

Common Core and Mathematics: Grades K-5

In the Common Core and Mathematics: Grades K-5, you will explore the Common Core State Standards for Mathematics (CCSSM). This course will provide information on the background of the new standards as well as details on the standards for content and the standards for practice. Additionally, the course covers the six domains for grades K-5 including strategies, ideas for assessment, and common misconceptions. 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 nation.
- 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 grade-level domains.
- 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 topics of counting and cardinality and operations and algebraic thinking based on the Common Core.
- Develop instructional strategies using manipulatives (objects or virtual) to encourage mathematical reasoning, to make math more meaningful to students, and to encourage deeper understanding of counting and cardinality and operations and algebraic thinking.

Module 5

- Interpret the intended outcomes for the domains of numbers and operations in base ten and numbers and operations-fractions based on 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 numbers and operations in base ten and fractions.

Module 6

- Interpret the intended outcomes for the domains of geometry and measurement and data based on the Common Core.
- Develop instructional strategies using manipulatives or technology to encourage mathematical reasoning, to make math more meaningful to students, and to encourage deeper understanding of geometry and measurement and data.

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• Video: The Importance of Mathematics Progressions 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: <i>Educational Leadership</i>—In Defense of Mathematical Foundations• Reading: Visual Representation Check for Understanding <ul style="list-style-type: none">• Application: Visual Representation Module Journal

Module 3	Eight Standards of Mathematical Practice Module Welcome <ul style="list-style-type: none">• Reading: Standards for Mathematical Practice – An Overview• Video: Mathematics Fluency – A Balanced Approach• 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	Counting & Cardinality and Operations & Algebraic Thinking Module Welcome <ul style="list-style-type: none">• Video: Gathering Momentum for Algebra• Reading: Counting & Cardinality and Operations & Algebraic Thinking• Video: The Power of Formative Assessment to Advance Learning• Reading: <i>Educational Leadership</i>—Singapore Math – Simple or Complex?• Video: Math Curriculum Makeover Check for Understanding <ul style="list-style-type: none">• Application: Practice Standards 1 and 2 in Your Classroom Module Journal

Module 5	Numbers & Operations in Base Ten and Numbers & Operations—Fractions Module Welcome <ul style="list-style-type: none">• Reading: Numbers & Operations in Base Ten and Numbers & Operations—Fractions• Media: Tutorials for Using Manipulatives• Video: Collaboration and Project-Based Learning• Reading: <i>Educational Leadership</i>—Teaching the iGeneration Check for Understanding <ul style="list-style-type: none">• Application: Practice Standards 4 and 5 in Your Classroom Module Journal
Module 6	Geometry and Measurement & Data Module Welcome <ul style="list-style-type: none">• Reading: Geometry and Measurement & Data• Video: Brain Compatible Learning: Math Strategies• Reading: <i>Educational Leadership</i>—Thinking is Literacy, Literacy Thinking• Video: Teaching Critical Thinking• Check for Understanding• Application: Practice Standards 3 and 6 in Your Classroom Module Journal

Resources

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