

Transitioning to Common Core Mathematics (CCSS-M)

Mindy Shacklett
Mathematics Coordinator
mshacklett@sdcoe.net

San Diego County Office of Education



LEARNING AND
LEADERSHIP
SERVICES

The need...

California unemployment: 1,547,700 8.3% (Oct. 2013)

California Employment Development Department

STEM:
1.4 jobs for every
1 unemployed person



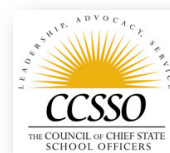
Non-STEM:
4.9 unemployed
people for every 1 job



CHANGE THE EQUATION IN PARTNERSHIP WITH
the American Institutes for Research.

A Multi-State Led Effort

The Common Core State Standards (CCSS) were spearheaded by the National Governors Association and the Council of Chief State School Officers of 48 states. The standards were created during the Summer of 2009, finalized in June of 2010. CA adopted the California Common Core State Standards (CCCSS) Aug. 2, 2010 and modified them Jan. 16, 2013.



Mission Statement

*The standards are designed to be robust and relevant to the real world, reflecting the knowledge and skills that our young people need for success in college and careers. With **American students** fully prepared for the future, our communities will be best positioned to compete successfully in the global economy.*

Common Core States Initiative
Mission Statement



Preparing for Higher Mathematics

The CCSS–M...

- ▶ Create mathematically proficient students who are prepared to enter college credit bearing courses;
- ▶ Go beyond just “doing” mathematics;
- ▶ Emphasize mathematical modeling and application;
- ▶ Require students to explain and justify their thinking;
- ▶ Develop depth of understanding over time.

Instructional Shifts

In Content and Instruction...

- ▶ **Focus** strongly where the Standards focus;
- ▶ **Coherence**: think across grades, and **link** to major topics* within the grades;
- ▶ **Rigor**: pursue
 - **conceptual understanding**,
 - procedural skill and **fluency**, and
 - **application**in major topics* with equal intensity

Ants vs. Humans, a Cup of Rice, and a Locker Game

- ▶ Read through the three tasks;
- ▶ Select a task to complete.
- ▶ Think about:
 - What “mathematics” you are engaged with.
 - What “else” you are applying to complete the task.

Smarter Balanced Assessment Consortium

- ▶ One of two Assessment Consortia
- ▶ Charged with creating and managing the administration of the test
- ▶ ELA and Mathematics
- ▶ Computer adaptive
- ▶ Four types of tasks
 - Selected Response
 - Constructed/Extended Response
 - Technology Enhanced
 - Performance Task
- ▶ Measures students’ depth of knowledge

Smarter Balanced Measuring...

Webb's Depth of Knowledge (DOK)

- ▶ A measure of rigor in terms of cognitive complexity; the complexity of *mental processing* that must occur to complete a task.
- ▶ Levels name four different ways students interact with content:
 1. Recall
 2. Skills and Concepts
 3. Strategic Thinking
 4. Extended Thinking
- ▶ Each level is dependent on how *deeply* students understand the content.
- ▶ Does NOT necessarily indicate degree of "difficulty".

Connecting to The Standards

- ▶ Two sets of standards under CCSS-M:
 - Content Standards
 - Standards for Mathematical Practice

Content is not enough!

Standards for Mathematical Practice

“The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.”

Introduction to the Common Core Standards for Mathematics

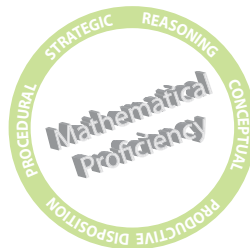
Standards for Mathematical Practice

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

Supporting Success

Supporting your students at home...

- ▶ Encourage mental math;
- ▶ Encourage estimation/prediction;
- ▶ Ask for explanations not just answers;
- ▶ Ask about their thinking, instead of giving answers;
- ▶ Encourage alternate strategies;
- ▶ Seek multiple solutions.
- ▶ Notice and point out mathematics you engage in daily.



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