

Common Core and Mathematics: Grades 9–12

Welcome to Common Core and Mathematics: Grades 9–12. In this course, you will not only learn what the Common Core State Standards for Mathematics (CCSSM) are, but you will also go beyond these basics to take a detailed look at the standards for content and for practice. You will investigate each of the six conceptual categories and review relevant strategies, tools, and resources.

By the end of this course, you will have an understanding of these topics, along with some ideas and tools on how to implement the CCSSM in your classroom.

Course Objectives

After completing this course, you should be able to

Module 1

- Recognize the rationale and the advantages of having a common set of standards across the states.
- Examine the sequence of standards and the rationale behind it.

Module 2

- Understand the structure and organization of the Common Core State Standards for Mathematics, including the conceptual categories, domains, clusters, and standards.
- Connect the five building blocks of mathematics with the conceptual categories.
- Recognize the appropriate usage of the various types of representation.

Module 3

- Recognize the eight standards of mathematical practice and how including all standards in the curriculum increases the chance that students will be successful in math.
- Adapt strategies to develop the eight standards for mathematical practice in your classroom.

Module 4

- Interpret the intended outcomes for the conceptual category number and quantity in the Common Core.
- Develop instructional strategies to encourage mathematical reasoning, to make math more meaningful to students, and to encourage deeper understanding of number and quantity.

Module 5

- Interpret the intended outcomes for the conceptual categories of algebra and functions in the Common Core.
- Develop instructional strategies to encourage mathematical reasoning, to make math more meaningful to students, and to encourage deeper understanding of algebra and functions.

Module 6

- Interpret the intended outcomes for the conceptual categories geometry, statistics, and probability in the Common Core.
- Develop instructional strategies using manipulatives and technology to encourage mathematical reasoning, to make math more meaningful to students, and to encourage deeper understanding of geometry and statistics and probability.

Course Syllabus

Module 1	Introducing the Common Core State Standards for Mathematics Module Welcome <ul style="list-style-type: none">• Media: Common Core 101• Reading: The Common Core State Standards for Mathematics• Video: Writing the Math Standards• Extend Your Learning: Creating a Common Core for High School Math Check for Understanding <ul style="list-style-type: none">• Application: CCSSM—A First Look Module Journal
Module 2	Standards for Mathematical Content Module Welcome <ul style="list-style-type: none">• Reading: Standards for Mathematical Content• Video: Promoting Creativity and Innovation in the Classroom• Reading: Visual Representation• Video: Common Core State Standards—High School Check for Understanding <ul style="list-style-type: none">• Application: Visual Representation Module Journal

Module 3	Eight Standards for Mathematical Practice Module Welcome <ul style="list-style-type: none">• Reading: Standards for Mathematical Practice—An Overview• Video: The Importance of Mathematical Practices• Reading: Standards for Mathematical Practice: Standards 1–4 Check for Understanding <ul style="list-style-type: none">• Reading: Standards for Mathematical Practice: Standards 5–8• Video: 21st Century Skills• Application: The Eight Standards for Mathematical Practice Module Journal
Module 4	Number and Quantity Module Welcome <ul style="list-style-type: none">• Video: Math Curriculum Makeover• Reading: Number and Quantity• Video: The Power of Formative Assessment to Advance Learning• Reading: <i>Educational Leadership: A Process—Not a Test</i>• Extend Your Learning: One State’s Approach Check for Understanding <ul style="list-style-type: none">• Application: Practice Standards 1 and 2 in Your Classroom Module Journal

<p>Module 5</p>	<p>Algebra and Functions</p> <p>Module Welcome</p> <ul style="list-style-type: none"> • Video: Dan Meyer on Real-World Math • Reading: Algebra and Functions • Video: Gathering Momentum for Algebra • Reading: <i>Educational Leadership</i>—Teaching the iGeneration • Video: Enhancing Learning with Technology • Extend Your Learning: <i>Educational Leadership</i>—How Mathematics Counts <p>Check for Understanding</p> <ul style="list-style-type: none"> • Application: Practice Standards 4 and 5 in Your Classroom <p>Module Journal</p>
<p>Module 6</p>	<p>Geometry, Statistics, and Probability</p> <p>Module Welcome</p> <ul style="list-style-type: none"> • Reading: Geometry • Video: Arthur Benjamin’s Formula for Changing Math Education • Reading: Statistics and Probability • Video: Actively Involving Students • Reading: <i>Educational Leadership</i>—Numeracy: The New Literacy for a Data-Drenched Society • Extend Your Learning: <i>Educational Leadership</i>—Adventures with Cell Phones <p>Check for Understanding</p> <ul style="list-style-type: none"> • Application: Practice Standards 3 and 6 in Your Classroom <p>Module Journal</p>

Resources

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