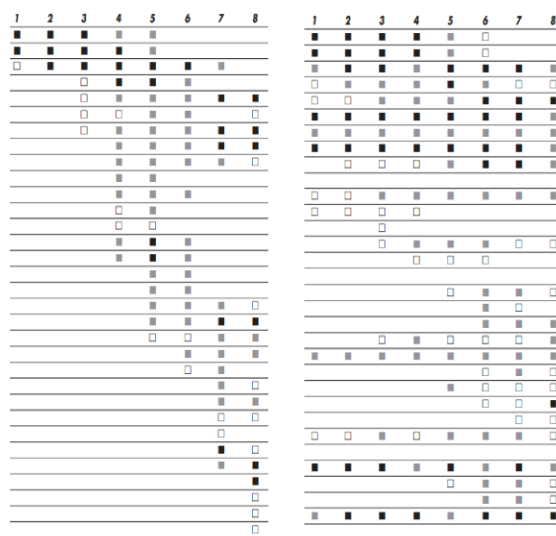


# Key Facts: The Development and Design of the Common Core State Standards for Mathematics

By Jason Zimba

## Common Core Development Process

- Standards are a list of learning goals. Standards have been used by states for decades
- The process of developing the Common Core began in 2007 when state superintendents attending a meeting of the Council of Chief State School Officers discussed the benefits of developing Common standards
- The 73 math committee members included classroom teachers, university mathematicians, math education researchers (including experts in early childhood education) and state leaders. Only two members were affiliated with testing organizations – ACT and College Board – both of whom had conducted previous research about college and career readiness
- The working group was charged with using evidence and research – some of the works consulted can be seen on pages 91-93 of the standards document
- On March 10, 2010, the public draft of the standards was released for comment. Thousands of comments were gathered from the public, teachers, researchers and educator organizations such as the National Association for the Education of Young Children
- The standards do not determine graduation policies – that is the role of the state
- The standards do not attempt to specify all four years of high school math – that is the role of the state or district



**Evidence that change was needed:** **Left diagram:** Mathematics topics intended at each grade by at least two-thirds of A+ countries. **Right diagram:** Mathematics topics intended at each grade by at least two-thirds of 21 U.S. states prior to CCSS. Open squares denote two-thirds of countries or states; grey squares denote 83% of countries or states; and black squares indicate 100% of countries or states. (William Schmidt, Richard Houang, and Leland Cogan, "A Coherent Curriculum: The Case of Mathematics," *American Educator*, Summer 2002)

## How are the CCSSM Different (and the same) as Previous Standards?

- Rededicate the elementary school years to arithmetic. This is consistent with the practice of high performing countries such as Singapore
- Arithmetic is like the handle of a wrench: grasped firmly, it gives you leverage. Students who don't have the right foundation in arithmetic will struggle in later grades.
- Peer-reviewed research shows that the CCSSM are closely aligned to the standards of high performing countries – no previous state standards were as close a match

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## STUDENT ACHIEVEMENT PARTNERS

- The Common Core accurately portrays math as a combination of three things: mastery of procedure, understanding of math concepts, and the ability to apply math to solve problems
- The standards require students to know math facts from memory
- The standards require fluency in the standard algorithm for all four basic operations (addition, subtraction, multiplication and division) something that wasn't required by most states' previous standards
- Concepts matter because students who cannot think mathematically will typically sooner or later forget how to solve
- Students will perform better if they think about mathematics conceptually, but memorization of math facts and strategies is still an important part of math education
- Parents should use the standards to advocate for better curricula and materials in their schools. For example, if a parent sees computation, memorization or fluency missing in their children's work, they should refer to the standards and ask why those elements are not receiving attention.
- As states revise the standards as part of regular review and revision cycles, it is important that they preserve some of the most critical elements of the CCSS:
  - Emphasis on arithmetic in the early grades
  - Maintain the key shifts in instructional practice:
    - **Focus** strongly where the Standards focus
    - **Coherence**: Think across grades, and link to major topics within grades
    - **Rigor**: In major topics, pursue with equal intensity: conceptual understanding, procedural skill and fluency, and application

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