California’s Common Core State Standards & 21st Century Skills

Sandi Yellenberg
Santa Clara County Office of Education
Science Coordinator
sandra_yellenberg@sccoe.org
Agenda

• Defining 21\textsuperscript{st} Century Literacy
• Brief overview of the:
  ▪ Common Core State Standards (CCSS)
    ▫ ELA - Literacy across content areas
    ▫ Math
  ▪ Demonstration of a lesson
  ▪ Identification of Common Core Standards and 21\textsuperscript{st} Century Skills in the lesson
Outcomes

• Better understanding of the Common Core State Standards

• Better understanding of 21st Century Skills

• Awareness of the 4 C’s

• Better understanding of what the Common Core Standards and 21st Century Skills could look like in a classroom
Norms for 21st Century Learning

You all know the norms of polite, respectful, professional behavior – in addition to those, please observe the following norms:

- **Be inquisitive**
  - Ask questions

- **Take risks**
  - Push your thinking beyond your comfort zone
  - Put your ideas on the table for all of us to learn from – and take them off if you change your mind

- **Pay attention to yourself and others**
  - Don’t monopolize the conversation – encourage others to share their ideas
  - Presume positive intent
Benefits of the CCSS

- Internationally benchmarked
- Evidence and research-based
- Expectations clear to students, parents, teachers, and the general public
- Costs to the state reduced
Rationale for CCSS

Ensure that our students are:

- Provided a vision of what it means to be an academically literate person in the 21st Century
- Meeting college and career expectations
- Prepared to succeed in our global economy
What’s considered a “text” in the 21st Century?

“New Literacies”

- Stories, memoirs, poetry, directions for cooking, research papers, lab reports, more lab reports, problem sets, equations, expressions, maps, email, text-messaging, video games, financial reports, manuals, tests/exams, opera, rap, advertisements, visual and motion media, charts, graphs, artwork, PowerPoints, speech.
To Develop New Literacies for the 21\textsuperscript{st} Century

21\textsuperscript{st} Century Readers and Writers will need to⋯
• develop proficiency with the tools of technology
• manage, analyze and synthesize multiple streams of simultaneous information,
• build relationships with others to pose and solve problems collaboratively and cross-culturally
• create, critique, analyze, and evaluate multi-media texts
• design and share information for global communities to meet a variety of purposes
21st Century Literacy

- New Literacies
- Technology
- Multimedia
- Collaboration
- Communication
- Critical Problem Solving
- Creative Thinking
- Entrepreneurial Spirit

“The 4 Cs”
21st Century Student Outcomes and Support Systems

- Creativity & Innovation
- Critical Thinking & Problem-Solving
- Communication & Collaboration

- Flexibility & Adaptability
- Initiative & Self-Direction
- Social & Cross-Cultural Skills
- Productivity & Accountability
- Leadership & Responsibility

- Information Literacy
- Media Literacy
- Information, Communication, & Technology Literacy

- Global Awareness
- Financial, Economic, Business and Entrepreneurial Literacy
- Civic Literacy
- Health Literacy
- Environmental Literacy
Common Core State Standards (CCSS)...

Outline the most essential skills and knowledge every student needs to master to succeed in 21st Century college and careers.
Together these standards prepare students for the literacy demands of the 21st Century.
Together these standards prepare students for the literacy demands of the 21st Century.

College and Career Readiness Standards

Common Core State Standards

K-12 ELA/Literacy

K-12 Mathematics

Reading for Literacy
- in History and Social Studies
- in Science & Technical Subjects

Writing for Literacy
- in History /Social Studies and Science & Technical Subjects

Writing

Speaking & Listening

Language

Reading

Informational Text

Literacy

Developed by Sandi Yellenberg & Laurie Stapleton
Some of the Biggest Changes for California in the Common Core State Standards
NAEP Alignment in Reading

<table>
<thead>
<tr>
<th>Grade</th>
<th>Literature</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>8</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td>12</td>
<td>30%</td>
<td>70%</td>
</tr>
</tbody>
</table>

Percentages do not imply that high school ELA teachers must teach 70% informational text; they demand instead that a great deal of reading should occur in other disciplines.
Text Complexity – What is it?

Qualitative

Quantitative

Reader and Task
Lexile Framework® for Reading Study
Summary of Text Lexile Measures

Interquartile Ranges Shown (25% - 75%)

Text Lexile Measure (L)

High School Literature
College Literature
High School Textbooks
College Textbooks
Military
Personal Use
Entry-Level Occupations
SAT 1, ACT, AP*

* Source of National Test Data: MetaMetrics
NAEP Alignment in Writing

Three mutually reinforcing writing capacities:
- To persuade
- To explain
- To convey real or imagined experience

<table>
<thead>
<tr>
<th>Grade</th>
<th>Persuade</th>
<th>Explain</th>
<th>Convey Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>30%</td>
<td>35%</td>
<td>35%</td>
</tr>
<tr>
<td>8</td>
<td>35%</td>
<td>35%</td>
<td>30%</td>
</tr>
<tr>
<td>12</td>
<td>40%</td>
<td>40%</td>
<td>20%</td>
</tr>
</tbody>
</table>
The 3 Big Buckets

Opinion (K-5)
Argument (6-12)
Informative/Explanatory
Narrative
Speaking and Listening Strand

Organized by:
• Comprehension and Collaboration
• Presentation of Knowledge and Ideas

Emphasis is on:
• Collaborative Conversations
• Collaborative Group Work
• Communicate Effectively (audience aware)
• The use of language increasing as the sophistication of reading, writing, and speaking become more prevalent.
Mathematics
Standards for Mathematical Practices

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
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
## Domains and Conceptual Categories

<table>
<thead>
<tr>
<th>K</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>
</thead>
<tbody>
<tr>
<td><strong>Counting &amp; Cardinality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Number and Operations in Base Ten</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Number and Operations – Fractions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ratios and Proportional Relationships</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>The Number System</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Expressions and Equations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Algebra</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Functions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Geometry</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Measurement and Data</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Statistics and Probability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
California Grade 8 Options

Two Sets of Standards for Grade 8
1. Standards for Algebra 1 (California addition)
2. Grade 8 Common Core
Two Mathematics Pathways

**Traditional Pathway**
- 2 Algebra courses, 1 Geometry course, with Probability and Statistics interwoven

**Integrated Pathway**
- 3 courses that attend to Algebra, Geometry, and Probability and Statistics each year

Courses in higher level mathematics: Precalculus, Calculus*, Advanced Statistics, Discrete Mathematics, Advanced Quantitative Reasoning, or courses designed for career technical programs of study.

Traditional Pathway
Typical in U.S.

Integrated Pathway
Typical outside of U.S.
A VERY Brief Sample Lesson
Lesson Objectives & Standards

Science Content:
CA High School Biology Standard 9.b.

Objective: You will experience how your nervous system communicates the sense of touch from different parts of your body.
Lesson Objectives & Standards

**Language:**

**CA CCSS History/Social Science, Science & Technology Writing Grade 9-10**

4. Produce clear and coherent writing ...

**CA CCSS Speaking and Listening Grades 9-10**

2. “Integrate ...information presented in diverse formats…”

4. “Present information, findings and supporting evidence clearly, concisely, and logically...”
Use Science Notebooks to Promote the 4 C’s

- Collaboration
- Communication
- Critical Problem Solving
- Creative Thinking
Features of a Science Notebooks

- Numbered Pages
- Table of Contents
- Glossary (with pictures/icons)
- No erasures - only strikethroughs
- Evidence of students’ thinking
- Sketches, tables, charts, diagrams, flowcharts, timelines...