Instructional Shifts for Mathematics

Common Core State Standards





Focus strongly on the topics emphasized in the standards

Focus: The standards call for a greater focus in mathematics. Rather than racing to cover topics in today's mile-wide, inch-deep curriculum, teachers use the power of the eraser and significantly narrow and deepen the way time and energy is spent in the mathematics classroom. They focus deeply on the major work* of each grade so that students can gain strong foundations—solid conceptual understanding, a high degree of procedural skill and fluency, and the ability to apply the mathematics they know to solve problems inside and outside the mathematics classroom.

Coherence: **Think** across grades, and **link** to major topics* within grades

- Thinking across grades: The standards are designed around coherent progressions from grade to grade. Principals and teachers carefully connect learning across grades so that students can build new understanding onto foundations developed in previous years. Teachers can begin to count on students having a deep conceptual understanding of core content and build on it. Each standard is not a new event, but an extension of previous learning.
- Linking to major topics: Instead of allowing additional or supporting topics to detract from the focus of the grade, these topics can serve the grade level focus. For example, instead of data displays as an end in themselves, they support grade-level word problems

Rigor: In major topics* pursue:

- Conceptual understanding;
- Procedural skill and fluency; and
- **Application** with equal intensity
- Conceptual understanding: The standards call for conceptual understanding
 of key concepts, such as place value and ratios. Teachers support students'
 ability to access concepts from a number of perspectives so that students are
 able to see mathematics as more than a set of mnemonics or discrete
 procedures.
- Procedural skill and fluency: The standards call for speed and accuracy in calculation. Teachers structure class time and/or homework for students to practice core functions, such as single-digit multiplication, so that students have access to more complex concepts and procedures.
- Application: The standards call for students to use mathematics flexibly for applications. Teachers provide opportunities for students to apply mathematics in context. Teachers in content areas outside of mathematics, particularly science, ensure that students are using mathematics to make meaning of and access content.

Grade *Major Topics that Support Expectations of Fluency and Conceptual Understanding

- K-2 Addition and subtraction concepts, skills, problem solving, and place value
- 3-5 Multiplication and division of whole number sand fractions concepts, skills, and problem solving
- Ratios and proportional reasoning, early expressions and equations
- Rations and proportional reasoning, arithmetic of rational numbers
- 8 Linear algebra, linear functions