

# Mathematics – Model Curriculum Overview

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## Standards, Model Curriculum, and Assessments

The development of the Model Curriculum is a requirement of the comprehensive educational system identified in Ohio House Bill 1. The system includes revised content standards, a model curriculum and an aligned assessment system.

**Revised Standards:** For mathematics and English language arts, Ohio joined the Common Core State Standards Initiative, a partnership of 48 states and 3 territories, led by the Council of Chief State School Officers (CCSSO) and the National Governors Association. The final drafts of the Common Core State Standards (CCSS) for mathematics and English language arts (see [www.corestandards.org](http://www.corestandards.org)) were adopted by Ohio’s State Board of Education on June 7, 2010.

**Model Curriculum:** The purpose of Ohio’s model curriculum is to provide clarity to the standards, the foundation for aligned assessments, and guidelines to assist educators in implementing the standards. Throughout the development of the standards and the model curriculum, the Ohio Department of Education (ODE) has involved educators from around the state at all levels, Pre-K–16.

**Aligned Assessments:** Ohio is participating in two multi-state consortia that have received grants to develop assessments aligned to the CCSS: the Smarter Balanced Assessment Consortium ([SBAC](http://www.smarterbalanced.org)) and the Partnership for the Assessment of Readiness for College and Careers ([PARCC](http://www.parc.org)). Ohio will choose one of these consortia before the new aligned assessments become operational in 2014-2015.

## Components of the Model Curriculum

The ODE began developing the model curriculum during the summer of 2010. For each cluster of standards, in each grade (K-8) or Conceptual Category (high school), the model curriculum for mathematics will contain the following sections:

**Content Elaborations (in development):** These sections will provide additional clarification and examples to aid in the understanding of the standards. To support shared interpretations across states, content elaborations are being developed through multi-state partnerships organized by CCSSO and other national organizations. This information will be included as it is developed.

**Expectations for Learning (in development):** As the framework for the assessments, these sections will be developed by the CCSS assessment consortia ([SBAC](http://www.smarterbalanced.org) and [PARCC](http://www.parc.org)). Ohio is currently participating in both consortia and has input into the development of the frameworks. This information will be included as it is developed.

**Instructional Strategies and Resources:** Ideas for these sections were influenced by teacher team meetings held across the state during the summer and fall of 2010. More than 500 K-12 mathematics teachers participated in these meetings. The instructional strategies and resource section is designed to be fluid and improving over time, through additional research and input from the field. These sections will contain the following subsections:

- **Instructional Strategies:** descriptions of effective and promising strategies for engaging students in observation, exploration and problem solving targeted to the concepts and skills in the cluster of standards.

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- **Instructional Resources and Tools:** models, manipulatives, tasks, online tools and other resources to help students learn the concepts and skills in the standards. Many resources are drawn from the extensive collection at the Ohio Resource Center (ORC), [www.ohiorc.org](http://www.ohiorc.org).
- **Common Misconceptions:** descriptions of common misconceptions as well as strategies for overcoming them.
- **Differentiation:** ideas for adapting instruction to meet the needs of all students.
- **Connections:** descriptions of relationships between the cluster of standards and other standards in earlier or later grades or within the same grade.

*Note that in the model curriculum, instructional strategies and resources target at cluster of specific standards. During the teacher team meetings, several broad categories of instructional strategies were identified, such as attention to vocabulary and mathematical practices, as well as use of manipulatives, technology, children’s literature, and online resources. Descriptions of these general strategies are under consideration.*

## Review of the Draft Model Curriculum

During the fall review of the Model Curriculum, examples will be placed on the ODE website for review and feedback. In December, additional examples will be posted. Please return to this site in December to review and provide feedback on additional draft examples. Please focus your review on the type of information provided in the instructional strategies and resources section of the model curriculum.

## Model Curriculum Examples

The November 2010 draft model curriculum includes examples in each grade (K-8) and conceptual category (high school). The examples are as follows:

- Kindergarten: Geometry
- Grade 1: Geometry
- Grade 2: Geometry
- Grade 3: Operations and Algebraic Thinking
- Grade 4: Operations and Algebraic Thinking
- Grade 5: Number and Operations – Fractions
- Grade 6: Geometry
- Grade 6: Ratio and Proportional Relationships
- Grade 7: Expressions and Equations
- Grade 8: Geometry
- Number and Quantity: The Complex Number System
- Algebra: Seeing Structure in Expressions
- Functions: Interpreting Functions
- Geometry: Congruence
- Statistics and Probability: Interpreting Data