Common Core State Standards
for
Mathematics
and
English Language Arts/Literacy

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Michael Beck & Sheila Potter
Assessment & Curriculum Advisors

Coordinated by:

NATIONAL GOVERNORS ASSOCIATION
CENTER FOR BEST PRACTICES
(NGA CENTER)
&
COUNCIL OF CHIEF STATE SCHOOL OFFICERS (CCSSO)

June, 2010
Developed in collaboration with teachers, school administrators, & subject matter experts in mathematics & English language arts

Based on the College & Career Readiness Standards published in fall, 2009 & K-12 learning progressions

Revised following multiple rounds of feedback from states, teachers, researchers, higher education, & the general public

Released as final document on June 2, 2010

To establish a common foundation for building excellence & equity for all students.

To ensure that all students are college- & career-ready at the end of K-12 schooling.
Why is this important?

› Currently, every state has its own set of academic standards, meaning public education students in each state are learning to different levels.

› All students must be prepared to compete with not only their American peers in the next state, but with students from around the world.

What do the CCSS Mathematics mean for Adult Education?

› Increased focus on the “practical” – the second C in “CCR”

› More rigor – “calculus-ready” after HS

› More integration across content areas (how??)

› A major change in expectations
What Characterizes the CCSS?

- **Focus** – fewer “topics” in much greater depth
  “Teaching less, learning more”

- **Coherence** – better coordination of standards
  across grades, topics, and strands

- **Balance** between conceptual understanding
  and procedural skill

- Focus on **application** of the skills – in
  practical and “unique” situations

Concerns about these foci

- **Focus**: There are still plenty of standards, and
  many of those are “new” to instruction.
  “Mile wide and inch deep” will go away slowly!

- **Coherence**: Attractive theory, but most of
  “learning progressions” is shooting in the dark.

- **Balance**: Computation, Concepts, & Problem
  Solving have been with us for > 100 years!

- **Application**: What’s “real-world” for you isn’t
  for me. Many skills aren’t very “real.”
MAJOR Concern about these foci

- Getting there:
  - Materials – publisher-provided and local
  - “Entry-level” skills for the students
  - Instructor preparedness
  - Attention to in-service needs

  - Can it be done? Sure.

  - Can it be done by 2015? 2016? ????

So, what’s expected in HS?

- Extend exponential properties to rational exponents.
- Perform arithmetic operations with complex numbers.
- Use matrices in real-world applications.
- Construct/compare linear and exponential models.
- Model periodic phenomena with trigonometric functions.
- Use Cartesian coordinates to prove simple geometric theorems algebraically.
- Compute probabilities of compound events in a uniform probability model.
- Use expected values to solve complex problems.
- Formulate, represent and analyze tractable models.
OK, those are silly. What about Grade 7??

- Test for equivalent ratios in a coordinate plane; observe whether the graph is a straight line through the origin.
- Understand that every quotient of integers (with non-0 divisors) is a rational number.
- Solve problems involving scale drawings of geometric figures, including reproducing a scale drawing at a different scale.
- Solve real-world problems involving volume and surface area of 2- and 3-D objects composed of quadrilaterals, polygons, cubes, and right prisms.

OK, these seem hard. But, what about “real questions”?

- If you want to place a towel bar 9 3/4 inches long in the center of a door 27 1/2 inches wide, how far from each edge should the bar be placed?
- A salesperson is paid $50 per week plus $3 per sale. This week, she wants her pay to be at least $100. Write an inequality for the number of sales she needs to make and describe your solution.
- If 40% of donors have Type A blood, what is the probability that it will take at least 4 donors to find one with Type A blood?
- The mean height of players on the basketball team is 10 cm greater than that of the players on the soccer team. The mean absolute variability of the heights of the teams is 15 cm. If the mean height of...
So, what do we have?

Standards that are:

- More concentrated
- More conceptual
- More contextual
- More challenging/rigorous

College-Ready or College-Unready?

College readiness – the level of preparation students need in order to be ready to enroll & succeed without remediation in credit-bearing entry-level coursework at a two- or four-year institution, trade school, or technical school – is currently inadequate & should be an expectation for all high school students.

~ ACT, Reading Between the Lines, 2006

The clearest differentiator is the ability to comprehend complex texts. College-ready students are willing to struggle & plod through them. Unready students give up.
A Literacy Crisis with Deep Roots

Many never have the opportunity to go on to postsecondary schooling.
- Inability to comprehend complex text begins long before HS.
- 70% begin HS with below-proficient skills (NAEP) and can’t handle HS.
- 3,000 students drop out each day.

Chief reason cited? Students do not have the reading & writing skills to keep up with the curriculum!!

What has caused the crisis – that students are not adequately prepared for postsecondary education?

<table>
<thead>
<tr>
<th>College &amp; Career</th>
<th>Middle School &amp; High School</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Difficulty of textbooks (2– or 4-yr. institutions, trade &amp; technical schools) has increased exponentially.</td>
<td>1. Difficulty of textbooks has declined precipitously.</td>
</tr>
<tr>
<td>2. Expository/ informational text makes up majority of required reading.</td>
<td>2. Students seldom required to read complex informational text.</td>
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What has caused the crisis?

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<td>3. Students held accountable for independent reading.</td>
<td>3. Students rarely held accountable for independent reading of their textbooks.</td>
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What has caused the crisis?

4. Aliteracy – a deterioration in overall reading ability increasing at an alarming rate

5. Digital natives racing through text & responding instantly – seldom reflecting or confronting the limits of their knowledge
# National Standards

- **College & Career Readiness (CCR) Standards** in Reading, Writing, Speaking, Listening, & Language (Fall, 2009)
- **Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, & Technical Subjects** (June, 2010)

<table>
<thead>
<tr>
<th>College and Career Readiness Anchor Standards</th>
<th>K–12 ELA/Literacy Common Core Standards</th>
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<tr>
<td>10 Reading Standards</td>
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</tr>
<tr>
<td></td>
<td>10 Reading Standards for Literacy in History/Social Studies (6–12)</td>
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<td>10 Reading Standards for Literacy in Science and Technical Subjects (6–12)</td>
</tr>
<tr>
<td>(No CCR Anchor Standards)</td>
<td>4 Reading Foundational Skills (Standards 1–4 for K–2, Standards 3–4 for 3–5)</td>
</tr>
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<td>10 Writing Standards</td>
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CCSS for ELA & Literacy: 
7 Themes & Challenges

1. Elevated Complexity Expectations
2. Emphasis on Literary Nonfiction & Informational Text
3. Literacy in Social Studies, Science, & Technical Subjects
4. Close, Careful, & Critical Reading as Thinking
5. Academic Vocabulary
6. Evidence & Argument
7. Integrated, Contextualized Tasks

1. Elevated Complexity Expectations

- **Staircase of Text Complexity**
- Std. 10: “Read & comprehend texts in the grades _____ band independently & proficiently.”

- New decisions:
  - Does this text meet the new grade-level complexity band?
  - What scaffolding must I provide so that students can manage the more difficult reading?
Text complexity is defined by:

1. **Quantitative measures** – readability and other scores of text complexity often best measured by computer software.
2. **Qualitative measures** – levels of meaning, structure, language conventionality and clarity, and knowledge demands often best measured by an attentive human reader.
3. **Reader and Task considerations** – background knowledge of reader, motivation, interests, and complexity generated by tasks assigned often best made by educators employing their professional judgment.

**Step 1: Quantitative Measures**

Measures such as:
- Word length
- Word frequency
- Word difficulty
- Sentence length
- Text length
- Text cohesion
### Change in Complexity of Reading

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<tr>
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### What happens when we “stretch”? 

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**This means:**
- “Top” of Gr. 5 now becomes “Mid” Grade 4
- “Average” Grade 7 becomes Top Gr. 5 / Bottom Gr. 6
- “Top” Grade 10 becomes “Average” Grade 8
- “Hardest” Grade 12 becomes “Average” 10

**WHY?**
Text Complexity / Difficulty by Grade Level

The CCR “Gap”

Text Complexity / Difficulty by Grade Level

Today

Tomorrow
Step 2: Qualitative Measures

Measures such as:
- Levels of meaning
- Explicit vs. implicit purpose
- Structure
- Language conventionality
- Language clarity
- Prior knowledge demands
- Cultural knowledge demands
- Disciplinary knowledge demands

Step 3: Reader and Task

Considerations such as:
- Motivation
- Knowledge and experience
- Purpose for reading
- Complexity of related task assigned
- Complexity of related questions asked
2. Emphasis on Informational Text & Literary Nonfiction

- Much of our knowledge base comes from informational text.
- Informational text is harder to comprehend than narrative text.
- Informational text makes up 80% of required college/workplace reading.
- Yet students are asked to read very little informational text in elementary & middle school.
- The CCSS require a balance of literature & informational text:
  
  K–5 = 50:50
  6–12 = 75:25

2. Emphasis on Informational Text & Literary Nonfiction

- Grades 6—12:
  - In English classes, a 50:50 split between literary fiction & literary nonfiction
  - Informational text in other subject areas
- Literary nonfiction genres include: essays, speeches, opinion pieces, biographies, journalism, & historical, scientific, & other high-quality documents written for a broad audience, e.g., *The Declaration of Independence*, *Walden*, Richard Wright’s *Black Boy*, & *Hope, Despair and Memory* by Elie Wiesel.
3. Literacy in Social Studies, Science, & Technical Subjects

- College/career readiness demands critical thinking, problem solving, & self-directed learning across all subject areas in both academic & career-oriented courses.
- Primary sources, secondary sources, textbooks (print & digital), quantitative data, technical manuals, etc.
  - Students must not simply refer to texts, but must be held accountable for reading these texts independently.
- Reading becomes increasingly disciplinary, & a one-size-fits-all approach doesn’t work.
- Highly-specialized literacy skills – disciplinary experts read & write in idiosyncratic ways.

4. Reading as Thinking -- Slow, Deep, Close, Careful, & Analytical

Some books are to be tasted, others to be swallowed, and some few to be chewed and digested.

~ Francis Bacon (1605)
Reading as Thinking: What does it look like?

- Begin with analysis of shorter, challenging texts that elicit close reading & rereading, e.g., The Gettysburg Address – only 3 paragraphs, but complex!
- Read first for literal ideas, & with repeated readings, probe for deeper meanings.
- Read with a pencil – note what’s confusing, and pay attention to patterns.
- Respond to text-dependent questions & tasks focused on the meaning within the text, not on connections outside the text.
- Deconstruct text in order to construct meaning from text. Reading is whole->part->whole->part->whole, etc.
- Develop habits of mind – stamina, patience, curiosity, motivation, metacognition, & self-efficacy.

Reading as Thinking: Scaffolded Instruction

Struggling readers will need more scaffolding with easier texts, but . . . (they) “must not miss out on essential practice & instruction their classmates are receiving to help them read closely, think deeply about texts, participate in thoughtful discussions, & gain knowledge of both words & the world.”

Publishers’ Criteria for the CCSS (Revised), Grades 3–12, April, 2012
Reading as Thinking: Scaffolding Instruction

- Create text-dependent tasks.
  - Analyze paragraphs on a sentence-by-sentence basis.
  - Analyze sentences on a word-by-word basis.
  - Consider why an author may have chosen to use certain words & phrases.
  - Determine how sentences/paragraphs connect to other sentences/paragraphs/the whole text.
  - Probe each argument in persuasive text, each idea in expository text, each key detail in literary text.

5. Academic Vocabulary

- Complex text consists of academic language.
- Two areas of language emphasis in the CCSS are:
  - 1. Students' ability to acquire & use a rich vocabulary
  - 2. Students' knowledge of language varieties & ability to use language skillfully
- Only 35% are performing at CCR levels with respect to these skills.
Semantics & Syntax

Academic Vocabulary
- High-frequency, all-purpose words (*compare, routine, previous*)
- Multi-meaning Words (*union, balance, obtuse*)
- Domain-specific terms

Syntax
- the pattern or structure of word order in complicated sentences, clauses, & phrases
- Analysis through close reading & discussion

6. Evidence & Argument

Prove it!!!
- Text-centered experiences
- Argumentation with text-based evidence
  - Valid conclusions consistent with evidence in text
  - Analysis of author's argument
  - Evaluation of degree to which evidence supports author's claims

Listen/read like a detective!
Speak/write like a reporter!
7. Integrated, Contextualized Tasks

- Speaking & writing about what is listened to & read - arguments grounded in discipline-specific content
- Analysis & evaluation of information presented in diverse formats & media (e.g., print, digital, visual, quantitative)
- Comparison of two or more authors’ or sources’ perspectives on the same topic
- Synthesis of information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a concept or process

Reading, writing, listening, & speaking like historians, scientists, mathematicians, etc.

7. Integrated, Contextualized Tasks – App. B Examples

- Students compare George Washington's Farewell Address to other foreign policy statements, such as the Monroe Doctrine, & analyze how both texts address similar themes & concepts regarding “entangling alliances.” [RI.9–10.9]
- Students analyze the role of African American soldiers in the Civil War by comparing & contrasting primary source materials against secondary syntheses such as Jim Haskin’s Black, Blue and Gray: African Americans in the Civil War. [RH9–10.9]
Two K–12 Assessment Consortia:
**Smarter Balanced & PARCC**

- Each as > 20 member states
- Each “represents” ~ 50% of nation’s kids
- Each was funded > $175,000,000

- Both are developing summative (accountability) tests that will be effective in the 2014–15 school year.

- There are also Special Ed & ELL consortia working on standards and assessments.

**BOTH ARE BEHIND SCHEDULE**

- There are also SE & ELL consortia working on standards and assessments
Two K–12 Assessment Consortia:

- Both are developing **summative** tests for accountability.
- Both will include **performance-based** items.
- Both will include "**within-year**" assessments.
- Both will be heavily **computer-based**.
- Both “talk the talk” about **instruction & PD**.

How Will the CCSS Tests Look?

**English Language Arts:**

- **Focus on Reading Comprehension**
- **More–complex texts**
- **Paired/clustered passages – by theme**
- **Heavy use of “informational” texts**
- **Somewhat more complex questions**
- **Some constructed–response items**
How Will the CCSS Tests Look?

- Mathematics
  - Much more-rigorous content
  - Grounding in “realistic” contexts
  - Assume higher-level HS content
  - Some constructed-response items
  - Items require understanding of concepts.

So Why Should We Care?

Yes, these will be K–12 (really 3–HS) assessments.

BUT –

They will impact what adult programs do – both instructionally & in assessment.
What is the *Promise*?

- Have 50 sets of standards (and tests) ever really made sense?
- Efficiencies / clearer direction
- Focus on deeper thinking (ELA – “beyond reading” coverage, analytic comprehension, Mathematics – application)
- Focus on “essentials” – Reading for understanding, conceptual understandings in Mathematics

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Three Major Concerns – for the Consortia & Adult Programs

- **Schedule & Timing**
  - 2014–15 is “tomorrow.”
  - Federal Policy vs. Real Classrooms – “Fair notice”
  - Performance Tasks – 2–4 hr/content area
  - “Filtering” from K–12 to Adult Programs

- **“End Game”**
  - What happens when the federal $$$ go away?
  - 2 are better than 50; but how are the 2 “aligned”?

- **“Complexity”**
  - Challenge *is* needed. *Is this too much too fast?*
What Should I Do to Get Ready?

- Don’t be an ostrich. This **WILL** happen!

- Attend to the CCSS: they are *the* game for the next few years.
  - They are NOT “more of the same.”
  - They ARE markedly more challenging.
  - They **WILL** control state tests . . . and GED & NEDP.

- You MUST change what & how you are teaching – specific standards, complexity (both ELA & Math), and expectations.

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Sources

- [Educore.ascd.org](http://Educore.ascd.org) and [insidemathematics.org](http://insidemathematics.org) – (two valuable and practical online resources for teacher-based instructional information related to the CCSS in Mathematics).