



Frequently Asked Questions About the Common Core State Standards for Mathematics

Mathematics Common Core Coalition

<http://tinyurl.com/MathCCCoalition>

Do the Common Core State Standards for Mathematics include all of the important topics at the appropriate grades to prepare students for college and careers?

Are the Common Core State Standards for Mathematics based in research and will they prepare students to be successful?

- ✗ **Myth:** The Common Core State Standards for Mathematics are not based on research about how students learn mathematics.
- ✓ **Fact:** The foundation for The Common Core State Standards for Mathematics are the series of National Research Council Reports summarizing research about mathematics education (e.g., NRC, 2001¹; NRC, 2005²; and NRC, 2009³), the best of previous state standards, and a large body of evidence taken from international comparisons. The learning progressions in the Common Core State Standards are summarized in a series of Progressions documents that include important mathematical issues and aspects of what is known about how students learn particular mathematics content. They were written by leading researchers in the field drawing from educational and cognitive science research.

¹ National Research Council. (2001). *Adding it up: Helping children learn mathematics*. J. Kilpatrick, J. Swafford, and B. Findell (Eds.). Mathematics Learning Study Committee, Center for Education, Division of Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

² National Research Council. (2005). *How Students Learn: Mathematics in the Classroom*. Committee on *How People Learn*, A Targeted Report for Teachers, M.S. Donovan and J.D. Bransford, Editors. Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

³ National Research Council. (2009). *Mathematics Learning in Early Childhood: Paths Toward Excellence and Equity*. Committee on Early Childhood Mathematics, Christopher T. Cross, Taniesha A. Woods, and Heidi Schweingruber, Editors. Center for Education, Division of Behavioral and Social Sciences and Education.

Washington, DC: The National Academies Press.

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Frequently Asked Questions About CCSSM

- ✗ **Myth:** The Common Core State Standards for Mathematics lower expectations for what students must learn.
- ✓ **Fact:** The Common Core State Standards for Mathematics are more rigorous than previous standards in most states because they expect students to acquire conceptual understanding as well as procedural skills, and to apply both to solve a wide range of real world and mathematical problems. The content progressions in the Common Core State Standards-Mathematics are coherent and are based on the best and highest US state standards, the expectations of other high performing countries around the world, and available research on how students learn mathematics. When states had individual standards, different states taught different topics at different grade levels. Using the Common Core State Standards as a consensus means that some topics may appear in different grades, when compared to previous state-based standards. This situation is unavoidable. What is important is that the progression in the Common Core State Standards is mathematically coherent and leads to college and career readiness at an internationally competitive level.

- ✗ **Myth:** The Common Core State Standards for Mathematics do not emphasize basic skills.
- ✓ **Fact:** The Common Core State Standards for Mathematics call for a balance among conceptual understanding, procedural skills, and applications. Students are expected to execute skills efficiently and reliably, understand why procedures work, and apply the skills appropriately to solve problems. In addition, the standards set explicit expectations for proficiency in particular basic skills; e.g. students should know their basic addition and subtraction facts by the end of grade 2 and basic multiplication facts by the end of grade 3. Students are also expected to add, subtract, multiply and divide multi-digit numbers fluently--that is, accurately, reliably and efficiently—by the end of grades 4, 5 and 6 respectively. These grade placements provide ample time for students to both learn the procedures and understand their underlying mathematical concepts and relationships.

- ✗ **Myth:** The Common Core State Standards for Mathematics do not challenge more interested, capable students.
- ✓ **Fact:** The Common Core State Standards for Mathematics set more rigorous expectations for all students, including those who are talented in mathematics, through their emphasis on conceptual understanding, problem solving, and the standards for mathematical practice. For high school, they also contain additional expectations for students interested in STEM careers (the + standards). The standards are not a curriculum; districts and states are able to design “accelerated” pathways for students who are able to grasp mathematical ideas more quickly.

- ✗ **Myth:** The Common Core State Standards for Mathematics are not developmentally appropriate for early childhood students (K-3).

- ✓ **Fact:** The Common Core State Standards for Mathematics in grades K-3 directly reflect mathematics learning progressions described in the National Research Council's report, *Mathematics Learning in Early Childhood: Pathways Toward Excellence and Equity*¹ (2009). This report is a comprehensive synthesis of research on learning and teaching mathematics in the early grades.
- ✗ **Myth:** The Common Core State Standards for Mathematics do not prepare students to succeed in high school algebra courses.
- ✓ **Fact:** The Common Core State Standards for Mathematics increases the algebra expectations by including significant algebra content in grades 6, 7, and 8 for all students. For example students begin to manipulate algebraic expressions in grade 6 and study linear functions and equations (including systems of equations) in grade 8.
- ✗ **Myth:** The Common Core State Standards for Mathematics do not allow students to take accelerated course sequences that culminate with calculus in high school.
- ✓ **Fact:** The Common Core State Standards for Mathematics build the foundational concepts and skills to prepare all students for take advanced mathematics courses. The ways in which the standards are organized into courses and course sequences are left to individual schools, districts and/or states. This includes organizing courses in ways that support acceleration.

What are the Common Core State Standards for Mathematics?

- ✗ **Myth:** The Common Core State Standards for Mathematics are a national curriculum that is required by the federal government.
- ✓ **Fact:** The Common Core State Standards Initiative is a *state-led* effort that established a single set of clear educational standards for kindergarten through 12th grade in English language arts and mathematics. Beginning in 2010, states voted individually and voluntarily to adopt these standards. As of May 2013, 45 states have voted to adopt these standards. These standards describe what students should know and be able to do to be prepared to enter credit bearing entry courses in two- or four- year college programs or enter the workforce.
- ✓ **Fact:** Standards are not the same as curriculum and instruction.
 - Standards are targets that describe what students need to know and be able to do at the end of each grade or high school;
 - Curriculum describes how teachers should organize and sequence content standards into units of study; and
 - Instruction describes the actions of teachers and students working to learn the standards.

Standards do not establish a curriculum or specific lessons. Curriculum and

instructional decisions are still determined by local school districts and teachers and are not part of the Common Core State Standards.

Where did the Common Core State Standards come from?

- ✗ **Myth:** The federal government developed the Common Core State Standards.
- ✓ **Fact:** The federal government played NO role in the development of the Common Core State Standards. The National Governor’s Association (NGA) and the Council of State Chief School Officers (CCSSO) initiated and led the development of the Common Core Standards. The standards were written with input from a large number of stake holder groups including teachers and administrators, academics, state and district personnel and informed by public comments.

Specifically, many mathematics educators had opportunities to inform the development of the Common Core State Standards for Mathematics. In addition to the three lead authors, William McCallum, Phil Daro, and Jason Zimba, a 51-person Work Team and a 19-person Feedback Group, including teachers, mathematics education researchers, and mathematicians, participated in the development process. (See <http://www.nctm.org/standards/mathcommoncore/>.) The lead writers also commissioned essays on mathematics education research that informed the writing of the standards. Furthermore, project staff members were continually comparing the various drafts with high-quality state and international standards.

- ✗ **Myth:** No teachers were involved in writing the standards.
- ✓ **Fact:** Teachers, parents, school administrators and experts from across the country, together with state leaders, provided input into the development of the standards. Teachers were part of the original Work Team that drafted the standards, along with mathematics education researchers, mathematicians, state department personnel, policy makers, and representatives from testing organizations. Teachers were also involved throughout the feedback process.
- ✓ Because CCSS was a “state led initiative” of NGA and CCSSO, each of the 48 participating states was invited to provide feedback on three drafts (November 2009, January, and February of 2010) in addition to the March 2010 public review draft. Many states convened feedback teams including teachers to provide this feedback. In addition, The National Education Association (NEA), American Federation of Teachers (AFT), National Council of Teachers of Mathematics (NCTM), and National Council of Teachers of English (NCTE), among other organizations, were instrumental in bringing together teachers to provide specific, constructive feedback on the standards. The writing team received over 10,000 comments through this review process. This feedback produced significant changes in the Common Core State Standards from the initial draft in fall, 2009 to the final version released in June 2010.

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What are the advantages of common standards across states?

- × **Myth:** Each state best understands what its students and communities need; therefore, individual states are better positioned to write their own standards.
- ✓ **Fact:** High standards that are consistent across states provide teachers, parents, and students with a set of clear expectations that are aligned to the expectations in college and careers and give all students more equal high quality learning opportunities and allow parents to really know how well their child is performing. Unlike previous state standards, which were unique to every state in the country, the Common Core State Standards enable and encourage collaboration between states and universities. These collaborations are already producing a range of money-saving, higher quality educational resources and policies including:
 - the development of textbooks, digital media, and other teaching materials aligned to the common standards;
 - the development and implementation of common comprehensive assessment systems to measure student performance annually that will replace existing state testing systems; and
 - the development and cataloging of research on how students learn organized around the common standards, making access to critical information for teachers and parents much easier.

Common expectations across states also provide the basis for a more coherent educational experience for students whose families move from one state to another because they are members of the military, experience job relocation, or have other family needs.

- × **Myth:** States did not need to change their standards. Their previous standards were good enough to prepare students for college and careers.
- ✓ **Fact:** Current performance of U.S. students is not strong enough to keep up with the changing economy—far too many individuals lack the education to get a job that pays a livable wage, and far too many well-paying jobs go unfilled. More rigorous standards, such as the Common Core Standards, are needed to address the following issues:
 - Only 42 percent of fourth-graders and 36 percent of eighth-graders scored proficient or advanced in mathematics on the 2013 National Assessment of Educational Progress, the Nation’s Report Card.
 - U.S. 15-year-olds ranked 26th in mathematics out of the 34 countries that participated in the 2012 Programme for International Student Assessment (PISA), which measures students’ capacity to formulate, employ, and interpret mathematics in a variety of real-world contexts.
 - States, students, and their families are spending an increasing amount on remedial classes in 2- and 4-year postsecondary institutions. Unfortunately,

the research is finding a higher likelihood that as a student spends more time in remedial classes, their likelihood of graduating decreases.

What guidance do the Common Core State Standards provide to teachers?

- ✗ **Myth:** Having common standards will strip away creativity and innovation from schools.
- ✓ **Fact:** The Common Core State Standards are a shared set of expectations for the mathematical knowledge and skills students need to ultimately be prepared to enter college or begin careers. The standards establish what students need to learn by the end of each grade K – 8 and high school. They DO NOT dictate how teachers should teach or how the content should be organized for any particular year of school. They ARE NOT a curriculum. Teachers must continue to devise lesson plans and tailor instruction to meet the needs of the students in their classrooms. These standards will focus, not inhibit, teaching and learning in US schools and will focus creativity, innovation, and competition toward increasing student achievement.

How will Common Core State Standards affect State tests?

- ✗ **Myth:** States will be required to use a single national test.
- ✓ **Fact:** States that have adopted the Common Core State Standards will need to transition to a new assessment system that is aligned with the standards. Two consortia of states are developing common assessments – the Partnership for Assessment of Readiness for College and Career (PARCC) and the Smarter Balanced Assessment Consortium (Smarter Balanced). The resulting assessments will be available in the 2014-2015 school year. However, states are not required to participate in either of the assessment consortia and other commercially developed assessments are becoming available.

What student data will be collected?

- ✗ **Myth:** The new computer-based tests will collect vast amounts of data about each test-taker in addition to their performance on mathematics test items.
- ✓ **Fact:** The Higher Education Opportunity Act of 2008, No Child Left Behind law amending the Elementary and Secondary Education Act, the Education Reform Sciences Act of 2002, and the Individuals with Disabilities Education Act prohibit the creation of a federal database with students' personally identifiable information. The federal government does not have access to the student-level information housed in state data systems. Adoption of the Common Core State Standards, and/or

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participation in the related assessment consortia, does not authorize the sharing of student data among states or with the federal government. Although students will be taking some parts of the Common Core Assessments on a computer, the purpose is to assess students' mathematical knowledge. Computer-testing provides new ways for students to demonstrate their mathematical knowledge, thus giving more accurate information about what students know and are able to do.

What is the appropriate way to cite the Common Core State Standards?

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