is a mathematical practice in every grade, but in high school it is also a content category (CCSSM, pp. 72, 73); therefore, modeling is generally enhanced in high school materials, with more elements of the modeling cycle (CCSSM, p. 72).

meet the standards as written, rather than effectively rewriting the standards. Comprehensive materials do not introduce gaps in learning by omitting content that is specified in the standards.

The basic model for grade-to-grade progression involves students making tangible progress during each given grade, as opposed to substantially reviewing then marginally extending from previous grades. Grade-level work begins during the first two to four weeks of instruction, rather than being deferred until later as previous years' content is reviewed. Remediation may be necessary, particularly during transition years, and resources for remediation may be provided, but review is clearly identified as such to the teacher, and teachers and students can see what their specific responsibility is for the current year.

Digital and online materials that allow students and/or teachers to navigate content across grade levels promote the standards' coherence by tracking the structure and progressions in the standards. For example, such materials might link problems and concepts so that teachers and students can browse a progression.

*2. Giving all students extensive work with grade-level problems.* Differentiation is sometimes necessary, but materials often manage unfinished learning from earlier grades inside grade-level work, rather than setting aside grade-level work to reteach earlier content. Unfinished learning from earlier grades is normal and prevalent; it should not be ignored nor used as an excuse for cancelling grade level work and retreating to below-grade work. (For example, the development of fluency with division using the standard algorithm in grade 6 is the occasion to surface and deal with unfinished learning about place value; this is more productive than setting aside division and backing up.) Likewise, students who are "ready for more" can be provided with problems that take grade-level work in deeper directions, not just exposed to later grades' topics.

*3. Relating grade level concepts explicitly to prior knowledge from earlier grades.* The materials are designed so that prior knowledge becomes reorganized and extended to accommodate the new knowledge. Grade-level problems in the materials often involve application of knowledge learned in earlier grades. Although students may well have learned this earlier content, they have not learned how it extends to new mathematical situations and applications. They learn basic ideas of place value, for example, and then extend them across the decimal point to tenths and beyond. They learn properties of operations with whole numbers, and then extend them to fractions, variables, and expressions. The materials make these extensions of prior knowledge explicit. Note that cluster headings in the standards sometimes signal key moments where reorganizing and extending previous knowledge is important in order to accommodate new knowledge (e.g., see the cluster headings that use the phrase "Apply and extend previous understanding").

***VI. Coherent Connections: Materials foster coherence through connections at a single grade, where appropriate and where required by the standards, by (all of the following):***

***1. Including learning objectives that are visibly shaped by CCSSM cluster headings, with***

***meaningful consequences for the associated problems and activities.*** While some clusters are simply the sum of their individual standards (e.g., 8.EE.C), many are not (e.g., 8.EE.B). In the latter cases, cluster headings function like topic sentences in a paragraph in that they state the point of, and lend additional meaning to, the individual content Standards that follow. Cluster headings can also signal multi-grade progressions, by using phrases such as "Apply and extend previous understandings of [X] to do [Y]." Hence an important criterion for coherence is that some or many of the learning objectives in the materials are visibly shaped by CCSSM cluster headings, with meaningful consequences for the associated problems and activities. Materials do not simply treat the standards as a sum of individual content Standards and individual practice Standards.

***2. Including problems and activities that serve to connect two or more clusters in a domain, or two or more domains in a grade, in cases where these connections are natural and important.*** If instruction only operates at the individual standard level, or even at the individual cluster level, then some important connections will be missed. For example, robust work in 4.NBT should sometimes or often synthesize across the clusters listed in that domain; robust work in grade 4 should sometimes or often involve students applying their developing computation NBT skills in the context of solving word problems detailed in OA. Materials do not invent connections not explicit in the standards without first attending thoroughly to the connections that are required explicitly in the standards (e.g., 3.MD.7 connects area to multiplication, to addition, and to properties of operations; A-REI.11 connects functions to equations in a graphical context.) Not everything in the standards is naturally well connected or needs to be connected (e.g., Order of Operations has essentially nothing to do with the properties of operations, and connecting these two things in a lesson or unit title is actively misleading). Instead, connections in materials are mathematically natural and important (e.g., base-ten computation in the context of word problems with the four operations), reflecting plausible direct implications of what is written in the standards without creating additional requirements.

***VII. Practice-Content Connections: Materials meaningfully connect content Standards and practice Standards.*** "Designers of curricula, assessments, and professional development should all attend to the need to connect the mathematical practices to mathematical content in mathematics instruction." (CCSSM, p. 8.) Over the course of any given year of instruction, each mathematical practice standard is meaningfully present in the form of activities or problems that stimulate students to develop the habits of mind described in the practice Standards. These practices are well-grounded in the content Standards. Materials are accompanied by an analysis, aimed at evaluators, of how the authors have approached each practice Standard in relation to content within each applicable grade or grade band. Materials do not treat the practice Standards as static across grades or grade bands, but instead tailor the connections to the content of the grade and to grade-level-appropriate student thinking. Materials also include teacher-directed materials that explain the role of the practice Standards in the classroom and in students' mathematical development.

***VIII. Focus and Coherence via Practice Standards: Materials promote focus and coherence by connecting practice Standards with content that is emphasized in the Standards.*** Content and practice Standards are not connected mechanistically or randomly, but instead support focus and coherence. Examples: Materials connect looking for and making use of structure (MP.7) with structural themes emphasized in the standards

such as properties of operations, place value decompositions of numbers, numerators and denominators of fractions, numerical and algebraic expressions, etc; materials connect looking for and expressing regularity in repeated reasoning (MP.8) with major topics by using regularity in repetitive reasoning as a tool with which to explore major topics. (In K–5, materials might use regularity in repetitive reasoning to shed light on, e.g., the 10 + 10 addition table, the 10 x 10 multiplication table, the properties of operations, the relationship between addition and subtraction or multiplication and division, and the place value system; in 6–8, materials might use regularity in repetitive reasoning to shed light on proportional relationships and linear functions; in high school, materials might use regularity in repetitive reasoning to shed light on formal algebra as well as functions, particularly recursive definitions of functions.)

***IX. Careful Attention to Each Practice Standard: Materials attend to the full meaning of each practice standard.*** For example, MP.1 does not say, "Solve problems." Or "Make sense of problems." Or "Make sense of problems and solve them." It says "Make sense of problems and persevere in solving them." Thus, students using the materials as designed build their perseverance in grade-level-appropriate ways by occasionally solving problems that require them to persevere to a solution beyond the point when they would like to give up. MP.5 does not say, "Use tools." Or "Use appropriate tools." It says "Use appropriate tools strategically." Thus, materials include problems that reward students' strategic decisions about how to use tools, or about whether to use them at all. MP.8 does not say, "Extend patterns." Or "Engage in repetitive reasoning." It says "Look for and express regularity in repeated reasoning." Thus, it is not enough for students to extend patterns or perform repeated calculations. Those repeated calculations must lead to an insight (e.g., "When I add a multiple of 3 to another multiple of 3, then I get a multiple of 3."). The analysis for evaluators explains how the full meaning of each practice standard has been attended to in the materials.

***X. Emphasis on Mathematical Reasoning: Materials support the standards' emphasis on mathematical reasoning, by (all of the following):***

> ***1. Prompting students to construct viable arguments and critique the arguments of others concerning key grade-level mathematics that is detailed in the content Standards (cf. MP.3).*** Materials provide sufficient opportunities for students to reason mathematically in independent thinking and express reasoning through classroom discussion and written work. Reasoning is not confined to optional or avoidable sections of the materials but is inevitable when using the materials as designed. Materials do not approach reasoning as a generalized imperative, but instead create opportunities for students to reason about key mathematics detailed in the content Standards for the grade. Materials thus attend first and most thoroughly to those places in the content Standards setting explicit expectations for explaining, justifying, showing, or proving. Students are asked to critique given arguments, e.g., by explaining under what conditions, if any, a mathematical statement is valid. Materials develop students' capacity for mathematical reasoning in a grade-level appropriate way, with a reasonable progression of sophistication from early grades up through high school.[22] Teachers

22 As students progress through the grades, their production and comprehension of mathematical arguments evolves from informal and concrete toward more formal and abstract. In early grades students employ imprecise expressions which with practice over time become more precise and viable arguments in later grades. Indeed, the use of imprecise language is part of the process in learning how to make more precise arguments in mathematics. Ultimately, conversation about arguments helps students transform assumptions into explicit and precise claims.

and students using the materials as designed spend from a quarter to a half of their classroom time communicating reasoning (by constructing viable arguments and explanations and critiquing those of others' concerning key grade-level mathematics)—recognizing that learning mathematics also involves time spent working on applications and practicing procedures. Materials provide examples of student explanations and arguments (e.g., fictitious student characters might be portrayed).

*2. Engaging students in problem solving as a form of argument.* Materials attend thoroughly to those places in the content Standards that explicitly set expectations for multi-step problems; multi-step problems are not scarce in the materials. Some or many of these problems require students to devise a strategy autonomously. Sometimes the goal is the final answer alone (cf. MP.1); sometimes the goal is to show work and lay out the solution as a sequence of well justified steps. In the latter case, the solution to a problem takes the form of a cogent argument that can be verified and critiqued, instead of a jumble of disconnected steps with a scribbled answer indicated by drawing a circle around it (cf. MP.6). Problems and activities of this nature are grade-level appropriate, with a reasonable progression of sophistication from early grades up through high school.

*3. Explicitly attending to the specialized language of mathematics. Mathematical reasoning involves specialized language.* Therefore, materials and tools address the development of mathematical and academic language associated with the standards. The language of argument, problem solving and mathematical explanations are taught rather than assumed. Correspondences between language and multiple mathematical representations including diagrams, tables, graphs, and symbolic expressions are identified in material designed for language development. Note that variety in formats and types of representations—graphs, drawings, images, and tables in addition to text—can relieve some of the language demands that English language learners face when they have to show understanding in math.

The text is considerate of English language learners, helping them to access challenging mathematics and helping them to develop grade level language. For example, materials might include annotations to help with comprehension of words, sentences and paragraphs, and give examples of the use of words in other situations. Modifications to language do not sacrifice the mathematics, nor do they put off necessary language development.

## A criterion for the mathematics and statistics in materials for Science and Technical Subjects

Lack of alignment between mathematics and science or technical subjects could have the effect of compromising the focus and coherence of the Mathematics standards. Instead of reinforcing concepts and skills already carefully introduced in math class, teachers of science and technical subjects would have to teach this material in stopgap fashion. That wouldn't serve students well in any grade, and elementary teachers in particular would preside over a chaotic learning environment.

*I. Consistency with CCSSM: Materials for science and technical subjects are consistent with CCSSM.* Materials for these subjects in K–8 do not subtract from the focus and coherence of the standards by outpacing CCSSM math or data progressions in grades K–8 or misaligning to them. In grades 6–8 and high school, materials for these subjects also build coherence across the curriculum and support college and career readiness by integrating key mathematics into the disciplines, particularly simple algebra in the physical sciences and technical subjects, and basic statistics in the life sciences and technical subjects (see Table 10).

## Table 9. Algebra and Statistics in Science and Technical Subjects

| **Algebraic competencies** integrated into materials for middle school and high school science and technical subjects | **Statistical competencies** integrated into materials for middle school and high school science and technical subjects |
|---|---|
| - Working with positive and negative numbers (including fractions) to solve problems<br>- Using variables and writing and solving equations to solve problems<br>- Recognizing and using proportional relationships to solve problems<br>- Graphing proportional relationships and linear functions to solve problems | - Working with distributions and measures of center and variability<br>- Working with simple probability and random sampling<br>- Working with bivariate categorical data (e.g., two-way tables)<br>- Working with bivariate measurement data (e.g., scatter plots) and linear models |

## Indicators of quality in instructional materials and tools for mathematics

The preceding criteria express important dimensions of alignment to the standards. The following are some additional dimensions of quality that materials and tools should exhibit in order to give teachers and students the tools they need to meet the standards:

*I. Problems in the materials are worth doing:*

*1. The underlying design of the materials distinguishes between problems and exercises.* Whatever specific terms are used for these two types, in essence the difference is that in solving problems, students learn new mathematics, whereas in working exercises, students apply what they have already learned to build mastery. Problems are problems because students haven't yet learned how to solve them; students are learning from solving them. Materials use problems to teach mathematics. Lessons have a few well designed problems that progressively build and extend understanding. Practice exercises that build fluency are easy to recognize for their purpose. Other exercises require longer chains of reasoning.

*2. Each problem or exercise has a purpose—whether to teach new knowledge, bring misconceptions to the surface, build skill or fluency, engage the student in one or several mathematical practices, or simply present the student with a fun puzzle.*

*3. Assignments aren't haphazardly designed.* Exercises are given to students in intentional sequences—for example, a sequence leading from prior knowledge to new knowledge, or a sequence leading from concrete to abstract, or a sequence that leads students through a number of important cases, or a sequence that elicits new understanding by inviting students to see regularity in repeated reasoning. Lessons with too many problems make problems a commodity; they forbid concentration, and they make focus and coherence unlikely.

*4. The language in which problems are posed is carefully considered*. Note that mathematical problems posed using only ordinary language are a special genre of text that has conventions and structures needing to be learned. The language used to pose mathematical problems should evolve with the grade level and across mathematics content.

*II. There is variety in what students produce: Students are assigned to produce answers and solutions, but also arguments and explanations, diagrams, mathematical models, etc.*

*III. There is variety in the pacing and grain size of content coverage.*

*1. Materials that devote roughly equal time to each content standard do not allow teachers and students to focus where necessary.*

*2. The standards are not written at uniform grain size.* Sometimes an individual content standard will require days of work, while other standards will be sufficiently addressed when grouped with other standards. For example, it isn't plausible that students will understand concepts of place value (e.g., 2.NBT.1) without substantial explicit instruction, problem solving, and exercises devoted to this particular point.

*IV. There are separate teacher materials that support and reward teacher study, including:*

1. Discussion of student ways of thinking with respect to important mathematical problems and concepts—especially anticipating the variety of student responses.

2. Guidance on interaction with students, mostly questions to prompt ways of thinking.

3. Guidance on lesson flow.

4. Discussion of desired mathematical behaviors being elicited among the students.

*V. The use of manipulatives follows best practices (see, e.g., Adding It Up, 2001):*

*1. Manipulatives are faithful representations of the mathematical objects they represent.* For example, colored chips can be helpful in representing some features of rational numbers, but they do not provide particularly direct representations of all of the important mathematics. The opposite of the opposite of red isn't clearly blue, for example, and chips aren't particularly well suited as models for adding rational numbers that are not integers (for this, a number line model may be more appropriate).

*2. Manipulatives are closely connected to written methods.* "Research indicates that students' experiences using physical models to represent hundreds, tens, and ones can be effective if the materials help them think about how to combine quantities and, eventually, how these processes connect with written procedures." (Adding It Up, p. 198, emphasis in the original). For example, base-ten blocks are a reasonable model for adding within 1000, but not a reasonable method for doing so; nor are colored chips a reasonable method for adding integers. (Cf. standards 1.NBT.4, 1.NBT.6, 2.NBT.7, and 5.NBT.7; these are not the only places in the curriculum where connecting to a written method is important). The word "fluently" in particular as used in the standards refers to fluency with a written or mental method, not a method using manipulatives or concrete representations.

*VI. Materials are carefully reviewed by qualified individuals, whose names are listed, to ensure:*

1. Freedom from mathematical errors[23]

2. Grade-level appropriateness

3. Freedom from bias (for example, problem contexts that use culture-specific background knowledge do not assume readers from all cultures have that knowledge; simple explanations or illustrations or hints scaffold comprehension)

4. Freedom from unnecessary language complexity.

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23 Sometimes errors in materials are simple falsehoods, e.g., printing an incorrect answer to a problem; other errors are more subtle, e.g., asking students to explain why something is so when it has been defined to be so.

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***VII. The visual design isn't distracting or chaotic, or aimed at adult purchasers, but instead serves only to support young students in engaging thoughtfully with the subject.***

***VIII. Support for English language learners and members of other special populations is thoughtful and helps those learners to meet the same standards as all other students.*** Allowing English language learners to collaborate as they strive to learn and show understanding in an environment where English is used as the medium of instruction will give them the support they need to meet their academic goals. Materials can structure interactions in pairs, in small groups, and in the large group (or in any other group configuration), as some English language learners might be shy to share orally with the large group, but might not have problem sharing orally with a small group or in pairs. (In addition, when working in pairs, if English language leaners are paired up with a student who shares the same language, they might choose to think about and discuss the problems in their first language, and then worry about doing it in English.)

***IX. (For paper-based materials.) A textbook that is focused is short. For example, by design Japanese textbooks have less than one page per lesson.*** Elementary textbooks should be less than 200 pages, middle and secondary less than 500 pages.

# The Architecture/Structure of the Standards

To develop resources that accurately support the Common Core State Standards, developers (publishers, product managers, editors, software developers, marketers and professional development providers and others creating resources to support the implementation of the CCSS) must understand the structure and architecture of the standards. The structure of the CCSS itself provides a layer of meaning and guidance to support effective implementation. The following section outlines the structure and architecture of the ELA/Literacy CCSS and the Mathematics CCSS, respectively, as well a brief explanation of the differences between the two.

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

The ELA/Literacy standards consist of domains (in Reading Literature and Reading Informational Texts), anchor standards, and grade specific standards.[24]

There are four strands: (1) Reading, which addresses foundations of reading, text complexity and the growth of comprehension; (2) Writing, which addresses text types, coherence and correctness, writing to sources and research; (3) Speaking and Listening, which deals with flexible communication and collaboration; and (4) Language, which addresses conventions, effective use, and vocabulary.

A single K–5 section lists standards for reading, writing, speaking, listening, and language across the curriculum, reflecting the fact that most or all of the instruction students in these grades receive comes from one teacher. Grades 6–12 are covered in two content area–specific sections, the first for the English language arts teacher and the second for teachers of history/social studies, science, and technical subjects.

Under each strand and applying across the grades and content areas, there are a set of College and Career Readiness (CCR) anchor standards. These standards represent the knowledge and skills students must acquire in order to be college and career ready by the time they complete high school. The reading and writing strands each have ten CCR anchor standards. The speaking/listening and language strands each have six CCR anchor standards. They provide a source of focus and coherence: For instance, the same ten CCR

24 There is a tendency in the field to shorten The Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science and Technical Subjects to "ELA" and this term does not properly encompass the Standards for Literacy in History/Social Studies, Science and Technical Studies. Thus, the Standards framework as a whole should be referred to as "ELA/Literacy."

anchor standards for reading apply to both literary and informational texts, including texts in history/social studies, science, and technical subjects. The ten CCR anchor standards for writing cover numerous text types and subject areas. This means that students can develop mutually reinforcing skills and exhibit mastery of standards for reading and writing across a range of texts and classrooms.

The grade specific standards outline the incremental growth that students need to achieve each year over the course of their K-12 journey to meet the anchor standards and, thus, to be college and career ready in literacy by the time they complete high school. Each grade specific standard corresponds to the same-numbered anchor standard. In other words, each anchor standard is accompanied by ( corresponds to ) a set of grade specific standards that specify the grade-appropriate end-of-year expectations in K-12 that lead up to the more broadly stated anchor standard. Each grade specific standard can be identified by its strand, grade, and number (or number and letter, where applicable), so that RI.9-10.2, for example, stands for Reading, Informational Text, grade 9-10, standard 2 ("Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.") and W.3.1b stands for Writing, grade 3, standard 1, sub-item b (See Illustration 1, below).

**Illustration 1.**
**ELA/Literacy Standards Architecture / Structure**

**Writing Standards / Grade 3 students**
**Text Types and Purposes**

1. Write opinion pieces on topics or texts, supporting a point of view with reasons.

   a. Introduce the topic or text they are writing about, state an opinion, and create an organizational structure that lists reasons.

   b. Provide reasons that support the opinion.

   c. Use linking words and phrases (e.g., *because*, *therefore*, *since*, *for example*) to connect opinion and reasons.

   d. Provide a concluding statement or section.

**Standard W.3.1b**

The ELA/Literacy standards have three supporting appendices. Appendix A of the CCSS for ELA/Literacy provides information on the research supporting key elements of the standards, including how text complexity can be measured and offers guidance to teachers and curriculum developers on selecting appropriate text for students to read. This appendix also provides a detailed description of Tier 2 words, those words that readers will find in all types of complex text. Appendix B of the CCSS for ELA/Literacy contains a sample of grade-specific text of appropriate quality and complexity. Appendix C of the CCSS for ELA/Literacy provides writing samples that have been annotated to illustrate the criteria required to meet the CCSS for particular types of writing—argument, informative/explanatory text, and narrative—in a given grade.

## Mathematics

The Common Core State Standards for Mathematics consist of domains, clusters and standards.

Domains are larger groups of related standards that often persist across two or more grades (e.g. Operations and Algebraic Thinking).

Clusters are groups of related standards. Standards from different clusters may sometimes be closely related, because mathematics is a connected subject.

Standards define what students should understand and be able to do by end-of-year of the specific grade (for K-8) or specific conceptual category (for high school).

The standards should not be considered independent of the cluster and domain under which they appear in the standards document. In the CCSS for Mathematics, "Standards" refers to all elements of the design – the wording of domain headings, cluster headings, and individual statements; high school category descriptions; and the placement of the standards for mathematical practice at each grade level. The pieces are designed to fit together, presenting a coherent whole.[25]

The CCSS also include eight mathematical practices that describe varieties of expertise that students are expected to develop. They describe ways in which developing student practitioners of the discipline of mathematics increasingly ought to engage in the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle and high school years. The practices set the expectation that graduates who are college and career ready:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

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25 The Structure is the Standards, Essay by Phil Daro, William McCallum, and Jason Zimba, February 16, 2012, http://commoncoretools.me/2012/02/16/the-structure-is-the-Standards.

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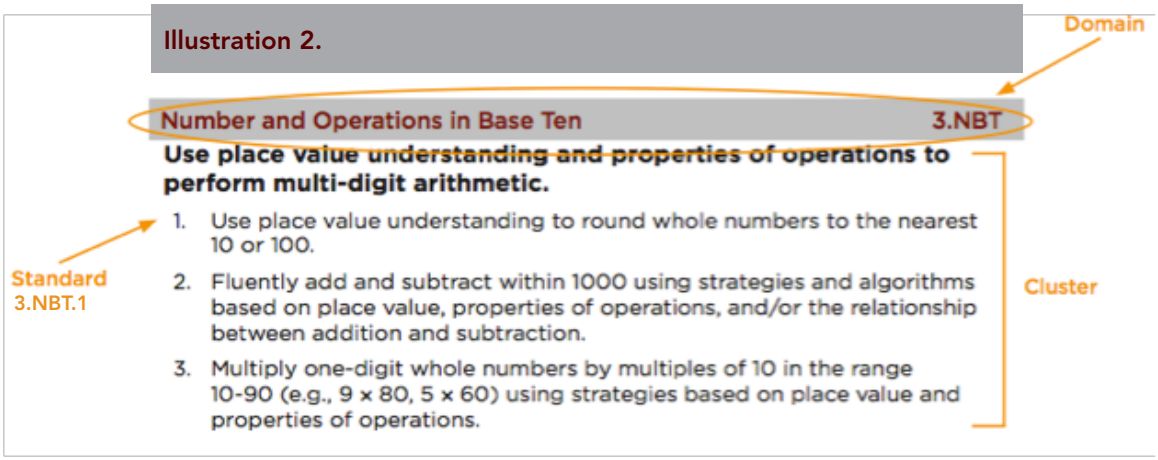
In supporting materials and resources, the practices should not be presented as detached objectives. They must always appear within the context of the content standards. As explained in the CCSS (p. 8), "The Standards for Mathematical Content are a balanced combination of procedure and understanding. Expectations that begin with the word 'understand' are often especially good opportunities to connect the practices to the content. Students who lack understanding of a topic may rely on procedures too heavily. Without a flexible base from which to work, they may be less likely to consider analogous problems, represent problems coherently, justify conclusions, apply the mathematics to practical situations, use technology mindfully to work with the mathematics, explain the mathematics accurately to other students, step back for an overview, or deviate from a known procedure to find a shortcut. In short, a lack of understanding effectively prevents a student from engaging in the mathematical practices."

The CCSS in Mathematics are organized by grade level for grades K-8 and by conceptual categories (Number and Quantity, Algebra, Functions, Modeling, Geometry, and Statistics and Probability) for high school. In grades K-8, each grade specific standard can be identified by its grade, domain, and number (or number and letter, where applicable), so that 3.NBT.1 for example, stands for grade 3, domain Number and Operations in Base Ten, standard 1 (See Illustration 2, below). High school standards can be identified by conceptual category, domain, and number (or number and letter, where applicable), so that A.REI.4a, for example, stands for conceptual category Algebra, domain Reasoning with Equations and Inequalities, standard 4, sub-item a.




The high school CCSS in Mathematics make use of two symbols (+) and (⋆) not used in the K-8 standards. While the high school Standards specify the mathematics that all students should study in order to be college and career ready, additional mathematics that students should learn in order to take advanced courses such as calculus, advanced statistics, or discrete mathematics is indicated by (+). Modeling is best interpreted not as a collection of isolated topics but in relation to other standards. Making mathematical models is a standard for Mathematical Practice, and specific modeling standards appear throughout the high school standards indicated by (⋆). When the star (⋆) appears on the heading for a group of standards, it should be applied to all standards in that group.

*Why are the two structures different?*

As is clear above, the structure of the ELA/Literacy and Mathematics standards is different, in large part because the standards in Mathematics act to define a body of content while the ELA/Literacy standards do not. Consequently, in the ELA/Literacy standards, headings such as "craft and structure" or "key ideas" in the Reading Standards don't strictly define different domains in reading and do not carry with them any substantive meaning. It is the anchor standards that serve as the organizing structure and add important meaning to the grade specific standards; the headings do not. In the Mathematics standards, however, cluster headings have an important design function in organizing the subject matter and in adding important meaning to the individual content Standards; Mathematics cluster headings in the standards are also proving crucial in implementation efforts whereas literacy headings appropriately are not. The anchor standards, present in ELA/Literacy, are absent in Mathematics. The cluster headings in Mathematics, absent in ELA/Literacy, provide context for the Mathematics standards that fall within the cluster.

Perhaps another way of looking at the standards to understand the different hierarchies in the design of ELA/Literacy and Mathematics is to compare Table 7 (on page 43) and Table 10. Table 7 outlines the K-8 progression to Algebra showing how for the Mathematics standards the clusters are an important part of the hierarchy. For the ELA/Literacy standards, on the other hand, individual grade standards (not clusters of standards) build toward specific Anchor standards. Table 10 outlines the K-12 grade specific standards that build toward Anchor Standard 1 for the Writing Strand, showing how in the ELA standards, each grade standard is directly connected to an anchor standard and a strand.

## Table 10. Grade Specific Standards Building Toward an Anchor Standard for the Writing Strand

| | |
|---|---|
| **Strand** | **Writing** |
| **Anchor Standard 1 for writing strand** | **Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence** |
| **Grade specific standards building toward Anchor Standard 1 for writing strand** | **Kinder.** Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., My favorite book is . . .).<br><br>**Grade 1.** Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure.<br><br>**Grade 2.** Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section.<br><br>**Grade 3.** Write opinion pieces on topics or texts, supporting a point of view with reasons.<br>1. Introduce the topic or text they are writing about, state an opinion, and create an organizational structure that lists reasons.<br>2. Provide reasons that support the opinion.<br>3. Use linking words and phrases (e.g., because, therefore, since, for example) to connect opinion and reasons.<br>4. Provide a concluding statement or section.<br><br>**Grade 4.** Write opinion pieces on topics or texts, supporting a point of view with reasons and information.<br>a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose.<br>b. Provide reasons that are supported by facts and details.<br>c. Link opinion and reasons using words and phrases (e.g., for instance, in order to, in addition).<br>d. Provide a concluding statement or section related to the opinion presented.<br><br>**Grade 5.** Write opinion pieces on topics or texts, supporting a point of view with reasons and information.<br>a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which ideas are logically grouped to support the writer's purpose.<br>b. Provide logically ordered reasons that are supported by facts and details.<br>c. Link opinion and reasons using words, phrases, and clauses (e.g., *consequently, specifically*).<br>d. Provide a concluding statement or section related to the opinion presented.<br><br>**Grade 6.** Write arguments to support claims with clear reasons and relevant evidence.<br>a. Introduce claim(s) and organize the reasons and evidence clearly.<br>b. Support claim(s) with clear reasons and relevant evidence, using credible sources and demonstrating an understanding of the topic or text.<br>c. Use words, phrases, and clauses to clarify the relationships among claim(s) and reasons.<br>d. Establish and maintain a formal style.<br>e. Provide a concluding statement or section that follows from the argument presented. |

## Table 10. Grade Specific Standards Building Toward an Anchor Standard for the Writing Strand, continued

| | |
|---|---|
| **Grade specific standards building toward Anchor Standard 1 for writing strand** | **Grade 7.** Write arguments to support claims with clear reasons and relevant evidence.<br>a. Introduce claim(s), acknowledge alternate or opposing claims, and organize the reasons and evidence logically.<br>b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.<br>c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), reasons, and evidence.<br>d. Establish and maintain a formal style.<br>e. Provide a concluding statement or section that follows from and supports the argument presented.<br><br>**Grade 8.** Write arguments to support claims with clear reasons and relevant evidence.<br>a. Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.<br>b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.<br>c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.<br>d. Establish and maintain a formal style.<br>e. Provide a concluding statement or section that follows from and supports the argument presented.<br><br>**Grades 9-10.** Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.<br>1. Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence.<br>2. Develop claim(s) and counterclaims fairly, supplying evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level and concerns.<br>3. Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.<br>4. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.<br>5. Provide a concluding statement or section that follows from and supports the argument presented.<br><br>**Grades 11-12.** Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.<br>a. Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences claim(s), counterclaims, reasons, and evidence.<br>b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level, concerns, values, and possible biases.<br>c. Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.<br>d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.<br>e. Provide a concluding statement or section that follows from and supports the argument presented. |

# Common Core State Standards Official Identifiers and XML Representation[26]

As states move from widespread adoption of the CCSS to implementation, there is a need to appropriately identify and link assets using a shared system of identifiers and a common XML representation. In 2012 The Council of Chief State School Officers (CCSSO) and National Governors Association Center for Best Practices (NGA Center), released an official, viable approach for publishing identifiers and XML designation to represent the standards, consistent with their adopted format, as outlined below.

*1. **Canonical identifiers for individual Standards*** - Rather than force a decision among three competing options, the NGA Center and CCSSO have decided that the following three options have distinctive values and should be published together simultaneously. Unique identifiers are needed for humans and technology to refer to individual standards in a consistent manner. Three sets of canonical identifiers, as detailed below and now readily available on the Common Core State Standards Initiative's website[27], will maintain fidelity to the published and adopted documents, while acknowledging the wide variety of use cases, users, and systems needing to reference the standards.

a. Dot notation including those from the published and adopted standards documents, e.g. Math.6.EE.1, useful for conversation and displayed with the text of a standard. Published identifiers will necessarily follow a different nomenclature in mathematics than in ELA/Literacy, because the standards documents themselves follow a different system in each discipline, as described above. These differences have been adopted by states.

b. De-referenceable Uniform Resource Identifier (URIs) at the corestandards.org domain, e.g. http://corestandards.org/2010/math/content/6/EE/1 or http://corestandards.org/2010/math/practice/MP7. Matching the published identifiers, these deferenceable URIs allow individuals and technology systems to validate the content of a standard by viewing the web page at the identifier's uniform resource locator (URL). The NGA Center and CCSSO strongly recommend that www.corestandards.org remain the address of record for referring to standards.

c. Globally unique identifiers (GUIDs), e.g. A7D3275BC52147618D6CFEE43FB1A47E. These allow individuals and technology systems, when needed, to refer to standards in both disciplines in a

26 For additional information about XML representation, please access the Common Core State Standards Initiative's website, http://www.coreStandards.org/common-core-state-Standards-official-identifiers-and-xml-representation.

27 The sets of canonical identifiers, as detailed in this document are also readily available for anyone to access on the Common Core State Standards Initiative's website, http://www.coreStandards.org/common-core-state-Standards-official-identifiers-and-xml-representation.

common format without removing the differences in the published identifiers. GUIDs are unwieldy for human use, but they are necessarily complex to guarantee uniqueness, an important characteristic for databases, and are intended for use by computer systems. There is no need for educators to decode GUIDs.

All individual standards and lettered sub-items; all anchor Standards in ELA; and all practice Standards in math, as well as cluster headings in math, have received identifiers. Identifiers have not been provided for ELA/Literacy headings for the reasons described above. The identifiers preserve links between standards and clusters, which is necessary to ensure that applications using the system can preserve the meanings that arise from considering the cluster headings and the individual content standards in conjunction with one another.

In the process to develop the identifiers, key clarifications were made and are briefly summarized below. A memo with full details of the changes made during the identifier development process is available on the Common Core State Standards Initiative's website. [28]

***Different hierarchies***

The CCSS for Mathematics and the CCSS for English Language Arts and Literacy in History/Social Studies, Science and Technical Subjects are different in many ways, and the hierarchies from the framework to the component level reflect some of those differences, as described in detail above and outlined in Table 11, below. To require conformance in the hierarchical structures in the two frameworks as part of the identifier/XML exercise would ignore the fundamental organizational characteristics of the two standards documents and would compromise the integrity of the architecture of each set of standards.

**Table 11. Official Hierarchical Nomenclature**

| Math | ELA/Literacy |
|---|---|
| - Initiative<br>- Framework<br>- Set<br>- Grade<br>- Domain<br>- Cluster<br>- Standard<br>- Component (optional) | - Initiative<br>- Framework<br>- Set (optional)<br>- Strand + Domain<br>- Grade<br>- Standard<br>- Component (optional) |

In ELA/Literacy, the Domains, such as Reading Standards for Literature (RL) fully reflect the Strand (Reading), so this level of the hierarchy reflects the Strand and Domain combination.

28 A memo with full details of the changes made during the identifier development process is available at http://www.coreStandards.org/assets/identifiers_feedback_memo.pdf.

In Math, Set refers to the sets of content and practice standards. In ELA/Literacy it is an optional designation for the anchor standards.

***Framework names and Revisions***

To differentiate the Common Core State Standards from state standards (in other domains or as part of the optional, up to 15 percent standards additions), CCSS is now added to the front of the dot notation identifiers. For example, what appears in the PDFs as RL.2.1 is officially CCSS.ELA-Literacy.RL.2.1. It is assumed that educators will continue to use the shorter RL.2.1 in conversation, but the official dot notation identifier will contain the CCSS component.

The publication year of 2010 is provided in the metadata and XML for the standards but is not included in identifiers. Any future refinements to the CCSS will be appended with a revision number, for example CCSS.ELA-Literacy.RF.4.4r2, or http://corestandards.org/ELA-Literacy/RF/4/4r2, reflects the second revision, or third version of CCSS.ELA-Literacy.RF.4.4.

***2. XML and metadata - The XML representation of the standards and the embedded metadata within the HTML pages is available at www.corestandards.org.*** To access the XML and metadata, append "XML" to any of the identifier URLs. The XML and metadata represent the intent and language of the standards and go no further. Hierarchies and relationships that exist in the adopted documents are reflected in the data files, but other data points not specifically codified are not. The corestandards.org XML file follows the Common Education Data standards (CEDS) schema, also used by Schools Interoperability Framework Association (SIF). To incorporate the three identifiers, minor changes were made to the CEDS schema, and those have been submitted to the CEDS Stakeholder Group for consideration in future versions of CEDS. We leave it up to individuals and organizations to decide whether to keep or replace their current data files.

***3. Granularity***

The Partnership for the Assessment of Readiness for College and Careers (PARCC), the Smarter Balanced Assessment Consortium (Smarter Balanced) and the State Educational Technology Directors Association (SETDA) – working in partnership with the Council of Chief State School Officers (CCSSO) – have launched a collaborative, state-centric project ("Granular Identifiers and Metadata for the Common Core State Standards" or GIM-CCSS) to facilitate the long-term technical implementation of the Common Core State Standards (CCSS) in a digital format that meets the diversity of stakeholder needs in the field, while preserving the conceptual and structural integrity of the standards. [29]

While CCSSO and the National Governors Association (NGA) Center for Best Practices have developed a foundational digital identifier structure for the Common Core, a more fine-grained digital mapping is desired to fulfill the goals and objectives of the multi-state assessment consortia, as well as for other purposes including the digital alignment of instructional materials and professional development resources.

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29 http://www.setda.org/web/guest/Interoperability

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The technical work to be undertaken by GIM-CCSS is very specifically limited in scope to developing digital references to the conceptual statements already contained within the CCSS documents and to preserving the logical structure dictated by the standards authors. It will build on the prior work of CCSSO-NGA, and with their input and ratification, describe and publish more detailed, digital, machine-readable identifiers and metadata for the Common Core. Products of the project will be published as an open standard to enable non-restricted use, maximize interoperability, and promote extensibility.

# Closing

The adoption of the Common Core State Standards by forty-six states, three U.S. territories and the District of Columbia presents an unprecedented opportunity for innovation. Armed with a deep understanding of the major shifts these standards represent, in addition to a mastery of the standards' architecture and structure, software developers, publishers, professional development providers, educators and others creating resources to support the implementation of the CCSS should be well positioned to create innovative new programs and materials that drive student achievement.