

# College Preparatory Mathematics

{ How does it align to CCSS and Math Best  
Practices?

CPM hasn't changed  
the look of math in the  
classroom,

{ Common Core State Standards has.

Standards are clear on the type of learning students need to be college and career ready. Teachers across the state are collaborating to use a variety of materials to deliver math instruction.

**CPM is a tool used to deliver math instruction.**

- ↳ Hillsboro
- ↳ Salem-Keizer
- ↳ Eugene

# Districts across Oregon using CPM materials

↳ 6<sup>th</sup> grade, middle  
school and high school  
teachers




**Who helped choose CPM to  
be adopted by HSD?**

- ⌘ 1. Students learn ideas more deeply when they discuss ideas with classmates.
- ⌘ 2. Students learn ideas more usefully for other arenas when they learn by attacking problems—ideally from the real world.
- ⌘ 3. Students learn ideas more permanently when they are required to engage and re-engage with the ideas for months or even years.

## 2013 Research that supports the Principles of the CPM Educational Program

⌘ The standards for Mathematical Practice are a significant focus of CCSS. They are a set of eight practices that describe the thinking processes, habits of mind, and dispositions that students need to develop a deep, flexible, and enduring understanding of mathematics.

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1. Make sense of problems and persevere in solving them.
  2. Reason abstractly and quantitatively
  3. Construct viable arguments and critique the reasoning of others.
  4. Model mathematics
  5. Use appropriate tools strategically
  6. Attend to precision
  7. Look for and make use of structure
  8. Look for and express regularity in repeated reasoning.

# Mathematical Practices

The CPM curriculum since its inception has been based on three principles of course design that are based solidly on the methodological research in teaching mathematics.

# Mathematical Practices



Students learn best engaged in inquiry that leads to deep conceptual understanding of the underlying mathematics, exploiting each others' insights, and using distributed learning to increase retention and transfer of knowledge.

The CPM Connections series integrates basic skills and procedures with conceptual understanding, encouraging students to understand ideas, see relationships between them, and apply mathematical principles to complex problems

Students are held responsible for high academic rigor, analysis, and critical thinking, and communicate their mathematical findings in writing or in oral presentations in a clear and convincing manner.

# Principles of Course Design

The CPM Core Connections series (2013) is the second edition of the original Connections series that was prepared to meet the CCSS content standards sequence.

{ The mathematical practices are embedded in the lessons of these courses.

CPM Core Connections, Course 3 Lesson ### Title	Mathematical Practice							
	1	2	3	4	5	6	7	8
2.1.7 Simplifying and Recording Work		xx		x	x		x	
2.1.8 Using Algebra Tiles to Solve for $x$		xx		x	x		x	
3.1.2 Tables, Graphs, and Rules to Make Predictions	xx	x	x	xx	xx		xx	xx
3.1.3 Graphing Calculator and Identifying Solutions	x	x	x		xx		xx	xx
3.1.4 Completing Tables and Drawing Graphs	xx		xx	x		x		
4.1.2 Seeing Growth in Different Representations	x		x	xx			x	
4.1.5 Checking the Connections	x	x	x				xx	
5.2.2 Writing Rules from Word Problems	xx	xx	x	xx	x			
5.3 Mid-Course Reflection Activities		x	xx	xx	x	x	x	
6.1.1 Rigid Transformations	x	x	x		x		xx	
6.2.2 Dilations and Similar Figures		xx	x	x			x	x
7.2.3 Slope in Different Representations	x		x	x		x	xx	x
7.2.5 Proportional Equations	x	x	x	x	x		x	x
7.3.2 Describing Association Fully	x	x		xx	x	x		
8.2.2 Exponent Rules		x	x				x	xx
8.3.1 Functions in Graphs and Tables	xx		x	x			x	
9.1.2 Finding Unknown Angles in Triangles	x	xx	x	x	x	x		
9.2.1 Side Lengths and Triangles	x	xx	x	x	x	xx	x	
10.2.2 Surface Area and Volume of a Cylinder	x	x		xx			x	x

A few examples of the integration of CCSS practices into CPM Core Connections 2

All the lessons in CPM Core Connections, Course 1-3 integrate the CCSS Standards for Mathematical Practice. CPM does not treat the CCSS Standards for Mathematical Practice as an occasional activity, nor does it simply tack them onto the lessons.

## Chapter 2 Teacher Guide

Section	Lesson	Lesson Objectives	CCSS Standards
2.1	2.1.1	Fraction-to-Decimal Conversions	7.NS.2d
	2.1.2	Rewriting Decimals as Fractions	7.NS.2d
2.2	2.2.1	Composing Integers	Preparation for 7.NS.1d in Lesson 2.2.2
	2.2.2	Adding Integers and Rational Numbers	7.RP.2d, 7.NS.1b, 7.NS.1d
	2.2.3	More Addition of Integers and Rational Numbers	7.RP.2d, 7.NS.1b, 7.NS.1d
	2.2.4	Multiplication as Repeated Addition	7.NS.2a
	2.2.5	Multiplication of Portions	7.NS.1b
	2.2.6	Multiplying Mixed Numbers	7.NS.2a

⌘ Math materials are taught using the Common Core State Standards which emphasizes the instruction to be taught using the mathematical practices. CPM has not changed our way of teaching math, CCSS has.

**Why does math instruction look different from the past?**

& Absolutely!

**Are there multiple ways to  
teach each math practice?**

⌘ Common Core math standards are better, and more challenging than many of the state standards they're replacing. And that means that teachers, students and parents will all be working a little harder, to make sure the math adds up.

**Why are my kids struggling  
in math now?**



⌘ High school teachers on the Math Study Team agreed that these materials support the implementation of common core. CPM allows for the delivery of more rigorous standards and the types of real-world math skills kids need to succeed in high school and graduate prepared for college-level math. This adoption took two years as the Math Study Team wanted to find the best resource for our students. During our community night parents also supported this program which in turn lead us to present it to the school board where it was approved.

**How was this resource adopted? What steps did the district go through?**

{ Professional Practice

& Instructional  
strategies

& Materials

& Professional  
Learning  
Communities

{ Students

& Our teachers are  
committed to  
finding ways to  
meet the needs of all  
of our students

**In Hillsboro we provide...**