

Handout: Changes in Mathematics

Change 1: Focus	<p>The 2007 Standards call for a greater focus in mathematics. This shift is the result of recommendations from international studies identifying American math curriculums as a "mile wide" and an "inch deep."</p> <p>This shift requires that teachers narrow the scope of content and focus deeply on the major topics of each grade level. These topics were largely determined by the NCTM Curriculum Focal Points.</p>
Change 2: Coherence	<p>Coherence across grades: The Standards are designed to be coherent progressions across the grades. The standards and benchmarks are carefully connected across grades so that students can build new understanding onto foundations built in previous years.</p> <p>Coherence within a grade level: The major topics identified in the NCTM Curriculum Focal Points form the basis of the coherence within a grade. Rather than allowing additional or supporting topics to detract from the focus of the grade, these concepts are used to support the major topics within a grade.</p>
Change 3: Rigor	<p>Rigor includes both conceptual understanding and procedural fluency.</p> <p>Conceptual understanding: The Standards call for conceptual understanding of key concepts. Students must be able to access concepts from a number of perspectives so that they are able to see math as more than a set of rules and procedures.</p> <p>Procedural fluency: Time limits are not a part of the statewide MCA tests. If a student possesses fluency with a mathematical idea or skill, then that student can employ the idea or skill comfortably and automatically. Just as a fluent language speaker might speak at different speeds, students who possess fluency with mathematics might operate at different speeds. Efficiency implies that students use methods and approaches to problems that avoid detours and unnecessary repetition. For example, even though it is possible to perform the multiplication problem 382×48 by using repeated addition, other algorithms for multi-digit multiplication are much more efficient.</p>