UNIT OVERVIEW

Academic Year: 2014-2015

Site: Stork Elementary

Course Plan: 4th Grade Math

Unit(s): 1-12

Unit 1

Content Cluster: Generalize place value understanding for multi-digit whole numbers.   **Domain:** Number and Operations in Base Ten

UNIT STANDARDS & OBJECTIVES	COMPONENTS		
	1	2	3
4.NBT.1 ✔ Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. *For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division*.			
• † **Obj. 1** Students will generalize place value understanding for multi-digit whole numbers by explaining that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its immediate right.	X		
Mathematical Practice Standards			
• MPS6: Attend to precision.			
• MPS7: Look for and make use of structure.			
4.NBT.2 ✔ Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.			
• † **Obj. 1** Students will generalize place value understanding for multi-digit whole numbers by explaining that each sequence of three digits made by commas is read as hundreds, tens, and ones, followed by the appropriate base-thousand unit (thousand, million, etc.).		X	
• † **Obj. 2** Students will generalize place value understanding for multi-digit whole numbers by reading multi-digit whole base-ten numbers.		X	
• † **Obj. 3** Students will generalize place value understanding for multi-digit whole numbers by reading numbers written using number names.		X	
• † **Obj. 4** Students will generalize place value understanding for multi-digit whole numbers by reading multi-digit whole numbers written in expanded form.		X	
• † **Obj. 5** Students will generalize place value understanding for multi-digit whole numbers by writing multi-digit whole numbers using base-ten numerals.		X	
• † **Obj. 6** Students will generalize place value understanding for multi-digit whole numbers by writing multi-digit whole numbers using number names.		X	
• † **Obj. 7** Students will generalize place value understanding for multi-digit whole numbers by writing multi-digit whole numbers using expanded form.		X	
• † **Obj. 8** Students will generalize place value understanding for multi-digit whole numbers by comparing two multi-			

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UNIT STANDARDS & OBJECTIVES	COMPONENTS		
	1	2	3
digit numbers by lining up the numbers based on meanings of digits in each place and using >, =, or < to record the results of the comparisons.		X	

Mathematical Practice Standards

- MPS6: Attend to precision.

4.NBT.3 ✔ Use place value understanding to round multi-digit whole numbers to any place.

	1	2	3
• † **Obj. 1** Students will generalize place value understanding for multi-digit whole numbers by rounding multi-digit whole numbers to any place.			X

Mathematical Practice Standards

- MPS2: Reason abstractly and quantitatively.

UNIT BIG IDEA/ESSENTIAL QUESTION

None entered.

UNIT PERFORMANCE TASKS

None entered.

UNIT RESOURCES

Textbooks

†MMH California Mathematics Concepts, Skills, and Problem Solving - 4th Grade
- †1-1 Place Value Through Hundred Thousands
- †1-4 Compare Whole Numbers
- †1-2 Place Value Through Millions
- †1-6 Round Whole Numbers

Other Texts

†Ready Common Core Mathematics Instructuion-student book

Other Resources

†Rounding 2 PPT. (Video/Presentation) -
RoundingReview.ppt

†Rounding PPT. (Video/Presentation) -
Rounding No Decimals.ppt

†Place Value PPT. (Video/Presentation) -
Place Value.ppt

UNIT NOTES

None entered.

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Unit 2

Content Cluster: Use place value understanding and properties of operations to perform multi-digit arithmetic. **Domain:** Number and Operations in Base Ten

UNIT STANDARDS & OBJECTIVES	COMPONENTS		
	1	2	3
4.NBT.4 ✔ Fluently add and subtract multi-digit whole numbers using the standard algorithm.			
• † **Obj. 1** Students will use place value understanding and properties of operations to perform multi-digit arithmetic by adding multi-digit whole numbers fluently, using the standard algorithm.	X		
• † **Obj. 2** Students will use place value understanding and properties of operations to perform multi-digit arithmetic by subtracting multi-digit whole numbers fluently, using the standard algorithm.	X		
Mathematical Practice Standards			
• MPS6: Attend to precision.			
4.NBT.5 ✔ Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.			
• † **Obj. 1** Students will use place value understanding and properties of operations to perform multi-digit arithmetic by multiplying a whole number up to four digits by a one-digit whole number, applying strategies based on place value, and explaining the calculation using equations, arrays, and/or area models.		X	
• † **Obj. 2** Students will use place value understanding and properties of operations to perform multi-digit arithmetic by multiplying a whole number up to four digits by a one-digit whole number, applying strategies based on properties of operations, and explaining the calculation using equations, arrays, and/or area models.		X	
• † **Obj. 3** Students will use place value understanding and properties of operations to perform multi-digit arithmetic by multiplying 2 two-digit whole numbers, applying strategies based on place value, and explaining the calculation using equations, arrays, and/or area models.		X	
• † **Obj. 4** Students will use place value understanding and properties of operations to perform multi-digit arithmetic by multiplying 2 two-digit whole numbers, applying strategies based on the properties of operations, and explaining the calculation using equations, arrays, and/or area models.		X	
Mathematical Practice Standards			
• MPS1: Make sense of problems and persevere in solving them.			
4.NBT.6 ✔ Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.			
• † **Obj. 1** Students will use place value understanding and properties of operations to perform multi-digit arithmetic by finding whole number quotients of whole numbers with up to four-digit dividends and one-digit divisors, applying the relationship between multiplication and division, and rewriting the division equation into a multiplication equation.			X
• † **Obj. 2** Students will use place value understanding and properties of operations to perform multi-digit arithmetic by finding whole number quotients and remainders of whole numbers with up to four-digit dividends and one-digit divisors, illustrating with area models, and explaining the solution.			X
• † **Obj. 3** Students will use place value understanding and properties of operations to perform multi-digit arithmetic by			

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UNIT STANDARDS & OBJECTIVES	COMPONENTS		
	1	2	3
finding whole number quotients and remainders of whole numbers with up to four-digit dividends and one-digit divisors, illustrating with rectangular arrays, and explaining the solution.			**X**
• † **Obj. 4** Students will use place value understanding and properties of operations to perform multi-digit arithmetic by finding whole number quotients and remainders of whole numbers with up to four-digit dividends and one-digit divisors, using the distributive property to decompose the dividend into units of place value, and adding up the quotient with each unit in order of greatest to least.			**X**
• † **Obj. 5** Students will use place value understanding and properties of operations to perform multi-digit arithmetic by interpreting and using remainders with respect to context in problem situations.			**X**

Mathematical Practice Standards

- MPS1: Make sense of problems and persevere in solving them.

UNIT BIG IDEA/ESSENTIAL QUESTION

None entered.

UNIT PERFORMANCE TASKS

None entered.

UNIT RESOURCES

Textbooks

†MMH California Mathematics Concepts, Skills, and Problem Solving - 4th Grade
- †2-4 Adding Numbers
- †8-4 Multiplying Two-Digit Numbers
- †7-6 Multiplying Multi-Digit Numbers
- †9-7 Three-Digit Quotients
- †9-6 Problem Solving
- †9-5 Two-Digit Quotients
- †2-5 Subtracting Numbers
- †9-8 Quotients With Zeros
- †9-1 Division With Remainders

Other Texts

†Ready Common Core Mathematics Instructuion-student book

Other Resources

†Mult. PowerPoint (Video/Presentation) -
SingaporeMathMultiplicationPpt[1].ppt

†Mult. Word Problems (Video/Presentation) -
MultiplicationandMultiplestepwordproblems[1].pptx

†Addition PPT. (Video/Presentation) -
AdditionPatterns4th.ppt

†Division (Video/Presentation) -
Divisionppt[1].ppt

UNIT NOTES

None entered.

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Unit 3

Content Cluster: Use the four operations with whole numbers to solve problems.   **Domain:**   Operations and Algebraic Thinking

UNIT STANDARDS & OBJECTIVES	COMPONENTS		
	1	2	3
4.OA.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.			
• † **Obj. 1** Students will use the four operations with whole numbers to solve problems by interpreting a multiplication equation as a comparison.	X		
• † **Obj. 2** Students will use the four operations with whole numbers to solve problems by representing verbal statements of multiplicative comparisons as multiplicative equations, using the example format "A _(hat)___ is __(3)__ times as many _(dollars)____ as a __(scarf)___."	X		
Mathematical Practice Standards			
• MPS6: Attend to precision.			
4.OA.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.1 1 See Glossary, Table 2.			
• † **Obj. 1** Students will use the four operations with whole numbers to solve problems by multiplying to solve word problems involving multiplicative comparisons, using drawings and equations with a symbol for the unknown number to represent the problem.		X	
• † **Obj. 2** Students will use the four operations with whole numbers to solve problems by dividing to solve word problems involving multiplicative comparisons, using drawings and equations with a symbol for the unknown number to represent the problem.		X	
Mathematical Practice Standards			
• MPS4: Model with mathematics.			
• MPS6: Attend to precision.			
4.OA.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.			
• † **Obj. 1** Students will use the four operations with whole numbers to solve problems by solving multistep word problems posed with whole numbers and having whole number answers using the four operations.			X
• † **Obj. 2** Students will use the four operations with whole numbers to solve problems by solving multistep word problems posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted.			X
• † **Obj. 3** Students will use the four operations with whole numbers to solve problems by interpreting and using remainders with respect to context in problem situations.			X

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UNIT STANDARDS & OBJECTIVES	COMPONENTS		
	1	2	3
• † **Obj. 4** Students will use the four operations with whole numbers to solve problems by representing multistep word problems, using equations with a letter standing for the unknown quantity.			X
• † **Obj. 5** Students will use the four operations with whole numbers to solve problems by assessing the reasonableness of answers, using mental computation.			X
• † **Obj. 6** Students will use the four operations with whole numbers to solve problems by assessing the reasonableness of answers, using estimation strategies including rounding.			X

Mathematical Practice Standards

- MPS1: Make sense of problems and persevere in solving them.

UNIT BIG IDEA/ESSENTIAL QUESTION
None entered.

UNIT PERFORMANCE TASKS
None entered.

UNIT RESOURCES
Other Texts
†Ready Common Core Mathematics Instructuion-student book

UNIT NOTES
None entered.

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Unit 4

Content Cluster: Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

Domain: Measurement and Data

UNIT STANDARDS & OBJECTIVES	COMPONENTS		
	1	2	3
4.MD.1 ✔ Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...*			
• † **Obj. 1** Students will solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit by recognizing the relative sizes of measurement units within one system of units, including km, m, cm; kg, g; lb, oz; L, mL; hr, min, sec.	X		
• † **Obj. 2** Students will solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit by expressing measurements in a larger unit in terms of a smaller unit within the same system, and recording measurement equivalents in a two-column table.	X		
Mathematical Practice Standards			
• MPS6: Attend to precision.			
4.MD.2 ✔ Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.			
• † **Obj. 1** Students will solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit by solving measurement word problems using the four operations, and using diagrams to represent measurement quantities.		X	
• † **Obj. 2** Students will solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit by solving problems that involve simple fraction or decimal measurements.		X	
• † **Obj. 3** Students will solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit by solving problems using the four operations that require expressing measurements given in a larger unit in terms of a smaller unit.		X	
Mathematical Practice Standards			
• MPS4: Model with mathematics.			
• MPS6: Attend to precision.			
4.MD.3 ✔ Apply the area and perimeter formulas for rectangles in real world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.*			
• † **Obj. 1** Students will solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit by applying the area formula for rectangles to solve a real-world problem.			X
• † **Obj. 2** Students will solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit by applying the perimeter formula for rectangles to solve a real-world problem.			X

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UNIT STANDARDS & OBJECTIVES	COMPONENTS		
	1	2	3
• † **Obj. 3** Students will solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit by applying the area formula for rectangles to solve mathematical problems.			X
• † **Obj. 4** Students will solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit by applying the perimeter formula for rectangles to solve mathematical problems.			X

Mathematical Practice Standards

- MPS2: Reason abstractly and quantitatively.

UNIT BIG IDEA/ESSENTIAL QUESTION
None entered.

UNIT PERFORMANCE TASKS
None entered.

UNIT RESOURCES

Other Texts

†Ready Common Core Mathematics Instructuion-student book

Other Resources

†Measurement PPT. 3 (Video/Presentation) -
measurement_liquid.pptx

†Measurement PPT. 2 (Video/Presentation) -
Measurement.pptx

†Measurement PPT. 4 (Video/Presentation) -
millionaire_length_conversion.ppt

†Measurement PPT. (Video/Presentation) -
Dice_Bngo_customary_measurement.ppt

UNIT NOTES
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Unit 5

Content Cluster: Gain familiarity with factors and multiples.   **Domain:**   Operations and Algebraic Thinking

UNIT STANDARDS & OBJECTIVES	COMPONENTS
	1
4.OA.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.	
• † **Obj. 1** Students will gain familiarity with factors and multiples by finding all factor pairs for a whole number in the range 1–100.	X
• † **Obj. 2** Students will gain familiarity with factors and multiples by examining various patterns in factor pairs by finding all factor pairs in the range 1–100.	X
• † **Obj. 3** Students will gain familiarity with factors and multiples by recognizing that a whole number is a multiple of each of its factors.	X
• † **Obj. 4** Students will gain familiarity with factors and multiples by determining whether a given whole number in the range 1–100 is a multiple of a given one-digit number.	X
• † **Obj. 5** Students will gain familiarity with factors and multiples by determining whether a given whole number in the range of 1–100 is prime or composite.	X

Mathematical Practice Standards

- MPS7: Look for and make use of structure.
- MPS8: Look for and express regularity in repeated reasoning.

UNIT BIG IDEA/ESSENTIAL QUESTION
None entered.

UNIT PERFORMANCE TASKS
None entered.

UNIT RESOURCES

Textbooks

†MMH California Mathematics Concepts, Skills, and Problem Solving - 4th Grade
- †Chapter 5 Lesson 9

Other Texts

†Ready Common Core Mathematics Instructuion-student book

Other Resources

†Factors and Mult. PPT. (Video/Presentation) -
FACTORS_MULTIPLES.ppt

†Factors and Mult. PPT. 2 (Video/Presentation) -
FactorsMultiplesPowerpoint.ppsx

UNIT NOTES
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Unit 6

Content Cluster: Generate and analyze patterns.   **Domain:**   Operations and Algebraic Thinking

UNIT STANDARDS & OBJECTIVES	COMPONENTS
	1
4.OA.5 ✔ Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way*.	
• † **Obj. 1** Students will generate and analyze patterns by analyzing numerical sequencing for repeated whole numbers in addition, multiplication, and division patterns.	X
• † **Obj. 2** Students will generate and analyze patterns by analyzing repeating patterns of shapes.	X
• † **Obj. 3** Students will generate and analyze patterns by generating a number pattern that follows a given rule.	X
• † **Obj. 4** Students will generate and analyze patterns by generating a shape pattern that follows a given rule.	X
• † **Obj. 5** Students will generate and analyze patterns by connecting a rule for a given pattern with its sequence of numbers and identifying apparent features of the pattern that were not explicit in the rule itself.	X
• † **Obj. 6** Students will generate and analyze patterns by connecting a rule for a given pattern with its sequence of shapes and identifying apparent features of the pattern that were not explicit in the rule itself.	X
Mathematical Practice Standards • MPS7: Look for and make use of structure. • MPS8: Look for and express regularity in repeated reasoning.	
UNIT BIG IDEA/ESSENTIAL QUESTION	
None entered.	
UNIT PERFORMANCE TASKS	
None entered.	
UNIT RESOURCES	
Other Texts	
†Ready Common Core Mathematics Instructuion-student book	
UNIT NOTES	
None entered.	

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UNIT OVERVIEW

Unit 7

Content Cluster: Draw and identify lines and angles, and classify shapes by properties of their lines and angles. **Domain:** Geometry

UNIT STANDARDS & OBJECTIVES	COMPONENTS		
	1	2	3
4.G.1 ✔ Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.			
• † **Obj. 1** Students will draw and identify lines and angles, and classify shapes by properties of their lines and angles, by drawing points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines.	X		
• † **Obj. 2** Students will draw and identify lines and angles, and classify shapes by properties of their lines and angles, by identifying two-dimensional shapes according to their properties.	X		
Mathematical Practice Standards			
• MPS6: Attend to precision.			
4.G.2 ✔ Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.			
• † **Obj. 1** Students will draw and identify lines and angles, and classify shapes by properties of their lines and angles, by understanding and recognizing that right triangles are a specific category of triangle.		X	
• † **Obj. 2** Students will draw and identify lines and angles, and classify shapes by properties of their lines and angles, by identifying right triangles.		X	
• † **Obj. 3** Students will draw and identify lines and angles, and classify shapes by properties of their lines and angles, by classifying two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size.		X	
Mathematical Practice Standards			
• MPS7: Look for and make use of structure.			
4.G.3 ✔ Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.			
• † **Obj. 1** Students will draw and identify lines and angles, and classify shapes by properties of their lines and angles, by identifying line-symmetric figures.			X
• † **Obj. 2** Students will draw and identify lines and angles, and classify shapes by properties of their lines and angles, by identifying a line of symmetry for a two-dimensional figure as a line across the figure, such that the figure can be folded along the line into matching parts.			X
• † **Obj. 3** Students will draw and identify lines and angles, and classify shapes by properties of their lines and angles, by drawing lines of symmetry.			X
Mathematical Practice Standards			
• MPS7: Look for and make use of structure.			
UNIT BIG IDEA/ESSENTIAL QUESTION			
None entered.			

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UNIT PERFORMANCE TASKS
None entered.

UNIT RESOURCES
Textbooks
†MMH California Mathematics Concepts, Skills, and Problem Solving - 4th Grade
• †Chapter 10
Other Texts
†Ready Common Core Mathematics Instructuion-student book
Other Resources
†Lines and Angles (Video/Presentation) -   Lines.ppt

UNIT NOTES
None entered.

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Unit 8

Content Cluster: Extend understanding of fraction equivalence and ordering.   **Domain:**   Number and Operations-Fractions

UNIT STANDARDS & OBJECTIVES	COMPONENTS	
	1	2
4.NF.1 ✔ Explain why a fraction *a/b* is equivalent to a fraction (*n* × *a*)/(*n* × *b*) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.		
• † **Obj. 1** Students will extend understanding of fraction equivalence and ordering by explaining why a fraction is equivalent to another fraction using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size.	X	
• † **Obj. 2** Students will extend understanding of fraction equivalence and ordering by recognizing equivalent fractions based on applying the principle of multiplying the numerator and denominator by the same non-zero whole number.	X	
• † **Obj. 3** Students will extend understanding of fraction equivalence and ordering by generating equivalent fractions, applying the principle of multiplying the numerator and denominator by the same non-zero whole number.	X	
Mathematical Practice Standards		
• MPS2: Reason abstractly and quantitatively.		
• MPS3: Construct viable arguments and critique the reasoning of others.		
4.NF.2 ✔ Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.		
• † **Obj. 1** Students will extend understanding of fraction equivalence and ordering by comparing two fractions with different numerators and denominators, using common denominators.		X
• † **Obj. 2** Students will extend understanding of fraction equivalence and ordering by comparing two fractions with different numerators and denominators, using common numerators.		X
• † **Obj. 3** Students will extend understanding of fraction equivalence and ordering by comparing two fractions with different numerators and denominators, using a benchmark fraction (1/2, 1/4).		X
• † **Obj. 4** Students will extend understanding of fraction equivalence and ordering by explaining why fraction comparisons are valid only when two fractions refer to the same whole.		X
• † **Obj. 5** Students will extend understanding of fraction equivalence and ordering by recording the results of comparisons with <, =, or > symbols and justifying the conclusions (e.g., by using a visual fraction model).		X
Mathematical Practice Standards		
• MPS3: Construct viable arguments and critique the reasoning of others.		
UNIT BIG IDEA/ESSENTIAL QUESTION		
None entered.		
UNIT PERFORMANCE TASKS		
None entered.		

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UNIT RESOURCES

Textbooks
†MMH California Mathematics Concepts, Skills, and Problem Solving - 4th Grade
• †Chapter 13

Other Texts
†Ready Common Core Mathematics Instructuion-student book

Other Resources
†Equivalent Fractions (Video/Presentation) - EquivFrac.ppt

UNIT NOTES

None entered.

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The Synced Solution

Unit 9

| **Content Cluster:** | Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. | **Domain:** | Number and Operations-Fractions |

UNIT STANDARDS & OBJECTIVES	COMPONENTS						
	1	2	3	4	5	6	7
4.NF.3a ✔ Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.							
• † **Obj. 1** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by explaining how fractions are built up from unit fractions.	X						
• † **Obj. 2** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by explaining addition of fractions as joining parts referring to the same whole.	X						
• † **Obj. 3** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by explaining how subtraction of fractions as separating parts refers to the same whole.	X						
Mathematical Practice Standards							
• MPS2: Reason abstractly and quantitatively.							
4.NF.3b ✔ Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.*							
• † **Obj. 1** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by identifying fractions as a point on the number line.		X					
• † **Obj. 2** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by explaining how a fraction is a sum of unit fractions (e.g., 5 = 1 + 1 + 1 + 1 + 1, so 5/3 = 1/3 + 1/3 + 1/3 + 1/3 + 1/3).		X					
• † **Obj. 3** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by decomposing a fraction into a sum of fractions with the same denominator, recording the decomposition with an equation.		X					
• † **Obj. 4** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by decomposing a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition with an equation.		X					
• † **Obj. 5** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by justifying decompositions using a visual fraction model.		X					
Mathematical Practice Standards							
• MPS3: Construct viable arguments and critique the reasoning of others.							
4.NF.3c ✔ Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.							
• † **Obj. 1** Students will build fractions from unit fractions by applying and extending previous understanding							

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UNIT STANDARDS & OBJECTIVES	COMPONENTS						
	1	2	3	4	5	6	7
of operations on whole numbers by adding mixed numbers with like denominators, replacing each mixed number with an equivalent fraction.			X				
• † **Obj. 2** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by adding mixed numbers with like denominators, using properties of operations.			X				
• † **Obj. 3** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by adding mixed numbers with like denominators, using the relationship between addition and subtraction.			X				
• † **Obj. 4** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by subtracting mixed numbers with like denominators, replacing each mixed number with an equivalent fraction.			X				
• † **Obj. 5** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by subtracting mixed numbers with like denominators, using properties of operations.			X				
• † **Obj. 6** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by subtracting mixed numbers with like denominators, using the relationship between addition and subtraction.			X				
Mathematical Practice Standards							
• MPS5: Use appropriate tools strategically.							
• MPS7: Look for and make use of structure.							
4.NF.3d ✔ Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.							
• † **Obj. 1** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by explaining the underlying unit quantities when solving word problems involving addition and subtraction of fractions.				X			
• † **Obj. 2** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by formulating an equation of the form $A + B = C$ or $A - B = C$ for a word problem, and explaining how the numbers A, B, and C must all refer to the same (or equivalent) wholes or unit amounts.				X			
• † **Obj. 3** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by solving word problems involving addition of fractions referring to the same whole and having like denominators, using visual fraction models.				X			
• † **Obj. 4** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by solving word problems involving addition of fractions referring to the same whole and having like denominators, using equations to represent the problem.				X			
• † **Obj. 5** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by solving word problems involving subtraction of fractions referring to the same whole and having like denominators, using visual fraction models.				X			
• † **Obj. 6** Students will build fractions from unit fractions by applying and extending previous understanding							

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UNIT STANDARDS & OBJECTIVES	COMPONENTS						
	1	2	3	4	5	6	7
of operations on whole numbers by solving word problems involving subtraction of fractions referring to the same whole and having like denominators, using equations to represent the problem.				X			

Mathematical Practice Standards

- MPS4: Model with mathematics.

4.NF.4a ✔ Understand a fraction *a/b* as a multiple of 1/*b*. *For example, use a visual fraction model to represent 5/4 as the product 5 × (1/4), recording the conclusion by the equation 5/4 = 5 × (1/4).*							
• † **Obj. 1** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by explaining the fraction *a/b* as a multiple of 1/*b*, using visual fraction models.					X		
• † **Obj. 2** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by explaining the fraction *a/b* as a multiple of 1/*b*, using equations to represent the relationship.					X		

Mathematical Practice Standards

- MPS6: Attend to precision.

4.NF.4b ✔ Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. *For example, use a visual fraction model to express 3 × (2/5) as 6 × (1/5), recognizing this product as 6/5. (In general, n × (a/b) = (n × a)/b.)*							
• † **Obj. 1** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by explaining a multiple of *a/b* as a multiple of 1/*b*, using visual fraction models.						X	
• † **Obj. 2** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by explaining a multiple of *a/b* as a multiple of 1/*b*, using equations to represent the problem.						X	
• † **Obj. 3** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by explaining a multiple of *a/b* as a multiple of 1/*b*, and using this explanation to multiply a fraction by a whole number.						X	

Mathematical Practice Standards

- MPS2: Reason abstractly and quantitatively.

4.NF.4c ✔ Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. *For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?*							
• † **Obj. 1** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by solving word problems involving multiplication of a fraction by a whole number, using visual fraction models.							X
• † **Obj. 2** Students will build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers by solving word problems involving multiplication of a fraction by a whole number, using equations to represent the problem.							X

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UNIT STANDARDS & OBJECTIVES	COMPONENTS						
	1	2	3	4	5	6	7

Mathematical Practice Standards

- MPS2: Reason abstractly and quantitatively.
- MPS4: Model with mathematics.

UNIT BIG IDEA/ESSENTIAL QUESTION

None entered.

UNIT PERFORMANCE TASKS

None entered.

UNIT RESOURCES

Textbooks

†MMH California Mathematics Concepts, Skills, and Problem Solving - 4th Grade
- †Chapter 13

Other Texts

†Ready Common Core Mathematics Instructuion-student book

Other Resources

†Mixed Numbers PPT. (Video/Presentation) -
Mixed Numbers .ppt

†Improper Fractions (Video/Presentation) -
Improper Fractions .ppt

UNIT NOTES

None entered.

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The Synced Solution

Unit 10

Content Cluster: Understand decimal notation for fractions, and compare decimal fractions.	**Domain:** Number and Operations-Fractions

UNIT STANDARDS & OBJECTIVES	COMPONENTS		
	1	2	3
4.NF.5 ✔ Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.2 *For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.* 2 Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators in general is not a requirement at this grade.			
• † **Obj. 1** Students will understand decimal notation for fractions by representing fractions with denominator 10 as an equivalent fraction with denominator 100.	X		
• † **Obj. 2** Students will understand decimal notation for fractions by adding two fractions with respective denominators 10 and 100, representing a fraction with denominator 10 as an equivalent fraction with denominator 100.	X		
Mathematical Practice Standards			
• MPS7: Look for and make use of structure.			
4.NF.6 ✔ Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.*			
• † **Obj. 1** Students will understand decimal notation for fractions by using decimal notation for fractions with denominator 10.		X	
• † **Obj. 2** Students will understand decimal notation for fractions by using decimal notation for fractions with denominator 100.		X	
Mathematical Practice Standards			
• MPS6: Attend to precision.			
4.NF.7 ✔ Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.			
• † **Obj. 1** Students will compare decimal fractions by comparing decimals using the meaning of a decimal as a fraction, making sure to compare fractions with the same denominator (e.g., 0.20 and 0.09 is 0.20 > 0.09 because 20/100 > 9/100).			X
• † **Obj. 2** Students will compare decimal fractions by comparing two decimals to hundredths, reasoning about their size, and recording the result of comparisons with the symbols >, =, or <.			X
• † **Obj. 3** Students will compare decimal fractions by explaining why comparisons are valid only when the two decimals refer to the same whole and justifying the conclusions by using a visual model.			X
Mathematical Practice Standards			
• MPS3: Construct viable arguments and critique the reasoning of others.			

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UNIT OVERVIEW

UNIT BIG IDEA/ESSENTIAL QUESTION
None entered.

UNIT PERFORMANCE TASKS
None entered.

UNIT RESOURCES
Other Texts
†Ready Common Core Mathematics Instructuion-student book
Other Resources
†Decimals and Fractions (Video/Presentation) -   Comparing+Fractions+and+Decimals.ppt   †Compare Decimals to Fractions (Video/Presentation) -   comparing_fractions_using_decimals.ppt

UNIT NOTES
None entered.

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Unit 11

Content Cluster: Represent and interpret data.　　　　　　**Domain:** Measurement and Data

UNIT STANDARDS & OBJECTIVES	COMPONENTS
	1
4.MD.4 ✔ Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.*	
• † **Obj. 1** Students will represent and interpret data by identifying the features of a line plot.	X
• † **Obj. 2** Students will represent and interpret data by explaining that the numbers on the scale of a line plot indicate the total number of measurement units from the zero of the scale.	X
• † **Obj. 3** Students will represent and interpret data by creating a line plot display for a given data set of measurements in fractions of a unit in a real-world context.	X
• † **Obj. 4** Students will represent and interpret data by solving problems using addition and subtraction, involving measurements in fractions of a unit presented in line plots from a real-world context.	X
Mathematical Practice Standards • MPS4: Model with mathematics. • MPS6: Attend to precision.	
UNIT BIG IDEA/ESSENTIAL QUESTION	
None entered.	
UNIT PERFORMANCE TASKS	
None entered.	
UNIT RESOURCES	
Textbooks	
†MMH California Mathematics Concepts, Skills, and Problem Solving - 4th Grade 　• †Chapter 4 Lesson 4	
Other Texts	
†Ready Common Core Mathematics Instructuion-student book	
Other Resources	
†Line Plots (Video/Presentation) - LinePlots4th.ppt	
UNIT NOTES	
None entered.	

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Unit 12

Content Cluster: Geometric measurement: understand concepts of angle and measure angles. **Domain:** Measurement and Data

UNIT STANDARDS & OBJECTIVES	COMPONENTS			
	1	2	3	4
4.MD.5a ✔ An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles.				
• † **Obj. 1** Students will understand concepts of angle and measure angles by identifying the attribute of angle measure.	X			
• † **Obj. 2** Students will understand concepts of angle and measure angles by distinguishing the attribute of angle measure from other attributes.	X			
• † **Obj. 3** Students will understand concepts of angle and measure angles by explaining why four angles are formed when two lines intersect.	X			
• † **Obj. 4** Students will understand concepts of angle and measure angles by explaining how an angle is measured with reference to a circle with its center at the common endpoint of the rays, considering the fraction of the circular arc between the points where the two rays intersect the circle.	X			
• † **Obj. 5** Students will understand concepts of angle and measure angles by explaining how an angle that turns through 1/360 of a circle is called a "one-degree angle," and is used to measure angles.	X			
Mathematical Practice Standards				
• MPS6: Attend to precision.				
4.MD.5b ✔ An angle that turns through n one-degree angles is said to have an angle measure of n degrees.				
• † **Obj. 1** Students will understand concepts of angle and measure angles by explaining that an angle that turns through n one-degree angles is said to have an angle measure of n degrees.		X		
• † **Obj. 2** Students will understand concepts of angle and measure angles by explaining that full angle rotation around a fixed vertex is 360 degrees.		X		
Mathematical Practice Standards				
• MPS6: Attend to precision.				
4.MD.6 ✔ Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.				
• † **Obj. 1** Students will understand concepts of angle and measure angles by measuring angles in whole-number degrees, using a protractor.			X	
• † **Obj. 2** Students will understand concepts of angle and measure angles by sketching angles of specified measure, using a protractor.			X	
Mathematical Practice Standards				
• MPS6: Attend to precision.				
4.MD.7 ✔ Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction				

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UNIT STANDARDS & OBJECTIVES	COMPONENTS			
	1	2	3	4
problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.				
• † **Obj. 1** Students will understand concepts of angle and measure angles by recognizing angle measure as additive.				X
• † **Obj. 2** Students will understand concepts of angle and measure angles by explaining that when an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts.				X
• † **Obj. 3** Students will understand concepts of angle and measure angles by solving real-world addition problems to find unknown angles on a diagram, using an equation with a symbol for the unknown angle measure.				X
• † **Obj. 4** Students will understand concepts of angle and measure angles by solving real-world subtraction problems to find unknown angles on a diagram, using an equation with a symbol for the unknown angle measure.				X
• † **Obj. 5** Students will understand concepts of angle and measure angles by solving mathematical addition problems to find unknown angles on a diagram.				X
• † **Obj. 6** Students will understand concepts of angle and measure angles by solving mathematical subtraction problems to find unknown angles on a diagram.				X

Mathematical Practice Standards

- MPS2: Reason abstractly and quantitatively.
- MPS4: Model with mathematics.

UNIT BIG IDEA/ESSENTIAL QUESTION
None entered.

UNIT PERFORMANCE TASKS
None entered.

UNIT RESOURCES
Other Texts

†Ready Common Core Mathematics Instructuion-student book

Other Resources

†Angles (Video/Presentation) -
Angles4th.ppt

UNIT NOTES
None entered.

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