

Indiana Transition to Common Core State Standards

Series One – Session III: Implications for Instruction and Classroom Assessment

Goals

- Review CCSS standards implemented in 2011-12 for ELA and Mathematics
- Update of Indiana Department of Education Transition Plan
- Discussion around Acuity

English Language Arts

- Learn to perform a close reading of the literacy standards to develop a clear understanding of the content and skills and embedded in the standards
- Discuss student behaviors associated with literacy standards at various grade levels
- Learn to integrate CCSS literacy requirements with the Indiana Academic Standards for English Language Arts
- Learn to appropriately integrate, instruct, and assess the recommended added CCSS English Language Arts standards for 2011-12

Mathematics

- Learn to perform a close reading of the Standards for Mathematical Practice to develop a clear understanding of the content and skills and embedded in the standards
- Discuss student behaviors associated with math practices at various grade levels
- Learn to integrate the Standards for Mathematical Practice into the Indiana Academic Standards for Mathematics
- Learn to appropriately integrate, instruct, and assess the recommended added CCSS math standards for 2011-12
- Learn to utilize a resource analysis tool to gauge degree of alignment of local resources to teach CCSS

Aligning Classroom Assessments to CCSS Requirements

- Aligning Skills to Learning Target Categories
- Establishing Levels of Rigor (Surveys of Enacted Curriculum)

PARCC Update

- Provide any updates to the PARCC assessment

Action Planning

- Discuss district and building-level next steps in CCSS implementation
- Plan for next CCSS PD Sessions in Mathematics and English Language Arts

HOW TO DO A CLOSE READING

The skill called "close reading" is fundamental for interpreting text. "Reading closely" means developing a deep understanding and a precise interpretation of a literary passage that is based first and foremost on the words themselves. But a close reading does not stop there; rather, it embraces larger themes and ideas evoked and/or implied by the passage itself. It is essential that we distinguish between doing a close reading and writing one. Doing a close reading involves a thought process that moves from small details to larger issues. Writing a close reading begins with these larger issues and uses the relevant details as evidence.

Description from The Content Frameworks

Close, analytic reading stresses engaging with a text of sufficient complexity directly and examining its meaning thoroughly and methodically, encouraging students to read and reread deliberately. Directing student attention on the text itself empowers students to understand the central ideas and key supporting details. It also enables students to reflect on the meanings of individual words and sentences; the order in which sentences unfold; and the development of ideas over the course of the text, which ultimately leads students to arrive at an understanding of the text as a whole. Close, analytic reading entails the careful gathering of observations about a text and careful consideration about what those observations taken together add up to — from the smallest linguistic matters to larger issues of overall understanding and judgment.

READING: GRADES 3 - 5			
Central Ideas	GRADE 3	GRADE 4	GRADE 5
	(3.RI.1, 3.RL.1) Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	(4.RI.1, 4.RL.1) Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.	(5.RI.1, 5.RL.1) Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
	(3.RI.10) By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2-3 text complexity band independently and proficiently.	(4.RI.10) By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.	(5.RI.10) By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts at the high end of the grades 4-5 text complexity band independently and proficiently
	(3.RL.10) By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 2-3 text complexity band independently and proficiently.	(4.RL.10) By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.	(5.RL.10) By the end of the year, read and comprehend literature, including stories, dramas, and poetry at the high end of the grades 4-5 text complexity band, independently and proficiently.

READING: GRADES 6 – 8			
Central Ideas	GRADE 6	GRADE 7	GRADE 8
	(6.RI.1, 6.RL.1) Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	(7.RI.1, 7.RL.1) Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	(8.RI.1, 8.RL.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.
	(6.RI.10) By the end of the year, read and comprehend literary nonfiction in grades 6-8 text complexity band proficiently, with scaffolding as needed at the high end of the range	(7.RI.10) By the end of the year, read and comprehend literary nonfiction in grades 6-8 text complexity band proficiently, with scaffolding as needed at the high end of the range.	(8.RI.10) By the end of the year, read and comprehend literary nonfiction at the high end of the grades 6-8 text complexity band independently and proficiently
	(6.RL.10) By the end of the year, read and comprehend literature, including stories, dramas, and poems, in the grades 6-8 text complexity band proficiently, with scaffolding as needed at the high end of the range.	(7.RL.10) By the end of the year, read and comprehend literature, including stories, dramas, and poems, in the grades 6-8 text complexity band proficiently, with scaffolding as needed at the high end of the range.	(8.RL.10) By the end of the year, read and comprehend literature, including stories, dramas, and poems, at the high end of the grades 6-8 text complexity band independently and proficiently.

RESEACH: GRADES 3 – 5			
Central Ideas	GRADE 3	GRADE 4	GRADE 5
	(3.W.7) Conduct short research projects that build knowledge about a topic.	(4.W.7). Conduct short research projects that build knowledge through investigation of different aspects of a topic.	(5.W.7) Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.
	(3.W.8) Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.	(4.W.8) Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.	(5.W.8) Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.
		(4.W.9) Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grade 4 Reading standards to literature b. Apply grade 4 Reading standards to informational texts.	(5.W.9) Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grade 5 Reading standards to literature. b. Apply grade 5 Reading standards to informational texts.

RESEARCH: GRADES 6 - 8			
Central Ideas	GRADE 6	GRADE 7	GRADE 8
	(6.W.7) Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.	(7.W.7) Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions to further research and investigation.	(8.W.7) Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
	(6.W.8) Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.	(7.W.8) Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.	(8.W.8) Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
	(6.W.9) Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grade 6 Reading standards to literature. b. Apply grade 6 Reading standards to literary nonfiction.	(7.W.9) Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grade 7 Reading standards to literature. b. Apply grade 7 Reading standards to literary.	(8.W.9) Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grade 8 Reading standards to literature. b. Apply grade 8 Reading standards to literary nonfiction.

INTRODUCTION TO THE PARCC MODEL CONTENT FRAMEWORKS FOR ENGLISH LANGUAGE ARTS (ELA)/LITERACY

Connections to the PARCC Assessment

The proposed PARCC Assessment System will be designed to measure knowledge, skills and understandings essential to achieving college and career readiness. In ELA/Literacy, these include the following areas as defined by the standards:

- **Reading complex texts:** This requires students to read and comprehend a range of grade-level complex texts, including texts from the domains of ELA, science, history/social studies, technical subjects and the arts. Because vocabulary is a critical component of reading comprehension, it will be assessed in the context of reading passages. Both close, analytic reading and comparing and synthesizing ideas across texts are expected.
- **Writing effectively when using and/or analyzing sources:** This requires students to demonstrate the interrelated literacy activities of reading, gathering evidence about what is read, and analyzing and presenting that evidence in writing.
- **Conducting and reporting on research:** This expands on “writing when analyzing sources” to require students to demonstrate their ability to gather resources, evaluate their relevance, and report on information and ideas they have investigated (i.e., conducting research to answer questions or to solve problems).
- **Speaking and listening:** This requires students to demonstrate a range of interactive oral communication and interpersonal skills, including (but not limited to) skills necessary for making formal presentations, working collaboratively, sharing findings and listening carefully to the ideas of others.
- **Language use for reading, writing and speaking:** This requires students to have a strong command of grammar and spoken and written academic English.

The importance of these skills is reflected in the emphasis the Model Content Frameworks place on students’ needing regular opportunities to grapple with the close, analytic reading of grade-level complex texts and to construct increasingly sophisticated responses in writing. The Model Content Frameworks therefore provide a helpful guide in preparing students for the future PARCC assessments.

Connections to the PARCC Assessment Worksheet

Conduct a close reading of the various sections of the Content Frameworks and respond to the questions and comments

Directions:

- A. *Circle the statement you have selected for this activity.*
- B. *Summarize in one to three words the essential meaning of the section*
- C. *Describe possible implications for teaching and assessment*

Connections to the PARCC Assessment

- 1. Reading complex texts:
- 2. Writing effectively when using and/or analyzing sources:
- 3. Conducting and reporting on research:
- 4. Speaking and listening:
- 5. Language use for reading, writing and speaking:

Summary of statement:	Implications for instruction and assessment:
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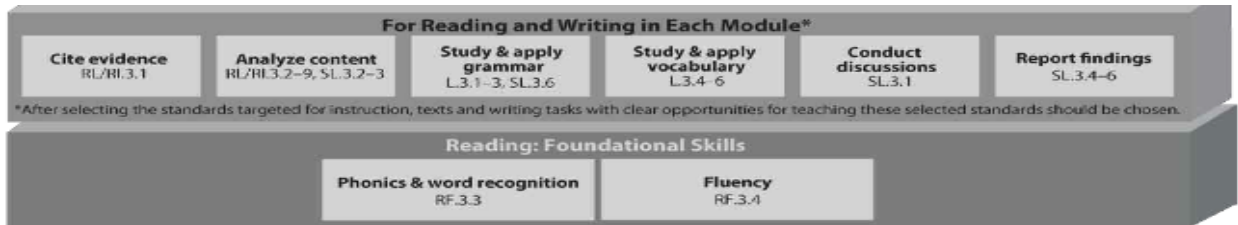
Sample Model Content Framework Chart

		Reading Complex Texts RL/RI.9.10		Writing About Texts W.9.1-2, 4-6, 9-10		Research Project W.9.7-9, RL/RI.9.1-10	Narrative Writing W.9.3-6, 10
		3-5 Short Texts	1 Extended Text	Routine Writing	4-6 Analyses	1 Research Project	1 Narrative
Modules	A	World literature: 2-3 Informational texts: 1-2	World literature	Develop & convey understanding	Focus on arguments	Integrate knowledge from sources when composing	Convey experiences
	B	Literature: 2-3 U.S. historical documents: 1-2	Informational	Develop & convey understanding	Focus on inform & explain	Integrate knowledge from sources when composing	Convey experiences
	C	World literature: 2-3 Informational texts: 1-2	World literature	Develop & convey understanding	Focus on inform & explain	Integrate knowledge from sources when composing	Convey experiences
	D	Literature: 2-3 U.S. historical documents: 1-2	Informational	Develop & convey understanding	Focus on arguments	Integrate knowledge from sources when composing	Convey experiences
For Reading and Writing in Each Module*							
		Cite evidence RL/RI.9.1	Analyze content RL/RI.9.2-9, SL.9.2-3	Study & apply grammar L.9.1-3, SL.9.6	Study & apply vocabulary L.9.4-6	Conduct discussions SL.9.1	Report findings SL.9.4-6

*After selecting the standards targeted for instruction, texts and writing tasks with clear opportunities for teaching these selected standards should be chosen.

Third Grade Content Frameworks

Module	Months	Comprehension Strategy	Text Length (5-9 short texts and 1 extended text per quarter)	Writing about Text (2 per quarter)	Extended Writing (1 research and 1-2 narratives)
A	Aug/Sept	Making Connections/Monitor for Meaning	Extended Literature/Short Texts	Application of comprehension strategies	Narratives
	Sept/Oct	Questioning	Short Texts	Focus on Opinion	Research
B	October	Sensory Images	Extended Informational/Short Texts	Focus on Inform/ Explain	Research
	Nov/Dec	Inferences	Short Texts	Application of Reading Analysis Strategies	Narrative
C	January	Inferences	Extended Literature/Short Texts	Focus on Inform/ Explain	Narrative
	February	Determining Importance	Short Texts	Application of Reading Analysis Strategies	Research
D	March/April	Determining Importance and Summarizing	Short Texts	Application of Reading Analysis Strategies	Research
	May/June	Summarizing (non fiction) and Synthesizing	Extended Informational/Short Texts	Focus on Opinions	Narrative



Literary Genres: Fables, Folktales, Culturally Diverse Myths, Narratives, Songs, Drama, Poems
Informational Genres: Historic nonfiction, Science nonfiction, Technical writing, Graphics/Maps
Types of Extended Writing: Descriptive, Narrative, Personal Narrative, Persuasive/Opinion, Informative/Explanatory, Short Research Projects

Section 3: Key Terms and Concepts for the Model Content Framework Chart

This section explains the elements that appear within the Model Content Framework Chart. As noted above, these elements not only play a key role within the standards but also reflect critical emphases that will be addressed within the PARCC Assessment System.

Reading complex texts: The Model Content Frameworks highlight the importance of focusing on the close, sustained analysis of complex text. A significant body of research links the close reading of complex text — whether the student is a struggling reader or advanced — to significant gains in reading proficiency and finds close reading to be a key component of college and career readiness.

Close, analytic reading stresses engaging with a text of sufficient complexity directly and examining its meaning thoroughly and methodically, encouraging students to read and reread deliberately. Directing student attention on the text itself empowers students to understand the central ideas and key supporting details. It also enables students to reflect on the meanings of individual words and sentences; the order in which sentences unfold; and the development of ideas over the course of the text, which ultimately leads students to arrive at an understanding of the text as a whole. Close, analytic reading entails the careful gathering of observations about a text and careful consideration about what those observations taken together add up to — from the smallest linguistic matters to larger issues of overall understanding and judgment.

Reading complex text also encompasses the productive comparison and synthesis of ideas. Readers use the meaning developed through the analysis of particular words, phrases, sentences and paragraphs to elaborate on the connections among ideas across multiple texts. Once each source is read and understood, students can give attention to integrating what they have recently read with readings they have previously encountered and knowledge they have previously acquired. By drawing on relevant prior knowledge, students can make comparisons between what they have just read to previous learning and assess how the text expands or challenges that knowledge. Comparison and synthesis of ideas across multiple texts allow students to thoroughly demonstrate reading comprehension as defined by the entirety of the reading standards. This type of reading is also essential when conducting research, when students build and present knowledge through integration, comparison and synthesis of ideas.

Each module in the Model Content Frameworks suggests that educators select a minimum number of grade-level-appropriate short texts of sufficient complexity for close, analytic reading as well as one extended text.⁶ While short texts might include a poem, short story or magazine article, extended texts would include novels or book-length informational texts, a magazine with a series of related articles or stories, or even a website with multiple related pages of grade-level complex text to navigate. Choosing short texts that complement the extended text will create coherence in a module.

In lower grades, texts should include content from across the disciplines. In upper grades, other content-area teachers are encouraged to consider how best to implement reading across the disciplines while retaining the appropriate mix of literary and informational texts appropriate to the grade level.⁷ To become career and college ready, students must have access to and grapple with works of exceptional content and craft that span many genres, cultures and eras both for the insights they offer and as models for students' own thinking and writing.⁸ Texts should be selected from among the best contemporary fiction and nonfiction and from a diverse range of authors and perspectives. These texts should also include classic works that have broad resonance and are alluded to and quoted often, such as foundational literary works, influential political documents, and seminal historical and scientific texts. These complex texts should allow students to draw ample evidence from them and present their analyses in writing and speaking. The texts should also vary in type (including new media texts), length and density, requiring students to slow down or read more quickly depending on their purpose for reading. Not only do students need to be able to read closely, but also they need to be able to read larger volumes of text when necessary for research or other purposes.

In addition, all students need access to a wide range of materials on a variety of topics and genres in order to develop their knowledge and joy of reading. Students' classrooms and school libraries need to provide this wide array of texts to ensure that students have opportunities to independently read texts of their own choosing during and outside of the school day. Independent reading should include texts at a student's independent reading level and texts with complexity levels that are challenging and motivating.

Writing about texts: The Model Content Frameworks reflect the emphasis found in the Writing Standards that students must develop the ability to write effectively and proficiently. While narrative writing is given prominence in early grades, as the grade level increases, the standards (and the Model Content Frameworks) shift the focus to writing arguments or informational pieces that analyze sources (including writing about research students have performed). Studies show that learning to present important information in an organized piece of writing helps students generate a deeper understanding of a text. Indeed, whether taking notes or answering questions about a text, or crafting a summary or an extended response regarding what they have read, students improve both their reading comprehension and their writing skills when writing in response to texts.⁹ Thus, each module includes routine writing in response to prompts designed to answer questions and even to brainstorm ideas — the type of writing critical for improving reading comprehension as well as for building writing skills. This writing can take the form of notes, summaries, learning logs, writing to learn tasks, or even a response to a short text selection or an open-ended question.

In addition, each grade-level framework addresses more formal, structured analytic writing that either advances an argument or explains an idea. The Model Content Frameworks are organized with the expectation that students will respond to high-quality, text-dependent prompts about what they have read by framing a debate or informing the reader about what they have learned through writing. Rigorous, text-dependent questions require students to demonstrate that they can follow the details of what is explicitly stated and make valid claims and inferences that square with the evidence in the text. These responses can vary in length based on the questions asked and tasks performed, from answering brief questions to crafting multiparagraph responses in upper grades.

Just as the standards suggest, this should include writing under time constraints as well as engaging in longer writing projects that last several days (including possibly requiring students to make revisions to strengthen a piece of writing over multiple drafts). As a result, this array of writing tasks will prepare students for critical college- and career-readiness skills: presenting credible evidence from texts, crafting coherent and well-developed prose, and writing clearly with sufficient command of academic English.

Research project: The Model Content Frameworks give special prominence to research tasks, reflecting the deep connection research has to building and integrating knowledge while developing expertise on various topics. When possible, research should connect to texts selected for close readings, requiring students to closely read and compare and synthesize ideas across multiple texts. Through a progression of research tasks, students are called on to present their findings in a variety of modes in informal and formal contexts appropriate to the grade level (e.g., through oral presentations, argumentative or explanatory compositions, or multimedia products).

Narrative writing: In addition to the analytic and explanatory writing expected of students, the standards also reflect the need for students to write narratives. From the importance of organization to the nuance of word choice, shaping narratives that reflect real or imagined experiences or events reinforces what students are learning elsewhere. Narratives also provide an additional opportunity for students to reflect on and to emulate what they have read through imaginative writing. The close attention to detail required by students to craft an effective and coherent narrative calls on a skill set similar to that being developed by other writing tasks. As students mature as writers, their skill with narrative techniques also advances their analytic and explanatory prose. To tell an interesting story effectively or to provide an accurate account of a historical incident requires students to present vivid, relevant details to situate events in a time and place and also to craft a structure that lends a larger shape and significance to those details. As an easily grasped and widely used way to share

information and ideas with others, narrative writing is a principal ingredient in writing forms directly relevant to college and career readiness.

For reading and writing in each module: Lastly, each module includes an explanation of the knowledge and skills that may be integrated with all standards, from citing evidence and analyzing content to applying grammar correctly. This section of the chart emphasizes the critical role of building content knowledge by learning and using new vocabulary, engaging in focused formal and informal discussions, and reporting findings in multiple formats. As demonstrated in the standards, each of these skills is an essential element when reading and writing about texts. (In addition for grades 3–5, students acquire and develop foundational reading skills throughout the academic year.)

Cite evidence and analyze content: The reading and writing standards highlighted within the Model Content Frameworks stress that students learn to draw sufficient evidence from a range of different types of complex text from across the disciplines. For example, depending on the text, students may be asked to determine the main idea, the point of view and even the meaning of words and phrases as part of gathering and analyzing evidence.

Understand and apply grammar: The Model Content Frameworks reflect the standards’ expectation that students will gain a strong command of the grammar and usage of spoken and written academic English through extensive practice, which is needed to be college and career ready. The Model Content Frameworks call for students to be able to discern the difference between a formal and an informal speaking occasion and use appropriate diction and tone.

Understand and apply vocabulary: Encouraged in the Model Content Frameworks is a systematic approach to teaching academic vocabulary in context, giving students a sense of the connections and patterns in language and providing them with opportunities to acquire word meanings through reading and listening as well as through writing and speaking. By focusing on academic vocabulary, or Tier 2 words, students will build fluency, improve reading comprehension and be more prepared to access a wide range of complex texts.¹⁴ Students will learn to pay attention to the impact of specific word choices when reading and choose words deliberately to shape their own writing and speaking.

Conduct discussions and report findings: Besides having intrinsic value as modes of communication, listening and speaking are necessary prerequisites of reading and writing well, and research shows that oral language competence is strongly predictive of the ease with which students learn to read and write. The Model Content Frameworks reinforce habits of mind that aid in the mastery of the printed word and directly target speaking and listening skills in a purposeful and systematic way. They direct students to learn how to participate effectively in real, substantive discussions around text-related topics and issues to provide them with opportunities to build confidence and extend knowledge regarding a text by connecting their ideas with those of others through reporting their findings.

Foundational reading skills: In addition to the knowledge and skills noted above, based on a substantial body of research, the Model Content Frameworks address the standards’ expectation that students in grades 3–5 acquire and develop an understanding of phonics and word analysis skills and build their fluency through independent reading and opportunities to analyze closely how the syntax and meaning of the text influence expression and phrasing.

Key Terms and Concepts for the Model Content Framework Chart Worksheet

- A. *Read ONE of the section explanations*
- B. *Circle the section you selected*
- C. *Summarize the essential meanings of the section*
- D. *Describe implications for teachers and students*

Key Terms and Concepts

1. Reading complex texts
2. Writing about texts
3. Research project
4. Narrative writing
5. For reading and writing in each module
6. Foundational reading skills

Summary Statement:

Implications for teachers and students:



TEXT COMPLEXITY: QUALITATIVE MEASURES RUBRIC INFORMATIONAL TEXTS



LEVELS OF PURPOSE			
<p>High</p> <p><input type="checkbox"/> Purpose: subtle, implied, difficult to determine</p>	<p>Middle High</p> <p><input type="checkbox"/> Purpose: implied, but fairly easy to infer</p>	<p>Middle Low</p> <p><input type="checkbox"/> Purpose: implied, but easy to identify based upon context or source</p>	<p>Low</p> <p><input type="checkbox"/> Purpose: explicitly stated</p>
STRUCTURE			
<p>High</p> <p><input type="checkbox"/> Organization of Main Ideas and Details: highly complex; not explicit, must be inferred by the reader</p> <p><input type="checkbox"/> Text Features: if used, are essential in understanding content</p> <p><input type="checkbox"/> Use of Graphics: sophisticated graphics, essential to understanding the text, may also provide information not otherwise conveyed in the text</p>	<p>Middle High</p> <p><input type="checkbox"/> Organization of Main Ideas and Details: complex but largely explicit; may exhibit traits common to a specific subject or discipline</p> <p><input type="checkbox"/> Text Features: if used, greatly enhance the reader's understanding of content</p> <p><input type="checkbox"/> Use of Graphics: some sophisticated graphics, may occasionally be essential to understanding the text</p>	<p>Middle Low</p> <p><input type="checkbox"/> Organization of Main Ideas and Details: may be complex, but clearly stated and generally sequential</p> <p><input type="checkbox"/> Text Features: if used, enhance the reader's understanding of content</p> <p><input type="checkbox"/> Use of Graphics: largely simple graphics, supplementary to understanding of the text</p>	<p>Low</p> <p><input type="checkbox"/> Organization of Main Ideas and Details: clearly stated and sequential</p> <p><input type="checkbox"/> Text Features: if used, help the reader navigate and understand content but are not essential</p> <p><input type="checkbox"/> Use of Graphics: use of simple graphics, unnecessary to understand the text</p>
LANGUAGE CONVENTIONALITY AND CLARITY			
<p>High</p> <p><input type="checkbox"/> Meaning: dense and complex; may be abstract, ironic, and/or figurative; language may be purposefully ambiguous or misleading</p> <p><input type="checkbox"/> Register: generally unfamiliar, archaic, subject-specific, or overly academic</p>	<p>Middle High</p> <p><input type="checkbox"/> Meaning: somewhat complex; may occasionally be abstract, ironic, and/or figurative</p> <p><input type="checkbox"/> Register: occasionally unfamiliar, archaic, subject-specific, or overly academic</p>	<p>Middle Low</p> <p><input type="checkbox"/> Meaning: largely explicit and easy to understand with few occasions of more complex meaning</p> <p><input type="checkbox"/> Register: largely contemporary, familiar, conversational; rarely unfamiliar, archaic, subject-specific, or overly academic</p>	<p>Low</p> <p><input type="checkbox"/> Meaning: explicit, literal, straightforward, easy to understand</p> <p><input type="checkbox"/> Register: contemporary, familiar, conversational</p>
KNOWLEDGE DEMANDS			
<p>High</p> <p><input type="checkbox"/> Subject Matter Knowledge: requires extensive, perhaps specialized or even theoretical subject-specific knowledge</p> <p><input type="checkbox"/> Intertextuality: many references/allusions to other texts</p>	<p>Middle High</p> <p><input type="checkbox"/> Subject Matter Knowledge: requires moderate levels of subject-specific knowledge; some theoretical knowledge may enhance understanding</p> <p><input type="checkbox"/> Intertextuality: some references/allusions to other texts</p>	<p>Middle Low</p> <p><input type="checkbox"/> Subject Matter Knowledge: largely everyday, practical knowledge is necessary; requires some subject-specific knowledge</p> <p><input type="checkbox"/> Intertextuality: few references/allusions to other texts</p>	<p>Low</p> <p><input type="checkbox"/> Subject Matter Knowledge: requires only everyday, practical knowledge</p> <p><input type="checkbox"/> Intertextuality: no references/allusions to other texts</p>



TEXT COMPLEXITY: QUALITATIVE MEASURES RUBRIC
LITERARY TEXTS



LEVELS OF MEANING

High	Middle High	Middle Low	Low
<input type="checkbox"/> Multiple Levels of Complex Meaning	<input type="checkbox"/> Multiple Levels of Meaning	<input type="checkbox"/> Single Level of Complex Meaning	<input type="checkbox"/> Single Level of Simple Meaning

STRUCTURE

High	Middle High	Middle Low	Low
<input type="checkbox"/> Narrative Structure: complex, implicit, and unconventional <input type="checkbox"/> Narration: many shifts in point of view <input type="checkbox"/> Order of Events: not in chronological order <input type="checkbox"/> Use of Graphics: sophisticated graphics, essential to understanding the text, may also provide information not otherwise conveyed in the text	<input type="checkbox"/> Narrative Structure: some complexities, more implicit than explicit, some unconventionality <input type="checkbox"/> Narration: occasional shifts in point of view <input type="checkbox"/> Order of Events: several major shifts in time, use of flashback <input type="checkbox"/> Use of Graphics: some sophisticated graphics, may occasionally be essential to understanding the text	<input type="checkbox"/> Narrative Structure: largely simple structure, more explicit than implicit, largely conventional, <input type="checkbox"/> Narration: few, if any, shifts in point of view <input type="checkbox"/> Order of Events: occasional use of flashback, no major shifts in time <input type="checkbox"/> Use of Graphics: largely simple graphics, supplementary to understanding of the text	<input type="checkbox"/> Narrative Structure: simple, explicit, conventional, no shifts in point of view <input type="checkbox"/> Narration: no shifts in point of view <input type="checkbox"/> Order of Events: chronological <input type="checkbox"/> Use of Graphics: use of simple graphics, unnecessary to understand the text

LANGUAGE CONVENTIONALITY AND CLARITY

High	Middle High	Middle Low	Low
<input type="checkbox"/> Meaning: implicit or inferred meaning, heavy use of figurative or ironic language, may be purposefully ambiguous or misleading at times <input type="checkbox"/> Register: generally unfamiliar, archaic, domain-specific, or overly academic	<input type="checkbox"/> Meaning: some implicit or inferred meaning, use of figurative or ironic language <input type="checkbox"/> Register: occasionally unfamiliar, archaic, domain-specific, or overly academic	<input type="checkbox"/> Meaning: largely explicit and literal meaning, subtle use of figurative or ironic language <input type="checkbox"/> Register: largely contemporary, familiar, conversational, rarely unfamiliar, archaic, domain-specific, or overly academic	<input type="checkbox"/> Meaning: explicit and literal meaning, little or no use of figurative or ironic language <input type="checkbox"/> Register: contemporary, familiar, conversational

KNOWLEDGE DEMANDS

High	Middle High	Middle Low	Low
<input type="checkbox"/> Life Experiences: explores complex, sophisticated, multiple themes; experiences portrayed are not fantasy but are distinctly different from the common reader <input type="checkbox"/> Cultural/Literary Knowledge: many references/allusions to other texts (<i>intertextuality</i>) and cultural elements <input type="checkbox"/> Subject Matter Knowledge: requires extensive, perhaps specialized content knowledge	<input type="checkbox"/> Life Experiences: explores multiple themes of varying levels of complexity; experiences portrayed are not fantasy but are uncommon to most readers <input type="checkbox"/> Cultural/Literary Knowledge: some references/allusions to other texts (<i>intertextuality</i>) and cultural elements <input type="checkbox"/> Subject Matter Knowledge: requires moderate levels of content knowledge	<input type="checkbox"/> Life Experiences: explores a single complex theme; experiences portrayed are common to many readers or are clearly fantasy <input type="checkbox"/> Cultural/Literary Knowledge: few references/allusions to other texts (<i>intertextuality</i>) and cultural elements <input type="checkbox"/> Subject Matter Knowledge: requires some content knowledge	<input type="checkbox"/> Life Experiences: explores a single theme; experiences portrayed are everyday and common or are clearly fantasy <input type="checkbox"/> Cultural/Literary Knowledge: no references/allusions to other texts (<i>intertextuality</i>) and cultural elements <input type="checkbox"/> Subject Matter Knowledge: requires only everyday content knowledge

Standards for Mathematical Practices

Mathematical Practice	Explanations and Examples
1. Make sense of problems and persevere in solving them.	Mathematically proficient students in grade 5 should solve problems by applying their understanding of operations with whole numbers, decimals, and fractions including mixed numbers. They solve problems related to volume and measurement conversions. Students seek the meaning of a problem and look for efficient ways to represent and solve it. They may check their thinking by asking themselves, “What is the most efficient way to solve the problem?”, “Does this make sense?”, and “Can I solve the problem in a different way?”.
2. Reason abstractly and quantitatively.	Mathematically proficient students in grade 5 should recognize that a number represents a specific quantity. They connect quantities to written symbols and create a logical representation of the problem at hand, considering both the appropriate units involved and the meaning of quantities. They extend this understanding from whole numbers to their work with fractions and decimals. Students write simple expressions that record calculations with numbers and represent or round numbers using place value concepts.
3. Construct viable arguments and critique the reasoning of others.	In fifth grade mathematically proficient students may construct arguments using concrete referents, such as objects, pictures, and drawings. They explain calculations based upon models and properties of operations and rules that generate patterns. They demonstrate and explain the relationship between volume and multiplication. They refine their mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” and “Why is that true?” They explain their thinking to others and respond to others’ thinking.
4. Model with mathematics.	Mathematically proficient students in grade 5 experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, making a chart, list, or graph, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed. Fifth graders should evaluate their results in the context of the situation and whether the results make sense. They also evaluate the utility of models to determine which models are most useful and efficient to solve problems.
5. Use appropriate tools strategically.	Mathematically proficient fifth graders consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, they may use unit cubes to fill a rectangular prism and then use a ruler to measure the dimensions. They use graph paper to accurately create graphs and solve problems or make predictions from real world data.
6. Attend to precision.	Mathematically proficient students in grade 5 continue to refine their mathematical communication skills by using clear and precise language in their discussions with others and in their own reasoning. Students use appropriate terminology when referring to expressions, fractions, geometric figures, and coordinate grids. They are careful about specifying units of measure and state the meaning of the symbols they choose. For instance, when figuring out the volume of a rectangular prism they record their answers in cubic units.
7. Look for and make use of structure.	In fifth grade mathematically proficient students look closely to discover a pattern or structure. For instance, students use properties of operations as strategies to add, subtract, multiply and divide with whole numbers, fractions, and decimals. They examine numerical patterns and relate them to a rule or a graphical representation.
8. Look for and express regularity in repeated reasoning.	Mathematically proficient fifth graders use repeated reasoning to understand algorithms and make generalizations about patterns. Students connect place value and their prior work with operations to understand algorithms to fluently multiply multi-digit numbers and perform all operations with decimals to hundredths. Students explore operations with fractions with visual models and begin to formulate generalizations.

Implementing the Standards for Mathematical Practice

- Standards for mathematical practice are not taught in isolation but rather as habits of mind that are integrated into the instruction of the content standards. “The vehicle for engaging in the practices is the content.”
 - Thoughtful integration of the Standards for Mathematical Practice should be included during unit planning.
 - Plan units of instruction at the level of the *cluster*.
-

Grade 5 Example – Number and Operations in Base Ten (5.NBT)

(*Note: 5.NBT.1 and 5.NBT.3 should be instructed beginning the 2011-12 school year, per the IDOE Transition Plan)

Cluster: Understand the place value system.

- 1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.**
- 2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.**
- 3. Read, write, and compare decimals to thousandths.**
 - a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.**
 - b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.**
- 4. Use place value understanding to round decimals to any place.**

Determine the instructional priority of the cluster by utilizing the PARCC Model Content Framework:



Key: ■ Major Clusters; ■ Supporting Clusters; ● Additional Clusters

Operations and Algebraic Thinking

- Write and interpret numerical expressions.
- Analyze patterns and relationships.

Number and Operations in Base Ten

- Understand the place value system.
- Perform operations with multi-digit whole numbers and with decimals to hundredths.

Number and Operations — Fractions

- Use equivalent fractions as a strategy to add and subtract fractions.
- Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

Measurement and Data

- Convert like measurement units within a given measurement system.
- Represent and interpret data.
- Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

Geometry

- Graph points on the coordinate plane to solve real-world and mathematical problems.
- Classify two-dimensional figures into categories based on their properties.

Major clusters within a grade level require greater emphasis based on the depth of the ideas, the time they take to master, and/or their importance to future mathematics or the demands of college and career readiness.

Supporting clusters are not major emphases in themselves but are designed to support and strengthen areas of major emphasis. Teachers should consider this when planning the sequence of instruction.

Additional clusters may not connect tightly or explicitly to the major work of the grade; this does not imply that the content should be neglected. It is important to note that all clusters are eligible for the PARCC assessment.

Utilize the PARCC Model Content Framework to find additional information regarding connecting the Standards for Mathematical Practice to the Content Standards:



Examples of Opportunities for Connecting Mathematical Content and Mathematical Practices

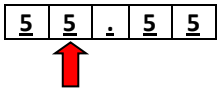
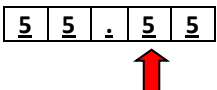
Mathematical practices should be evident *throughout* mathematics instruction and connected to all of the content areas highlighted above, as well as all other content areas addressed at this grade level. Mathematical tasks (short, long, scaffolded and unscaffolded) are an important opportunity to connect content and practices. Some brief examples of how the content of this grade might be connected to the practices follow.

- When students break divisors and dividends into sums of multiples of base-ten units (5.NBT.6), they are seeing and making use of structure (MP.7) and attending to precision (MP.6). Initially for most students, multidigit division problems take time and effort, so they also require perseverance (MP.1) and looking for and expressing regularity in repeated reasoning (MP.8).
- When students explain patterns in the number of zeros of the product when multiplying a number by powers of 10 (5.NBT.2), they have an opportunity to look for and express regularity in repeated reasoning (MP.8). When they use these patterns in division, they are making sense of problems (MP.1) and reasoning abstractly and quantitatively (MP.2).
- When students show that the volume of a right rectangular prism is the same as would be found by multiplying the side lengths (5.MD.5), they also have an opportunity to look for and express regularity in repeated reasoning (MP.8). They attend to precision (MP.6) as they use correct length or volume units, and they use appropriate tools strategically (MP.5) as they understand or make drawings to show these units.

Utilize resources to assist in planning instruction and identifying complementary Standards for Mathematical Practice:
 (*Note: Additional resources will be discussed and utilized in subsequent CCSS Mathematics discipline-specific sessions.)

Arizona Department of Education

<http://www.azed.gov/standards-practices/mathematics-standards/>

Number and Operations in Base Ten (NBT) CLUSTER: Understand the place value system.		
<u>Standards</u>	<u>Mathematical Practices</u>	<u>Explanations and Examples</u>
<p>5.NBT.1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left.</p> <p>Connections: 5.NBT.2; 5.RI.3; 5.W.2d</p>	<p>5.MP.2. Reason abstractly and quantitatively.</p> <p>5.MP.6. Attend to precision.</p> <p>5.MP.7. Look for and make use of structure.</p>	<p>In fourth grade, students examined the relationships of the digits in numbers for whole numbers only. This standard extends this understanding to the relationship of decimal fractions. Students use base ten blocks, pictures of base ten blocks, and interactive images of base ten blocks to manipulate and investigate the place value relationships. They use their understanding of unit fractions to compare decimal places and fractional language to describe those comparisons.</p> <p>Before considering the relationship of decimal fractions, students express their understanding that in multi-digit whole numbers, a digit in one place represents 10 times what it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left.</p> <p>A student thinks, "I know that in the number 5555, the 5 in the tens place (55<u>5</u>5) represents 50 and the 5 in the hundreds place (55<u>5</u>5) represents 500. So a 5 in the hundreds place is ten times as much as a 5 in the tens place or a 5 in the tens place is $\frac{1}{10}$ of the value of a 5 in the hundreds place.</p> <p>To extend this understanding of place value to their work with decimals, students use a model of one unit; they cut it into 10 equal pieces, shade in, or describe $\frac{1}{10}$ of that model using fractional language ("This is 1 out of 10 equal parts. So it is $\frac{1}{10}$". I can write this using $\frac{1}{10}$ or 0.1"). They repeat the process by finding $\frac{1}{10}$ of a $\frac{1}{10}$ (e.g., dividing $\frac{1}{10}$ into 10 equal parts to arrive at $\frac{1}{100}$ or 0.01) and can explain their reasoning, "0.01 is $\frac{1}{10}$ of $\frac{1}{10}$ thus is $\frac{1}{100}$ of the whole unit."</p> <p>In the number 55.55, each digit is 5, but the value of the digits is different because of the placement.</p> <div style="text-align: center;">  </div> <p>The 5 that the arrow points to is $\frac{1}{10}$ of the 5 to the left and 10 times the 5 to the right. The 5 in the ones place is $\frac{1}{10}$ of 50 and 10 times five tenths.</p> <div style="text-align: center;">  </div> <p>The 5 that the arrow points to is $\frac{1}{10}$ of the 5 to the left and 10 times the 5 to the right. The 5 in the tenths place is 10 times five hundredths.</p>

Number and Operations in Base Ten (NBT) CLUSTER: Understand the place value system.

<u>Standards</u>	<u>Mathematical Practices</u>	<u>Explanations and Examples</u>								
<p>5.NBT.3. Read, write, and compare decimals to thousandths.</p> <p>a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.</p> <p>b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.</p> <p>Connections: 5.RI.5; 5.SL.6</p>	<p>5.MP.2. Reason abstractly and quantitatively.</p> <p>5.MP.4. Model with mathematics.</p> <p>5.MP.5. Use appropriate tools strategically.</p> <p>5.MP.6. Attend to precision.</p> <p>5.MP.7. Look for and make use of structure.</p>	<p>Students build on the understanding they developed in fourth grade to read, write, and compare decimals to thousandths. They connect their prior experiences with using decimal notation for fractions and addition of fractions with denominators of 10 and 100. They use concrete models and number lines to extend this understanding to decimals to the thousandths. Models may include base ten blocks, place value charts, grids, pictures, drawings, manipulatives, technology-based, etc. They read decimals using fractional language and write decimals in fractional form, as well as in expanded notation as show in the standard 3a. This investigation leads them to understanding equivalence of decimals ($0.8 = 0.80 = 0.800$).</p> <p>Example: Some equivalent forms of 0.72 are:</p> <table style="margin-left: 20px;"> <tr> <td>$72/100$</td> <td>$70/100 + 2/100$</td> </tr> <tr> <td>$7/10 + 2/100$</td> <td>0.720</td> </tr> <tr> <td>$7 \times (1/10) + 2 \times (1/100)$</td> <td>$7 \times (1/10) + 2 \times (1/100) + 0 \times (1/1000)$</td> </tr> <tr> <td>$0.70 + 0.02$</td> <td>$720/1000$</td> </tr> </table> <p>Students need to understand the size of decimal numbers and relate them to common benchmarks such as 0, 0.5 (0.50 and 0.500), and 1. Comparing tenths to tenths, hundredths to hundredths, and thousandths to thousandths is simplified if students use their understanding of fractions to compare decimals.</p> <p>Example: Comparing 0.25 and 0.17, a student might think, “25 hundredths is more than 17 hundredths”. They may also think that it is 8 hundredths more. They may write this comparison as $0.25 > 0.17$ and recognize that $0.17 < 0.25$ is another way to express this comparison.</p> <p>Comparing 0.207 to 0.26, a student might think, “Both numbers have 2 tenths, so I need to compare the hundredths. The second number has 6 hundredths and the first number has no hundredths so the second number must be larger. Another student might think while writing fractions, “I know that 0.207 is 207 thousandths (and may write 207/1000). 0.26 is 26 hundredths (and may write 26/100) but I can also think of it as 260 thousandths (260/1000). So, 260 thousandths is more than 207 thousandths.</p>	$72/100$	$70/100 + 2/100$	$7/10 + 2/100$	0.720	$7 \times (1/10) + 2 \times (1/100)$	$7 \times (1/10) + 2 \times (1/100) + 0 \times (1/1000)$	$0.70 + 0.02$	$720/1000$
$72/100$	$70/100 + 2/100$									
$7/10 + 2/100$	0.720									
$7 \times (1/10) + 2 \times (1/100)$	$7 \times (1/10) + 2 \times (1/100) + 0 \times (1/1000)$									
$0.70 + 0.02$	$720/1000$									

Utilize tools such as the Mathematical Practices Checklist or the Common Core Look-Fors App to plan, observe, and evaluate instruction:

Mathematical Practices Checklist: A Planning and Observation Protocol

<i>Mathematical Practices</i>	Observations
<p>MP.1. Make sense of problems and persevere in solving them.</p>	<p><i>Students are expected to _____:</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Engage in solving problems. <input type="checkbox"/> Explain the meaning of a problem and restate in it their own words. <input type="checkbox"/> Analyze given information to develop possible strategies for solving the problem. <input type="checkbox"/> Identify and execute appropriate strategies to solve the problem. <input type="checkbox"/> Check their answers using a different method, and continually ask “Does this make sense?” <hr/> <p><i>Teachers are expected to _____:</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Provide time for students to discuss problem solving.
<p>MP.2. Reason abstractly and quantitatively.</p>	<p><i>Students are expected to _____:</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Connect quantity to numbers and symbols (decontextualize the problem) and create a logical representation of the problem at hand. <input type="checkbox"/> Recognize that a number represents a specific quantity (contextualize the problem). <input type="checkbox"/> Contextualize and decontextualize within the process of solving a problem. <hr/> <p><i>Teachers are expected to _____:</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Provide appropriate representations of problems.

<i>Mathematical Practices</i>	Observations
<p>MP.3. Construct viable arguments and critique the reasoning of others.</p>	<p><i>Students are expected to</i> _____:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Explain their thinking to others and respond to others' thinking. <input type="checkbox"/> Participate in mathematical discussions involving questions like “How did you get that?” and “Why is that true?” <input type="checkbox"/> Construct arguments that utilize prior learning. <input type="checkbox"/> Question and problem pose. <input type="checkbox"/> Practice questioning strategies used to generate information. <input type="checkbox"/> Analyze alternative approaches suggested by others and select better approaches. <input type="checkbox"/> Justify conclusions, communicate them to others, and respond to the arguments of others. <input type="checkbox"/> Compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and if there is a flaw in an argument, explain what it is. <hr/> <p><i>Teachers are expected to</i> _____:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Provide opportunities for students to listen to or read the conclusions and arguments of others.
<p>MP.4. Model with mathematics.</p>	<p><i>Students are expected to</i> _____:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. <input type="checkbox"/> Make assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. <input type="checkbox"/> Experiment with representing problem situations in multiple ways, including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. <input type="checkbox"/> Identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts, and formulas. <input type="checkbox"/> Evaluate their results in the context of the situation and reflect on whether their results make sense. <input type="checkbox"/> Analyze mathematical relationships to draw conclusions.

<i>Mathematical Practices</i>	Observations
	<p><i>Teachers are expected to</i> _____:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Provide contexts for students to apply the mathematics learned.
<p>MP.5. Use appropriate tools strategically.</p>	<p><i>Students are expected to</i> _____:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Use tools when solving a mathematical problem and to deepen their understanding of concepts (e.g., pencil and paper, physical models, geometric construction and measurement devices, graph paper, calculators, computer-based algebra or geometry systems.) <input type="checkbox"/> Consider available tools when solving a mathematical problem and decide when certain tools might be helpful, recognizing both the insight to be gained and their limitations. <input type="checkbox"/> Detect possible errors by strategically using estimation and other mathematical knowledge. <hr/> <p><i>Teachers are expected to</i> _____:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Model the use of appropriate tools (e.g. manipulatives) instructionally.
<p>MP.6. Attend to precision.</p>	<p><i>Students are expected to</i> _____:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Use clear and precise language in their discussions with others and in their own reasoning. <input type="checkbox"/> Use clear definitions and state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. <input type="checkbox"/> Specify units of measure and label parts of graphs and charts. <input type="checkbox"/> Calculate with accuracy and efficiency based on a problem's expectation. <hr/> <p><i>Teachers are expected to</i> _____:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Emphasize the importance of precise communication.

<i>Mathematical Practices</i>	Observations
MP.7. Look for and make use of structure.	<p data-bbox="499 175 1018 207"><i>Students are expected to</i>_____:</p> <ul style="list-style-type: none"> <li data-bbox="552 240 966 280"><input type="checkbox"/> Describe a pattern or structure. <li data-bbox="552 289 1822 329"><input type="checkbox"/> Look for, develop, generalize, and describe a pattern orally, symbolically, graphically and in written form. <li data-bbox="552 337 1329 378"><input type="checkbox"/> Relate numerical patterns to a rule or graphical representation <li data-bbox="552 386 947 427"><input type="checkbox"/> Apply and discuss properties. <hr/> <p data-bbox="499 508 1018 540"><i>Teachers are expected to</i>_____:</p> <ul style="list-style-type: none"> <li data-bbox="552 573 1207 613"><input type="checkbox"/> Provide time for applying and discussing properties.
MP.8. Look for and express regularity in repeated reasoning.	<p data-bbox="499 667 1018 699"><i>Students are expected to</i>_____:</p> <ul style="list-style-type: none"> <li data-bbox="552 732 1092 773"><input type="checkbox"/> Describe repetitive actions in computation <li data-bbox="552 781 1081 821"><input type="checkbox"/> Look for mathematically sound shortcuts. <li data-bbox="552 829 1197 870"><input type="checkbox"/> Use repeated applications to generalize properties. <li data-bbox="552 878 1423 919"><input type="checkbox"/> Use models to explain calculations and describe how algorithms work. <li data-bbox="552 927 1396 967"><input type="checkbox"/> Use models to examine patterns and generate their own algorithms. <li data-bbox="552 976 1096 1016"><input type="checkbox"/> Check the reasonableness of their results. <hr/> <p data-bbox="499 1024 1018 1057"><i>Teachers are expected to</i>_____:</p> <ul style="list-style-type: none"> <li data-bbox="552 1089 1381 1130"><input type="checkbox"/> Encourage students to look for and discuss regularity in reasoning.

Common Core Look-Fors iPad and iPhone App

<http://itunes.apple.com/us/app/common-core-look-fors-mathematics/id467263974?mt=8>

Deconstructing Common Core State Standards into Student Skills

Common Core State Standard:

RL.8.2: Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; provide an objective summary of the text.

STEP 1: Identify the key concepts (nouns or noun phrases)

Key Concepts: theme, central idea, characters, setting plot, objective summary

STEP 2: Determine the learning target(s): (verbs)

Learning Targets: Determine, analyze, provide (objective summary)

Step 3: Identify the Learning Target categories	Knowledge	Reasoning	Demonstration	Product
Determine	✓			
Analyze		✓		
Provide			✓	

STEP 4: Identify the Securely Held Content (prerequisite knowledge already mastered)

Securely Held Content: central idea, theme, summary

STEP 5: Clarify any terms that might be interpreted in multiple ways or are vague

Terms: objective summary

STEP 6: Write student skills that are specific and measurable

Sample Student Skills:

- Define “theme”
- Trace the central idea of a text
- Identify main characters
- Describe the relationship of main characters in their reaction to a specific event in the text

STEP 7: Identify the categories of learning target for each skill (Knowledge, Reasoning, Demonstration, or Performance) and the Level of Rigor

STEP 8: Write a learning progression

Surveys of Enacted Curriculum (SEC) Cognitive Demand Categories for English Language Arts

Level I	Level II	Level III	Level IV	Level V
Memorize, Recall	Perform Procedures, Explain	Generate, Create. Demonstrate	Analyze, Investigate	Evaluate, Integrate
Reproduce sounds or words	Follow instructions	Create / develop connections among text, self, world	Categorize / schematize information	Determine relevance, coherence, internal consistency, logic
Provide facts, terms, definitions, conventions	Give examples	Recognize relationships	Distinguish fact and opinion	Assess adequacy, appropriateness, credibility
Locate literal answers in text	Check consistency	Dramatize	Compare and contrast	Test conclusions, hypotheses
Identify relevant information	Summarize	Order, group, outline, organize ideas	Identify with another's point of view	Synthesize content and ideas from several sources
Describe	Identify purpose, main ideas, organizational patterns	Express new ideas (or express ideas newly)	Make inferences, draw conclusions	Integrate with other topics and subjects
	Gather information	Develop reasonable alternatives	Predict probable consequences	Critique
			Generalize	

Each category is defined using a list of descriptors to identify the types of cognitive demand associated with a given category of student expectation. It should be noted that the descriptors listed for each category are not exhaustive, but intended to be illustrative of the types of activities associated with each category.

Surveys of Enacted Curriculum (SEC) Cognitive Demand Categories for Mathematics

Level I	Level II	Level III	Level IV	Level V
Memorize Facts, Definitions, Formulas	Perform Procedures	Demonstrate Understanding of Mathematical Ideas	Conjecture, Analyze, Generalize, Prove	Solve Non-Routine Problems, Make Connections
Recite basic mathematics facts	Use numbers to count, order or denote	Communicate mathematical ideas	Determine the truth of a mathematical pattern or proposition	Apply & adapt a variety of appropriate strategies to solve problems
Recall mathematics terms and definitions	Do computational procedures or algorithms	Use representations to model mathematical ideas	Write formal or informal proofs	Apply mathematics in contexts outside of mathematics
Recall formulas and computational	Follow procedures/instructions	Explain findings and results from data analysis	Analyze data	Recognize, generate or create patterns
	Make measurement, do computations	Develop/explain relationships between concepts	Find a mathematical rule to generate a pattern or number sequence	Synthesize content and ideas from several sources
	Solve equations/formulas, routine word problems	Explain relationships between models, diagrams, & other representations	Identify faulty arguments or misrepresentations of data	
	Read or produce graphs and tables		Use spatial reasoning	
	Execute geometric constructions			

Each category is defined using a list of descriptors to identify the types of cognitive demand associated with a given category of student expectation. It should be noted that the descriptors listed for each category are not exhaustive, but intended to be illustrative of the types of activities associated with each category.

Alignment of Taxonomies

Bloom's Taxonomy of Cognitive Domain	Bloom's Taxonomy Cognitive Domain Revised	Cognitive Demand Mathematics	Cognitive Demand English Language Arts	Webb's Depth of Knowledge
Knowledge	Remembering	Level One Memorize Facts, Definitions & Formulas	Level One Memorize, Recall	Level One Recall and Reproduction
Comprehension	Understanding	Level Two Perform Procedures	Level Two Perform Procedures, Explain	Level Two Skills and Concepts
Application	Applying	Level Three Demonstrate Understanding of Mathematics	Level Three Generate, Create, Demonstrate	
Analysis	Analyzing	Level Four Conjecture, Analyze, Generalize, Prove	Level Four Analyze, Investigate	Level Three Strategic Thinking
Synthesis	Evaluating	Level Five Solve Non-Routine Problems, Make Connections	Level Five Evaluate, Integrate	Level Four Extended Thinking
Evaluation	Creating			

Deconstructing Common Core State Standards – Sample

Complete steps 6-8 of the deconstructing standards process:

Step 6 – Construct skill statements (these are often called learning targets). What do students have to know and be able to do in order to meet the standard?

Step 7 – Categorize each of the skill statements by its type of learning target (Knowledge, Reasoning, Demonstration, Product/Performance). Note that often these may belong to more than one category. Identify the level of rigor of the skill using either Webb’s Depth of Knowledge, SEC Cognitive Demand Categories, or Bloom’s Taxonomy.

Step 8 – Write a learning progression by numbering the skill statements in the order they should be instructed. This is a good time to review to ensure that each skill is actually on grade level. In other words, do not include skills that should have been mastered in previous grade levels or in grade levels above that at which the standard is intended.

Standard RI.8.4: Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.

	Step 6 : Construct specific skill statements		Target Categories	Level of Rigor*	Step 7 : Identify the types of learning target(s) (K, R, D, and/or P) and the Level of Rigor
Step 8: Write a learning progression		Describe the difference between literal meaning and figurative meaning			
		Create sentences or phrases which exemplify figurative meaning			
		Construct an argument that would justify the use of specific words to illustrate how those words are used to provide meaning and context			
		Describe how connotative meaning and figurative meaning are interrelated			

* Use Depth of Knowledge (DOK), Surveys of Enacted Curriculum (SEC) Cognitive Demand Categories, or Bloom’s Taxonomy .

****NOTE:** Review the full text of the standard to ensure that the full intent of the standard is indeed met through these skill statements. Are the learning target categories and level of rigor of the standard ultimately represented?

Resources

1. North Carolina Unpacking Standards

<http://www.ncpublicschools.org/acre/standards/common-core-tools/>

Each grade level document describes the mathematical practices in terms of the behaviors that should be exhibited by students in that grade.

2. Arizona CCSS Documents

<http://www.azed.gov/standards-practices/mathematics-standards/>

List the Standards for Mathematical Practice that would be most appropriately integrated for each individual standard.

3. Common Core Look-fors

<http://splaysoft.com/CCL4s/Welcome.html>

Common Core Look-fors is a great app for teachers integrating the Common Core State Standards into their classroom! CCL4s is available on both iPhone and iPad as a single download.

4. ELA and Literacy Resources for the Kansas Common Core Standards

<http://www.ksde.org/Default.aspx?tabid=4778>

A large number of resources. The KSDE website devoted to the Kansas Common Core Standards in Mathematics and English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects.

5. Inside Mathematics

<http://www.insidemathematics.org/>

Inside Mathematics is a professional resource for educators passionate about improving students' mathematics learning and performance. This site features classroom examples of innovative teaching methods and insights into student learning, tools for mathematics instruction that teachers can use immediately, and video tours of the ideas and materials on the site.

6. Standards Progressions Documents – Bill McCallum

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

Each progression contains a discussion how the Math Practices are associated with each domain

7. Inside Mathematics

<http://insidemathematics.org/index.php/common-core-standards>

Classroom videos and tasks that illustrate students engaged in the Math Practices

8. CCSSO Curriculum Materials Analysis Tools

<http://www.mathedleadership.org/ccss/materials.html>

Tools for analyzing content and math practices in curricular materials