"Mega-Meeting"

November 30, 2010

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Elementary Mathematics

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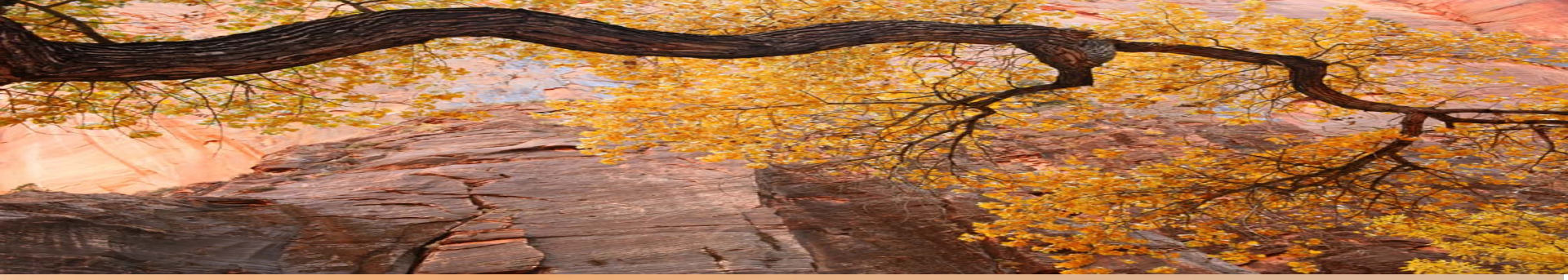
Secondary Mathematics



It’s NOT a National Curriculum!

Mathematics Implementation Schedule

	K	1	2	3	4	5	6	7	8	9	10	11	
2010-2011	1. Decisions on additions to standards. 2. Mapping: Develop curriculum framework 3. Ancillary materials & information. 4. Course Development 5. Performance Expectations 6. Credit and Graduation Pathways 7. Interventions, Advancement, ELL Learners 8. Articulation with IHE. 9. Spring: Public comment and adopt new core curriculum												CRT
2011-2012	1. Invited Core Academy Focused on Mathematics in grades 6 and 9. 2. Begin PD 6 & 9 3. Continue design activities. 4. Spring: Public comment and adoption of new core curriculum						Professional Development and Implementation			Professional Development and Implementation			CRT
2012-2013	Professional Development and Implementation												CRT
2013-2014													CRT/Pilot
2014-2015													Operational Assessment

Courses

K-8th Grade Mathematics

Secondary I-Algebra/Geometry

Secondary II-Algebra/Geometry

Secondary III-Algebra 2

Honors Courses

- 7th Grade Mathematics Honors
- 8th Grade Mathematics Honors

Depth and Additional Topics

- Secondary I-Algebra/Geometry Honors
- Secondary II-Algebra/Geometry Honors
- Secondary III-Algebra2 Honors

Additional Topics for Calculus Readiness

Students completing the Secondary Honors Series will not require Precalculus

USOE Suggested Student Trajectories

Student's Grade Level in 2010	2010-2011	2011-2012	2012-2013	2013-2014 Pilot Test	2014-2015 Operational Test	2015 -2016
K	Kinder Math	1st Grade Math	CCSS2	CCSS3	CCCSS4	CCSS5
1	1st Grade Math	2nd Grade Math	CCSS3	CCSS4	CCSS5	CCSS6
2	2nd Grade Math	3rd Grade Math	CCSS4	CCSS5	CCSS6	CCSS7
3	3rd Grade Math	4th Grade Math	CCSS5	CCSS6	CCSS7	CCSS8
4	4th Grade Math	5th Grade Math	CCSS6	CCSS7	CCSS8	I (9)
5	5th Grade Math	CCSS6	CCSS7	CCSS8	I (9)	II (10)
6	6th Grade Math	Math 7 or Pre-algebra	CCSS8	I(9)	II(10)	III(11)
	Pre-Algebra	Algebra (7)	Geometry or CCSS8	Algebra 2 or I(9)	Precalculus or II(10)	AP Calculus or Precalculus(11)

Secondary

7	Math 7	Pre-Algebra (8)	CCSSI (9)	CCSSII (10)	CCSSIII (11)	Precalculus, 1050/1060, or Math Elective (12)
	Pre-Algebra	Algebra (8)	CCSSIH(9)	CCSSIIH(10)	CCSSIIIH(11)	Calculus (12)
	Algebra	Geometry (8)	Algebra 2(9)	Precalculus (10)	AP Calculus (11)	AP Stat (12)
8	Pre-Algebra	CCSSI (9)	CCSSII(10)	CCSSIII(11)	Pre-calculus or 1050/1060 (12)	
	Algebra	CCSSIH(9)	CCSSIIH(10)	CCSSIIIH(11)	Calculus (12)	
	Geometry	Algebra 2 (9)	Precalculus (10)	AP Calculus (11)	AP Stat (12)	
9	Algebra A	Algebra B	Geometry	Algebra 2		
	Algebra	Geometry (10)	Algebra 2(11)	Precalculus, 1050/1060, or math elective (12)		
	Geometry	Algebra 2 (10)	Precalculus (11)	AP Calculus (12)		
10	Geometry	Algebra 2(11)	Precalculus, 1050/1060 or math elective(12)			
	Algebra 2	Precalculus (11)	AP Calculus (12)			
11	Geometry	Algebra 2 (12)				
	Algebra 2	Precalculus or 1050(12)				
	Precalculus	AP Calculus (12)				
12	2007 Core					

Mathematics Endorsements: DRAFT

- K-6 ← Elementary
- 7-8 ← Mathematics 2
- Secondary I, II, III
- Secondary IH

  ← Mathematics 3
- Secondary IIH, IIIH ← Mathematics 4

Curriculum Guides

Core Content

Cluster Title: ***Analyze proportional relationships and use them to solve real-world and mathematical problems.***
Standard: Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour.*
Concepts and Skills to Master
• Understand the concept of a unit rate • Know how to express unit rates using multiple representations • Compute a unit rate using fractions

Supports for Teachers

Critical Background Knowledge	
• How to find unit rates (If Eliza drives 400 miles in 8 hours, what is her average rate?) • Division of complex fractions Ex: $\left(\frac{\frac{1}{2}}{\frac{2}{3}}\right)$	
Academic Vocabulary	
complex fraction, unit rate	
Suggested Instructional Strategies	**Resources**
Write given ratios as unit rates. Use grocery store ads to find unit rates for various products. Use ratios of real-life and model figures to determine scale factors.	This is where we would put links to UEN lessons or video examples
Sample Formative Assessment Tasks	
Skill-based Task If the temperature is rising 1/5 degree each ½ hour, what is the increase in temperature expressed as a unit rate?	**Problem Task** John mows 1/3 of a lawn in 10 minutes. Marcia mows ¼ of a lawn in 6 minutes. Who is mowing faster? How much faster?

Elementary Crosswalks

- Available at http://www.schools.utah.gov/curr/Math/elem/UtahElementaryMathematics.htm
- Not a gap analysis
- A guiding document for math leaders and teachers.

Elementary Crosswalks

Domain: Operations and Algebraic Thinking

Cluster: Use the four operations with whole numbers to solve problems.

1. Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.

2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Cluster: Gain familiarity with factors and multiples.

4. Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.

Elementary Crosswalks

Demonstrate multiple ways to represent whole numbers and decimals by using models and symbolic representations.

Identify the place and the value of a given digit in a six-digit numeral, including decimals to hundredths.

Divide regions, lengths, and sets of objects into equal parts using a variety of models and illustrations. (Grade 2 & 3)

Name and write a fraction for represent a portion of a unit whole, length, or set for halves, thirds, (Grade 2) fourths, fifths, sixths, eighths, and tenths.

Identify and represent square numbers using models and symbols.

Write a story problem that relates to a given multiplication or division equation.

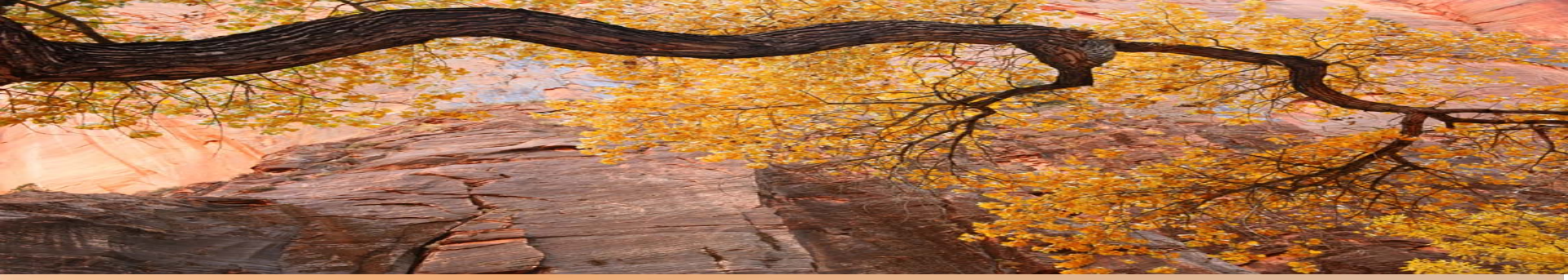
Use the order of operations to evaluate, simplify, and compare mathematical expressions involving the four operations, parentheses (Grade 5), and the symbols <, >, and =. (Grade 3)

Recognize that a symbol represents the same number throughout an equation or expression.

New Vocabulary: Use equation rather than number sentence, multiple, prime, composite, multiplicative and additive comparisons.

Elementary Crosswalks

Color Code Key: Black – Similar to 2007 Utah Math Core
Green – New
Red – Moved to another grade
Blue – Concept is no longer in the elementary core



WHAT SHOULD YOU BE DOING RIGHT NOW?

Working with the Public

- The strongest influence on parents is conversations with the teacher
- Parent nights
- School newsletters
- What concerns will parents have and how will we address them?

Common Core Academy

- Sixth Grade
  - Focus on the mathematical content in the common core.
  - Implementing common core instruction
- Ninth Grade
  - Focus on creating units that are consistent with the common core philosophy
  - Implementing common core instruction