FROM THE COLLEGE AND CAREER READY STANDARDS
TO TEACHING AND LEARNING IN THE CLASSROOM:
A SERIES OF RESOURCES FOR TEACHERS

GETTING A HANDLE ON THE STANDARDS

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ORGANIZATION

INTRODUCTION

This resource is part of a series produced by the Center for Standards and Assessment Implementation (CSAI) to assist teachers and those who support teachers to plan teaching and learning from College and Career Ready Standards (CCRS) for all students, including students with disabilities, English learners, academically at-risk students, students living in extreme poverty, and gifted/talented students. The series of resources addresses key shifts in learning and teaching represented in the CCRS. This resource focuses on understanding the Common Core State Standards (CCSS; National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010). A section on background reading is included at the end.

HOW TO USE THIS RESOURCE

This resource provides an overview of the Mathematics and ELA & Literacy CCSS as well as activities for educators to examine the CCSS in depth. Information about the Mathematics CCSS is presented first, followed by instructions and activities that allow educators to study the new Mathematics Standards. Next is a section on the ELA & Literacy CCSS with instructions to examine those Standards. A following section details analysis procedures that apply to both the Mathematics and ELA & Literacy CCSS. This resource also includes printable worksheets to be used with the aforementioned activities and helpful website information on the CCSS that educators may want to further explore.

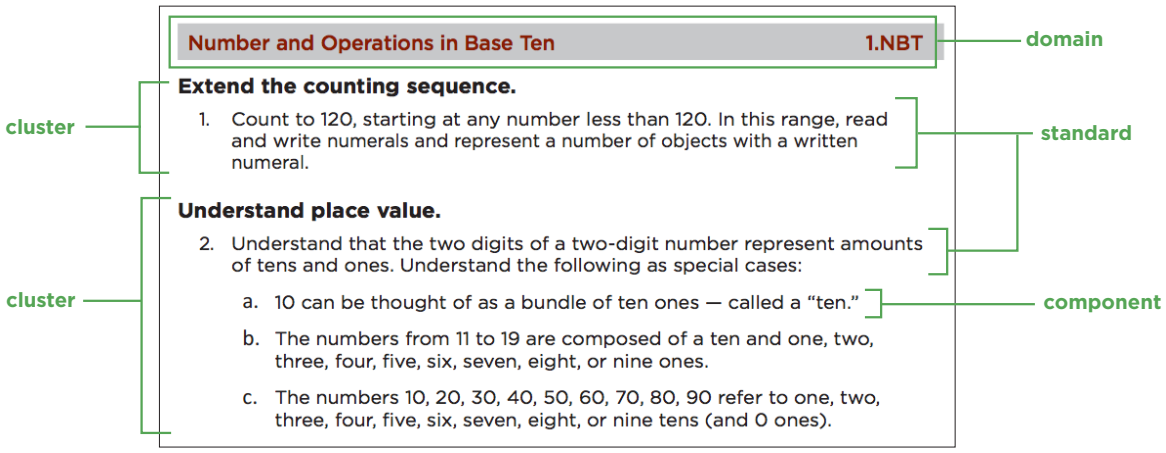
The information and materials provided in this resource are intended to help educators at all levels to better understand the CCSS. Educators can choose to work through all sections of this resource or to use and/or adapt specific sections to tailor this resource to their needs.

ORGANIZING TERMS USED IN THE CCSS

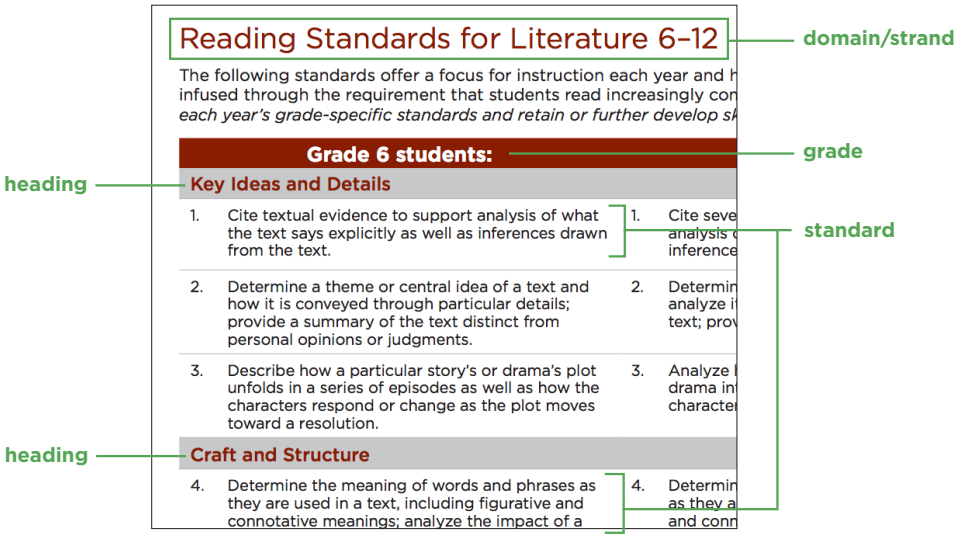
Different naming conventions are used in the organization of the Standards for Mathematics and ELA & Literacy. A helpful first step in becoming familiar with the CCSS is understanding the terms used in their organization. The table below shows terms used to describe the grouping hierarchy of standards in each content area.

Mathematics	ELA & Literacy
Grade (K-8)/Conceptual Category (HS)	Domain/Strand
Domain	Grade
Cluster	Heading
Standard	Standard
Components (a, b, c)	Components (a, b, c)

Note that strands do not exist in Math and clusters are not part of the hierarchy in ELA & Literacy. These naming conventions are illustrated in the following diagrams.



National Governors Association Center for Best Practices, Council of Chief State School Officers (2010b, p. 15)



National Governors Association Center for Best Practices, Council of Chief State School Officers (2010a, p. 36)

MATHEMATICS CCSS: SHIFTS AND THEMES

Before beginning the fine-grained work of studying the Standards in detail, it is helpful to know the main shifts and themes represented in the Mathematics CCSS.

SHIFTS

The table below highlights the major shifts from current practice found in the Mathematics CCSS.

- Focus on fewer standards and in greater depth
- Build student understanding from grade to grade and show relationships between and among standards within the grades
- Balance conceptual knowledge and procedural fluency
- Emphasize specific mathematical practices, including reasoning abstractly and quantitatively, constructing viable arguments, and critiquing the reasoning of others

Sources: Moschkovich, 2012; Rothman, 2012

THEMES

The CCSS embody key, reoccurring themes for student learning that can serve as guideposts in analyzing and understanding the standards. Below are the themes found in the Mathematics CCSS:[1]

1. *Students value evidence*. They understand and use stated assumptions, definitions, previously established results, and counterexamples as they reason through an argument to a conclusion, and they are able to critique others' reasoning and use of evidence.
2. *Students communicate effectively.* In discussions with others and in their own reasoning, they use clear definitions, specify units of measurement, label quantities, and use precise language. They can ask useful questions to challenge or clarify mathematical reasoning.
3. *Students develop a deep understanding* of mathematical topics and make connections within and across topics and domains.
4. *Students approach mathematical content strategically*. They consistently apply productive mathematical practices when approaching unfamiliar content, planning a solution strategy, or persevering towards proficiency.
5. *Students achieve both conceptual understanding and procedural fluency*. They comprehend mathematical concepts, operations, and relations, and they are able to select and carry out appropriate procedures with accuracy and efficiency.
6. *Students apply mathematics to practical situations*. They can identify the important quantities and relationships in a real-world context and represent them mathematically. They translate their mathematical results to the language of the original problem and reflect on whether the results make sense as well as the implications.

[1] The documents and resources that the themes were drawn from include: CCSS for Mathematical Practice, CCSS for Mathematical Content, and the literature supporting and connecting these standards, including Key Points in Mathematics and Connecting the Standards for Mathematical Practice to the Standards for Mathematical Content; and research findings from the Understanding Language Initiative on making the Common Core Standards accessible to English Language Learners (Moschkovich, 2012).

MATHEMATICS CCSS ARCHITECTURE

The Mathematics CCSS comprise both Practice and Content Standards. The Practice Standards apply broadly to all students in K-12, and they describe the practices and habits that characterize proficient mathematicians. The Content Standards are organized by grade level in K-8 and by conceptual category in high school. The Content Standards reflect a balance of conceptual understanding, procedural fluency, and application.

The Practice and Content Standards were developed to intersect around central and generative concepts in the school mathematics curriculum. According to the Common Core Standards Writing Team (2013), "The ways in which content knowledge is deployed (or not) are intertwined with mathematical dispositions and attitudes" (p. 8). Therefore, the Mathematics CCSS emphasize that mathematics educators at all levels need to connect the Practice Standards to the Content Standards during mathematics instruction.

The following graphic provides a snapshot of the Mathematics CCSS architecture.

OVERARCHING STANDARDS

Standards for Mathematical Practice

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

MATHEMATICS CONTENT STANDARDS

K-8 Grade Level Content Standards by Domain

- Counting and Cardinality
- Number and Operations in Base Ten
- Number and Operations—Fractions
- The Number System
- Operations and Algebraic Thinking
- Expressions and Equations
- Measurement and Data
- Ratios and Proportional Relationships
- Functions
- Geometry
- Statistics and Probability

High School Standards by Conceptual Category

- Number and Quantity
- Algebra
- Functions
- Modeling
- Geometry
- Statistics and Probability

In grades K-8, the standards are organized by grade. At each grade level, 4 or 5 mathematics domains are addressed (out of 11 total domains). A *domain* is defined as a large group of related standards. The following table illustrates the domains covered in each grade.

CCSS Mathematics Domain	K	1	2	3	4	5	6	7	8
Counting and Cardinality	x								
Number and Operations in Base Ten	x	x	x	x	x	x			
Number and Operations—Fractions				x	x	x			
The Number System							x	x	x
Operations and Algebraic Thinking	x	x	x	x	x	x			
Expressions and Equations							x	x	x
Measurement and Data	x	x	x	x	x	x			
Ratios and Proportional Relationships							x	x	
Functions									x
Geometry	x	x	x	x	x	x	x	x	x
Statistics and Probability							x	x	x

Unlike the K-8 standards, the high school standards are not organized by grade level. Instead, what to teach at each grade level is a decision made by individual States or districts. An appendix to the Mathematics CCSS includes recommendations about sequencing and organizing the standards into a program of high school courses. For example, schools and districts can sequence high school courses with a traditional pathway (Algebra I, Geometry, Algebra II) or an integrated pathway (Mathematics I, II, III).

The high school standards are organized into 6 conceptual categories: Number and Quantity, Algebra, Functions, Modeling, Geometry, Statistics and Probability. A *conceptual category* can be understood as a collection of related domains. Under each conceptual category, 4 to 6 domains are listed. The conceptual category of Modeling is an exception. Because Modeling is a Mathematical Practice standard, and because it is best interpreted in relation to other standards (not as a collection of isolated topics), it does not have its own associated domains. The standards for Modeling are integrated throughout the high school standards. Their presence within another domain is indicated by a star symbol (*) in the CCSS and in the following table.

Number and Quantity	Algebra	Functions	Geometry	Statistics and Probability
The Real Number System	Seeing Structure in Expressions	Interpreting Functions	Congruence	Interpreting Categorical and Quantitative Data
Quantities (*)	Arithmetic with Polynomials and Rational Expressions	Building Functions	Similarity, Right Triangles, and Trigonometry	Making Inferences and Justifying Conclusions
The Complex Number System	Creating Equations (*)	Linear, Quadratic, and Exponential Models (*)	Circles	Conditional Probability and the Rules of Probability
Vector and Matrix Quantities	Reasoning with Equations and Inequalities	Trigonometric Functions	Expressing Geometric Properties with Equations	Using Probability to Make Decisions
			Geometric Measurement and Dimension	
			Modeling with Geometry (*)	

The K-8 domains and high school conceptual categories comprise a learning progression, or the progression of learning that occurs as students become more sophisticated in their understandings of a concept. The following table illustrates how the K-8 domains relate to high school conceptual categories.[2]

<table>
<tr><th>Kindergarten</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>HS</th></tr>
<tr><td>Counting & Cardinality</td><td colspan="8"></td><td rowspan="3">Number & Quantity</td></tr>
<tr><td colspan="6">Number & Operations in Base Ten</td><td colspan="2">Ratio & Proportional Relationships</td><td></td></tr>
<tr><td colspan="3"></td><td colspan="3">Number & Operations - Fractions</td><td colspan="3">The Number System</td></tr>
<tr><td colspan="6" rowspan="2">Operations & Algebraic Thinking</td><td colspan="3">Expressions & Equations</td><td>Algebra</td></tr>
<tr><td colspan="2"></td><td>Functions</td><td>Functions</td></tr>
<tr><td colspan="9">Geometry</td><td>Geometry</td></tr>
<tr><td colspan="6">Measurement & Data</td><td colspan="3">Statistics & Probability</td><td>Statistics & Probability</td></tr>
</table>

Marcelletti, McCarthy, & Saunders (2013, p. 158). Reproduced with permission.

[2] The table shows basic progressions of K-8 domains and high school conceptual categories. For more detailed explanations and examples of progressions in mathematics, please visit the Institute for Mathematics and Education at http://ime.math.arizona.edu/progressions/.

BECOMING FAMILIAR WITH THE MATHEMATICS CCSS

In general, the Mathematics CCSS are described in more detail and organized differently from most States' previous Mathematics standards. Across all grades, the Mathematics CCSS focus on depth of learning rather than on breadth of coverage.

Before reading the Mathematics CCSS in detail, a useful first step is to browse the standards to get a sense of their structure and focus. Follow the instructions below to start the process of getting familiar with the Mathematics CCSS.[3]

STEP 1

Browsing the Standards

1. Browse the standards, noticing particular points of interest, including:
    a. Standards for Mathematical Practice
    b. Introduction and Overview for a few grade levels or courses of interest
    c. K-8 Domains and High School Conceptual Categories
    d. Glossary
    e. Specific grade level or course of greatest interest
2. Share your observations with a partner or small group.
    a. Reflect on where you notice the "shifts" and "themes" appearing in the standards.
3. Record your observations in Worksheet #1 , found in the "Worksheets" section of this resource.

Once you have a general idea of the mathematics standards as a whole, the next step is to get a deeper sense of the Practice Standards.

[3] The process is adapted, with permission, from the Talking Teaching Network, a nonprofit organization dedicated to the study and refinement of teaching and learning (http://talkingteaching.org/).

STEP 2

Interpreting the Standards for Mathematical Practice

Follow the instructions below to begin the process of understanding the Practice Standards. The activity can be completed individually, in pairs, or in small groups.

1. Read through each of the Standards for Mathematical Practice, highlighting or underlining sections you identify as key points in each of the standards.
2. Fill out Worksheet #2, describing the gist of each standard.
3. Choose one Practice Standard to learn about in more depth.
4. Read your chosen standard carefully and then discuss it with a partner or small group.
    a. Focus on gaining an understanding of the main points of the standard.
5. Write a summary of the standard in your own words, drawing on your discussion, worksheet, and the highlighted or underlined sections you identified earlier.
6. If you are in a setting where people are working on writing summaries of different Practice Standards, take turns sharing your interpretations of the Practice Standards with the whole group.
7. Provide feedback to one another and make changes to your summary as needed, until you are confident you understand the main points of your standard, including how it is distinct from the other Practice Standards.

STEP 3

Analyzing the Mathematical Content Standards by Type and for Connections to Practice Standards[4]

The Mathematics CCSS include a variety of types of content standards. They address conceptual understandings, procedural skills and fluency, and applications of concepts and skills. While the Standards for Mathematical Practice apply broadly to **all** the math content standards, sometimes a math practice standard is particularly well aligned to a content standard.

For this task, teachers study their grade-level or course standards domain-by-domain and code each standard for Conceptual Understanding, Procedural Fluency, or Application. Additionally, if a standard lends itself naturally to a particular math practice, teachers code that content standard accordingly.

The goal of this task is not to "correctly code the standards," and there may be legitimate disagreement about the coding of certain standards. This task is designed to facilitate an in-depth understanding of grade-level standards, a necessary first step in creating a year-long plan as well as daily lesson goals.

See the following text box for a description of the categories and corresponding codes for different types of standards.

[4] The coding categories were adapted from National Research Council (2001), *Adding It Up*. The process outlined in Step 3 is adapted with permission from Marcelletti, McCarthy, & Saunders, 2013, pp. 10, 16, 161.

C	**Conceptual Understanding.** These standards call for comprehension of mathematical ideas, operations, and relations. While conceptual understanding underpins all the standards, many standards of this type focus explicitly on understanding, identifying, describing, explaining, interpreting, and connecting key mathematical concepts and principles.
P	**Procedural Fluency.** These standards call for skill in carrying out procedures flexibly, accurately, efficiently, and appropriately. Procedures can be basic computations (e.g., multiplying or measuring) or more complex processes involving a series of steps (e.g., graphing or factoring polynomials) that produce an anticipated result.
A	**Application.** These standards call for the ability to formulate, represent, and solve mathematical problems. Application standards may include procedural fluency, but they often go beyond procedural fluency by asking students to solve word problems or refer to real-world scenarios.
MP1 - MP8	**Math Practice.** While every standard should receive at least one of the above three codes (C, A, or P), some standards should also be coded with an associated math practice. Code any content standard that aligns exceptionally well with or refers explicitly to a math practice standard with one of the eight mathematical practices.

Follow the step-by-step directions below to complete this task.

1. With a partner (or in a triad), work through the Math Content Standards one domain at a time for a particular grade level or course of your choice.
2. For each domain, first read silently the standards that comprise the domain.
3. Individually code each standard according to the categories listed above. A standard may have more than one code. Record your individual codes next to the number (or letter) of the standard in the left hand margin.
4. As a pair (or triad), review the standards in the domain and discuss your individual codes. Try to reach consensus on the coding that best characterizes each standard in the domain. Record your group consensus next to your individual code(s). If a pair cannot reach consensus simply record a split code (e.g., C/P).

   (Note: Pairs might prefer to read, discuss, and code each standard together. Reading and coding individually first is designed to provide individuals with the think-time prior to discussions, which may not be the preference of the pair.)
5. Repeat the process for the next domain in your grade level or course standards.

ELA & LITERACY CCSS: SHIFTS AND THEMES

Educators need to be aware of key shifts and themes represented in the ELA & Literacy CCSS.

SHIFTS

The table below highlights major shifts from current practice found in the ELA & Literacy CCSS.

- Increase the focus on reading non-fiction and writing expository text
- Focus on the use of evidence, including close reading to make evidence-based claims
- Require students to read complex text to build knowledge across the curriculum
- Expect students to speak and listen effectively

Sources: Bunch, Kibler & Pimental, 2012; Rothman, 2012

THEMES

Below are the themes found in the ELA & Literacy CCSS.[5] Note that themes 1-3 (valuing and using evidence, effective communication, and deep learning within and across areas of the curriculum) are similar in both the Mathematics and ELA & Literacy CCSS, whereas themes 4-6 reflect distinct, subject-specific features of the CCSS.

1. ***Students value evidence***. They cite specific evidence when interpreting text and supporting their ideas and are able to evaluate others' use of evidence.
2. ***Students communicate effectively***. They adjust the type of discourse, vocabulary, tone, and evidence sources they use, depending on their audience, task, purpose, and discipline.
3. ***Students build strong content knowledge*** and make connections within and across content areas.
4. ***Students are critical consumers of information***. They purposefully engage with an author or speaker's ideas, while questioning assumptions, premises, veracity, and soundness of reasoning.
5. ***Students manage information independently and strategically***. They seek out and use appropriate learning resources and understand the strengths and limitations of different technology and media.
6. ***Students come to understand other perspectives and cultures***. By respectfully engaging with people of varied backgrounds and reading literature representative of a variety of periods, cultures, and worldviews, students learn from the experiences of others.

[5] The documents and resources that the themes were drawn from include: College and Career Readiness Anchor Standards for ELA & Literacy and the literature supporting these standards, including Key Design Considerations, and Portraits of Students Who are College and Career Ready in Reading, Writing, Speaking, Listening, and Language; and research findings from the Understanding Language Initiative on making the Common Core Standards accessible to English Language Learners (Bunch, Kibler, & Pimentel, 2012).

ELA & LITERACY CCSS ARCHITECTURE

The ELA & Literacy CCSS comprise both Anchor and Content Standards. The Anchor Standards apply broadly to all students in K-12 and provide a summary of the content standards that are relevant across grade levels. The Content Standards lay out the Anchor Standards grade-by-grade and by subject or course expectations (e.g., Reading, Writing, etc.).

The following graphic provides a snapshot of the ELA & Literacy CCSS architecture.

OVERARCHING STANDARDS

College and Career Readiness Anchor Standards

- Reading: Literature (10)*
- Reading: Informational Text (10)
- Writing (10)
- Speaking and Listening (6)
- Language (6)

* Note: This refers to the number of Anchor Standards in this strand.

ELA & LITERACY CONTENT STANDARDS

- Reading: Literature (K-12)
- Reading: Informational Text (K-12)
- Writing (K-12)
- Speaking and Listening (K-12)
- Language (K-12)
- Reading: Foundational Skills (K-5)
- Reading: History/Social Studies (6-12)
- Reading: Science and Technical Subjects (6-12)
- Writing: History/Social Studies, Science, and Technical Subjects (6-12)

In the ELA & Literacy CCSS, the Anchor Standards and the Content Standards for each grade start with the same 42-point template (see below), which includes 10 Reading (literature) standards, 10 Reading (informational text) standards, 10 Writing standards, 6 Speaking and Listening standards, and 6 Language standards. Headings (e.g., Key Ideas and Details) are used to organize the standards in each strand.

Reading	Writing
Key Ideas & Details 1. 2. 3. **Craft & Structure** 4. 5. 6. **Integration of Knowledge & Ideas** 7. 8. 9. **Range of Reading & Level of Text Complexity** 10.	**Text Types & Purposes** 1. 2. 3. **Production & Distribution of Writing** 4. 5. 6. **Research to Build & Present Knowledge** 7. 8. 9. **Range of Writing** 10.
Speaking and Listening	**Language**
Comprehension & Collaboration 1. 2. 3. **Presentation of Knowledge & Ideas** 4. 5. 6.	**Conventions of Standard English** 1. 2. **Knowledge of Language** 3. **Vocabulary Acquisition & Use** 4. 5. 6.

Marcelletti & Saunders (2012, p. 12). Reproduced with permission. Note: This figure shows only 10 standards for Reading although there are actually 10 for Reading: Literature and 10 for Reading: Informational Text.

This uniform structure is augmented differentially for grades K-5 and 6-12:

- For grades K-5, an additional set of reading standards for Foundational Skills is included.
- For grades 6-12, an additional set of reading standards for History/Social Studies is included.
- For grades 6-12, an additional set of reading standards for Science and Technical Subjects is included.
- For grades 6-12, an additional set of writing standards for History/Social Studies, Science, and Technical Subjects is included.

The uniform structure of the ELA & Literacy standards makes analysis of learning progressions relatively easy. A particular standard can be considered in terms of its evolution from grade to grade. For example, a second grade teacher might consider the first and third grade versions of a standard she is teaching to contextualize the learning of students in her class over time. A more extensive treatment of analysis of learning progressions is provided in a later section.

BECOMING FAMILIAR WITH THE ELA & LITERACY CCSS

This section details a process that teachers can use to help them understand what the new ELA standards entail.[6]

STEP 1

Understanding How the New ELA & Literacy CCSS are Different from Prior Standards

Instructions for Comparing Standards

1. Use your State's ELA & Literacy CCSS as the starting point. Pick a grade and a strand to review first (e.g., in 5th grade, begin with Reading).
2. Identify the strand in your State's old standards that corresponds with the strand in the new standards.
3. Place both sets of standards documents with the grade level strand you will be reviewing side-by-side so you can look at them simultaneously. It may be helpful to have a partner or small group to work with.
4. Color code and annotate each of the old and new standards in the strand you're reviewing to represent one of the four categories (described in detail on the following two pages) using a different color for each category. The categories are: Same, Similar but More Rigorous, New, and Removed.
5. Once you have finished coding the old and new standards, take some time to reflect on general trends that you noticed in each of the strands and the standards as a whole. Use Worksheet #3 provided in the Worksheet section to write down your reflections.

[6] The process to review the ELA & Literacy CCSS is adapted, with permission, from the Talking Teaching Network. Educators in California may want to use the Talking Teaching Network Study Guide, which has all the California Common Core ELA standards already coded. It is available from the their website.

Coding Categories

- **Same:** The new standard is the same or nearly identical to an old standard (choose one color to highlight all the standards that have a correlate in the new/old standards.) Also, write the strand initials and number of the related standard from the new/old version of standards in parenthesis after the text. See the example below:

1997 California Content Standards for ELA – READING	2010 California Common Core Content Standards for ELA – READING
5th grade: Literary Response and Analysis (LR) **3.1 Identify and analyze the characteristics of poetry, drama, fiction, and nonfiction and explain the appropriateness of the literary forms chosen by an author for a specific purpose.** (RL5)	5th grade: Reading Standards for Literature (RL) **5. Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem.** (LR 3.1)

- **Similar but More Rigorous:** The new standard is similar to an old standard, but the new standard is more rigorous. Color code all the new/old standards that have this type of relationship in the same color. Add the strand initials and number from the matching standard(s) in the parentheses after the corresponding standard's text while also adding the word "Rigor" after the number. You can also underline the section of the new standard that is more rigorous than the old one. See the example below:

1997 California Content Standards for ELA – WRITING	2010 California Common Core Content Standards for ELA – WRITING
2nd grade: Writing Applications (Genres and their Characteristics (WA) **2.1 Write brief narratives based on their experience:** (W3 Rigor) **a. Move through a logical sequence of events.** (W3 Rigor) **b. Describe the setting, characters, objects, and events in detail.** (W3 Rigor)	2nd grade: Writing Standards (W) **3. Write narratives in which they recount a well-elaborated event or short sequence of events, including details to describe actions, thoughts, and feelings, use temporal words to signal event order, and provide a sense of closure.** (WA 2.1, 2.1a, 2.1b Rigor)

- **New:** The new standard has no corresponding standard in the old standards. These new standards can be color coded separately from the others with the phrase "CCSS 2010" in parenthesis after the standard's text. This indicates a new area for instructional focus. See the example below:

1997 California Content Standards for ELA – LANGUAGE 7th grade	2010 California Common Core Content Standards for ELA – LANGUAGE 7th grade Language Standards **1.a Explain the function of phrases and clauses in general and their function in specific sentences.** (CCSS 2010)

- **Removed:** An old standard has no corresponding standard in the new standards. These old standards can be color coded separately from the others and the phrase "Removed" included in parenthesis after the standard's text. See example below:

1997 California Content Standards for ELA – LISTENING AND SPEAKING 11th and 12th grades: Listening and Speaking Strategies (LS) **1.6 Use logical, ethical, and emotional appeals that enhance a specific tone and purpose.** (Removed)	2010 California Common Core Content Standards for ELA – LISTENING AND SPEAKING 11th and 12th grades

FURTHER ANALYSES OF MATHEMATICS AND ELA & LITERACY CCSS FOR CURRICULUM

This section describes further analyses of the Mathematics and ELA & Literacy CCSS that will be useful to teachers to consider. The first set of analyses examines learning progressions of Mathematics and ELA & Literacy CCSS. The second set of analyses helps teachers think about the resources they currently have and the materials they will need in order to implement the CCSS in their classrooms.

DEVELOPING A GENERAL PICTURE:

How Skills and Understandings Develop Progressively Across Grade Levels[7]

Reviewing the standards across grade levels (e.g., from K-12) can help teachers gain a broader sense of the progression of learning that occurs as students become more sophisticated in their understanding of a particular concept or skill described in a standard.

Instructions for Learning Progression Analysis

1. Access one of the learning progression documents described below, or if needed, create one of your own.
2. Examine the standards for your subject area and grade level, as well as the related standards a few grades above and a few below your own. Notice how the knowledge and skills develop progressively from standard to standard across grades.
3. If you do this work with a partner or part of a larger group (e.g., teachers in grade level bands), you can jigsaw the work, with each pair studying a few standards and their progression and then sharing what they learn with others.
4. Use Worksheet #4 in the Worksheet section of this document to summarize the gist of the standards and the nature of their progression.

On the next page is an example of the Reading CCSS organized as a grade level progression. The complete set of progressions for California's Common Core ELA standards is available as a free download on the Talking Teaching Network.[8] Additionally, the Battelle for Kids organization has CCSS progressions available on their websites in both ELA and Mathematics, and the Institute for Mathematics and Education has progressions available in Mathematics.[9]

[7] The following steps are the same processes for analyzing both the Mathematics and ELA & Literacy CCSS.
[8] http://talkingteaching.org/docs/CC_ELA_Step_Ladder_Download_030513bs.pdf
[9] http://www.battelleforkids.org/store and http://ime.math.arizona.edu/progressions/

Grade	#	K-12 Reading Standards for Literature	K-12 Reading Standards for Informational Text
11-12	1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.
9-10	1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
8	1	Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.	Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
7	1	Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
6	1	Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
5	1	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
4	1	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
3	1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
2	1	Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.	Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
1	1	Ask and answer questions about key details in a text.	Ask and answer questions about key details in a text.
K	1	With prompting and support, ask and answer questions about key details in a text.	With prompting and support, ask and answer questions about key details in a text.

Marcelletti & Saunders (2012, p. 116). Reproduced with permission.

BEYOND GETTING A HANDLE ON THE STANDARDS

After examining the new Mathematics and ELA & Literacy CCSS in depth, an important next step in thinking about the CCSS is to determine what existing resources are currently available for providing instruction in each of the standards.

Follow the step-by-step directions below to complete this task.

Instructions for Implication Coding

1. To begin the process, review (on your own or with a partner) each of your grade level standards in turn and ask yourself: (1) Is this something I already teach and have all the materials for? (2) Is it something I partially teach and need to develop further lessons around and collect supporting materials? (3) Is this brand new, and do I have to begin thinking about how to instruct students in the concept or skill for the first time?
2. As you review each standard, code it with one of the following four categories: Currently Covered, Needs Refinement, Needs Development, and Not Sure. Use the four acronyms described in the text box below for this purpose.
3. After you have finished coding, begin thinking about ways that you can adapt your current curriculum to provide instruction in each of the standards. This may include determining where you need to carve out more time to teach more rigorous concepts.
4. Finally, compile a list of additional resources you need to implement the new standards, including types of texts, lessons that need to be revised or planned, new materials, structural changes you want to make to your classroom practices, time to discuss implementation with your professional learning community, and any additional coaching or administrative support. Use Worksheets #5 and #6 to assist in your review.

Explanation of Implication Codes		
Codes		
CC	Currently Covered	This standard is being effectively addressed through our existing program and teaching.
NR	Needs Refinement	This standard will require refinement of our existing program and teaching in order to address it effectively.
ND	Needs Development	This standard will require development of materials and/or teaching methods in order to address it effectively.
??	Not Sure	Just not sure which code to use for this standard, and/or what this new standard actually means.

The CCSS address what students should learn, not how teachers should teach. Once teachers have completed the process outlined in this resource to understand the Mathematics and ELA & Literacy CCSS, they are ready to begin planning teaching and learning from the CCSS. The next resource in this series, *The Fundamentals of Learning,* presents a framework for conceptualizing the teaching and learning behaviors that will best facilitate the deep learning called for in the CCSS.

ADDITIONAL RESOURCES

The following resources[10] contain a variety of information to help in the process of further understanding and implementing the CCSS.

CCSSO RESOURCE PAGE: IMPLEMENTING THE COMMON CORE STANDARDS (ICCS)

http://www.ccsso.org/resources/programs/implementing_the_common_core_standards_(iccs).html

The Council of Chief State School Officers is a nonpartisan, nationwide, nonprofit organization of public officials who head departments of elementary and secondary education across the United States. To discuss and share concrete resources and strategies to meet the challenges and leverage the opportunities presented by Implementing the Common Core State Standards (ICCS), CCSSO convened a collaborative of interested states to work within state teams, across states, and with national experts. This web page has access to an online network of shared resources to help states implement and support the Standards.

INSTITUTE FOR MATHEMATICS AND EDUCATION, UNIVERSITY OF ARIZONA

http://ime.math.arizona.edu/progressions/

The Institute for Mathematics and Education supports local, national, and international projects in mathematics education that focus on both mathematics and students, which can be applied to current needs, build on existing knowledge, and are grounded in the work of educators. The Institute is currently involved in organizing and writing progression documents for the K–12 Common Core State Standards in Mathematics. The progressions can be found on the Institute's website.

STUDENT ACHIEVEMENT PARTNERS

http://www.achievethecore.org/

Founded by three of the contributing authors of the Common Core State Standards, Student Achievement Partners supports effective, innovative implementation of the Standards, with the goal of accelerating achievement for all students. The organization brings together educators and researchers to develop evidence-based practices and tools that are made openly available at no cost to states, districts, schools, and teachers, who are encouraged to take these resources and make them their own.

TALKING TEACHING NETWORK WEBSITE

http://talkingteaching.org/

Talking Teaching Network, a non-profit, public benefit corporation, is dedicated to the study and refinement of teaching and learning. This organization works with teachers to advance their professional knowledge and expertise by engaging in substantive study, discussion, and research. The current focus of the Talking Teaching Network includes analysis of the Common Core Standards in English Language Arts and Mathematics. Their goal is to help educators understand and address the reforms and mandates associated with the new Standards, as well as develop viable tools and practices they can effectively implement in their own curricula and programs.

[10] These descriptions are adapted from the organizations' website content.

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WORKSHEETS

The following worksheets, referenced in the previous sections, are provided to assist in the standards review.

WORKSHEET #1
Browsing the Mathematics CCSS

WORKSHEET #2
Interpreting the K-12 Standards for Mathematical Practice

WORKSHEET #3
Studying the Old and New Standards - ELA & Literacy

WORKSHEET #4
Studying the Learning Progressions of the Mathematics and ELA & Literacy CCSS

WORKSHEET #5
Note Taking Worksheet – Implication Coding

WORKSHEET #6
Implication Coding Worksheet - Identifying Needed Resources

WORKSHEET #1

Browsing the Mathematics CCSS

Marcelletti, McCarthy, & Saunders (2013, p. 159). Reproduced with permission.

Touring the Standards and Points of Interest: Observations?

Browsing Standards for a Particular Grade and/or Course: Observations?

WORKSHEET #2

Interpreting the K-12 Standards for Mathematical Practice

Marcelletti, McCarthy, & Saunders (2013, p. 159). Reproduced with permission.

Directions: Below are the short versions of the K-12 Standards for Mathematical Practice; a full description of each Standard for Mathematical Practice is located in the Mathematics CCSS document. The goal of this study task is, based on reading and discussion of the full descriptions, to put these Mathematical Practices into your own words in ways that best apply to the grade levels and mathematics you and your colleagues teach.

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. Looking for and make use of structure

8. Look for and express regularity in repeated reasoning

WORKSHEET #3

Studying the Old and New Standards - ELA & Literacy

Marcelletti & Saunders (2012, p. 18). Reproduced with permission.

Name(s): _____ **Grade:** _____

Directions: After you review and compare the old and new standards in each strand, synthesize what you observed so that you can communicate it to others. For each strand below, try to write 1 - 2 complete sentences responding to each of the following questions: What is the same? What is similar but more rigorous? What is new to the standards at this grade level?

Reading:
Writing:
Language:
Speaking and Listening:

WORKSHEET #4

Studying the Learning Progressions of the Mathematics and ELA & Literacy CCSS

Marcelletti & Saunders (2012, p. 19). Reproduced with permission.

Standard Group (e.g., domain, strand, cluster, heading): _____

Name(s): _____ **Grade:** _____

Directions: Use one of these worksheets for each major grouping of standards. You will need multiple copies of the worksheet. List the number of the standard, what the standard is mostly about, and how the standard progresses from grade level to grade level. Use as many rows as needed for the (domain, strand, cluster, or heading) you are writing about.

Standard #	Prompt 1: What is this standard mostly about?	Prompt 2: How does this standard progress from grade level to grade level?

Prompt 3: What are these standards mostly about?

WORKSHEET #5

Note Taking Worksheet – Implication Coding

Marcelletti & Saunders (2012, p. 115). Reproduced with permission.

Standard Group (e.g., domain, strand, cluster, heading): _____

Name(s): _____ **Grade:** _____

Directions: Use one of these worksheets for each major grouping of standards. You will need multiple copies of the worksheet. List the number of the standard, the implication code assigned to the standard, and notes that explain why you assigned that particular code to the standard. Use as many rows as needed for the group of standards you are coding. See page 21 for explanations of codes.

Standard #	Code	Notes

CC = Currently Covered	NR = Needs Refinement	ND = Needs Development	?? = Not Sure

WORKSHEET #6

Implication Coding Worksheet - Identifying Needed Resources

Created by CRESST, UCLA, 2013

Standard Group (e.g., domain, strand, cluster, heading):_____

Name(s): _____ **Grade:** _____

Directions: Choose a group of standards to work with. Then list the number of the standard, the curriculum materials you have available to provide instruction in that standard, the implication code you gave the standard, and what materials or other resources you still need to be able to teach the standard. See page 21 for further explanations of codes.

Standard	Existing Curriculum Material	Implication Code	What We Need

CC = Currently Covered	NR = Needs Refinement	ND = Needs Development	?? = Not Sure