

Fourth Grade Mathematics: Benchmark Expectations Toward Meeting Standards

	November	March	June
Operations and Algebraic Thinking			
Use the four operations with whole numbers to solve problems	<ul style="list-style-type: none"> Writes and solves equations that represent situations of multiplicative comparison with multi-digit numbers. Uses drawings and equations with a letter for the unknown number to solve multiplication word problems involving multiplicative comparisons with multi-digit numbers. (ex. Ann has 3 stickers. Sam has 4 times as many. How many stickers does Sam have? $4 \times A = S$) Solves multi-step word problems involving multi-digit whole numbers using $+/ - / \times$. Writes equations to represent multi-step word problems using a letter for the unknown number with multi-digit numbers. Uses estimation to determine the reasonableness of answers. (Unit 4.1 & 4.2)	<p><i>1st trimester expectations continue to be reinforced, developed and informally assessed.</i></p> <ul style="list-style-type: none"> Solves multi-step word problems involving multi-digit whole numbers using the four operations. <ul style="list-style-type: none"> Uses drawings and equations with a letter for the unknown number to solve multiplication and division word problems involving multiplicative comparisons with multi-digit numbers. (ex. Ann has 3 stickers. Sam has 4 times as many. How many stickers does Sam have? $4 \times A = S$) Interprets remainders in multi-step word problems. (Unit 4.3)	<p><i>1st and 2nd trimester expectations continue to be reinforced, developed and informally assessed.</i></p>
Gain familiarity with factors and multiples	<i>Not Introduced</i>	<i>Not Introduced</i>	<ul style="list-style-type: none"> Finds all factor pairs for a whole number in the range 0-100 Determines whether a number is prime or composite (Unit 4.6)
Generate and analyze patterns	<i>Not Introduced</i>	<i>Not Introduced</i>	<ul style="list-style-type: none"> Generates a number or shape pattern that follows a given rule. Identifies attributes of a number pattern other than the rule itself. (ex. If asked to start at 1 and use the rule "Add 2," recognize that all following numbers are odd.) (Unit 4.9)

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Number and Operations in Base Ten			
Generalize place value understanding for multi-digit whole numbers	<ul style="list-style-type: none"> Recognizes that in a multi-digit whole number, a digit in the ones place represents ten times what it represents in the place to its right Reads and writes multi-digit whole numbers using base-ten numerals, number names, and expanded form Compares two multi-digit numbers using $>$, $<$, and $=$ Rounds multi-digit whole numbers to any place up to 1,000,000 (Unit 4.1) 	<p><i>1st trimester expectations continue to be reinforced, developed and informally assessed.</i></p> <ul style="list-style-type: none"> Recognizes that in a multi-digit whole number, a digit in the ones place represents ten times what it represents in the place to its right by applying place value concepts with division (Unit 4.3) 	<p><i>1st and 2nd trimester expectations continue to be reinforced, developed and informally assessed.</i></p>
Use place value understanding and properties of operations to perform multi-digit arithmetic	<ul style="list-style-type: none"> Fluently adds and subtracts multi-digit whole numbers using the standard algorithm up to 1,000,000 Multiplies a whole number of up to four digits by a one-digit whole number Multiplies two two-digit numbers, using strategies based on place value and the properties of operations Illustrates and explains multiplication calculations by using equations, rectangular arrays, and/or area models involving two two-digit numbers and up to one by four-digit numbers (Unit 4.1 & 4.2) 	<p><i>1st trimester expectations continue to be reinforced, developed and informally assessed.</i></p> <ul style="list-style-type: none"> Finds whole-number quotients and remainders with up to four-digit dividends and one-digit divisors Finds whole-number quotients and remainders with up to four-digit dividends and one-digit divisors Illustrates and explains division calculations by using equations, rectangular arrays, and/or area models (Unit 4.3) 	<p><i>1st and 2nd trimester expectations continue to be reinforced, developed and informally assessed.</i></p>
Number and Operations - Fractions			
Extend understanding of fraction equivalence and ordering	<i>Not Introduced</i>	<p><i>Using denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100</i></p> <ul style="list-style-type: none"> Explains why two fractions are equivalent using visual models Recognizes and generates equivalent fractions Compares fractions with different numerators and denominators by creating visual fraction models, creating 	<p><i>2nd trimester expectations continue to be reinforced, developed and informally assessed.</i></p>

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		common numerators or denominators, or comparing to a benchmark fraction <ul style="list-style-type: none"> Uses ($>$, $=$, $<$) symbols to record the comparisons (Unit 4.5)	
Build fractions from unit fractions by extending previous understandings of operations on whole numbers	<i>Not Introduced</i>	<ul style="list-style-type: none"> Recognizes a fraction with a numerator greater than 1 as the sum of unit fractions (i.e. $3 \times \frac{1}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$) Understand adding and subtracting fractions is joining and separating parts of the same whole Breaks apart fractions into sums of fractions with the same denominator (i.e. $\frac{5}{8} = \frac{4}{8} + \frac{1}{8}$) Adds and subtracts mixed numbers with the same denominator Solves word problems involving adding and subtracting fractions using visual models and equations Understands that multiplying a whole number by a fraction is a whole number of groups of the given fraction using visual models or numerical representations (i.e. $3 \times \frac{1}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$) Solves word problems involving a whole number times a fraction using models, pictures, words, and numbers and explains reasoning (Unit 4.5)	<i>2nd trimester expectations continue to be reinforced, developed and informally assessed.</i>
Understand decimal notation for fractions, and compare decimal fractions	<i>Not Introduced</i>	<ul style="list-style-type: none"> Recognizes that comparisons are only valid when referring to the same whole Adds fractions with unlike denominators of 10 and 100. (i.e. $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$) Rewrites fractions with denominators 	<i>2nd trimester expectations continue to be reinforced, developed and informally assessed.</i>

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		<ul style="list-style-type: none"> of 10 or 100 as decimals Compares decimals of 10ths or 100ths using (<,<=,>) symbols (Unit 4.4 & 4.5)	
Measurement and Data			
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit	<ul style="list-style-type: none"> Using the +/-x, solve word problems involving distances and money. Represents measurement quantities using diagrams (i.e. number lines) (Unit 4.2)	<ul style="list-style-type: none"> Using the four operations, solve word problems involving distances, times, and money. Generate measurement data by measuring lengths (Unit 4.4 & 4.5)	<i>1st and 2nd trimester expectations continue to be reinforced and informally assessed.</i> <ul style="list-style-type: none"> Understands approximate sizes of measurement units, including km, m, cm, kg, g, lb, oz, l, ml, hr, min, sec Uses the area and perimeter formula for rectangles in a variety of real-world problems Converts measurements of the same system from a larger to a smaller unit Creates a conversion table Using the four operations, solve word problems involving liquid volumes, distances, times, mass, and money Represents measurement quantities using diagrams (i.e. number lines) (Unit 4.7)
Represent and interpret data	<i>Not Introduced</i>	<ul style="list-style-type: none"> Generates a line plot with data in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$) Solves word problems involving addition and subtraction of fractions using information from the line plot (Unit 4.5)	<i>2nd trimester expectations continue to be reinforced, developed and informally assessed.</i>

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Geometric measurement: understand concepts of angle and measure angles	<i>Not Introduced</i>	<i>Not Introduced</i>	<ul style="list-style-type: none"> • Understands how angles are formed from two rays with a shared endpoint • Understands the concepts of how to measure angles • Measures angles using a protractor • Understands that an angle measure is made up of the sum other smaller angles put together • Solves addition and subtraction problems to find the unknown angles on a diagram (Unit 4.7)
Geometry			
Draw and identify lines and angles, and classify shapes by properties of their lines and angles	<i>Not Introduced</i>	<i>Not Introduced</i>	<ul style="list-style-type: none"> • Classifies 2-D figures based on presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size • Identifies right triangles • Discusses relationship among various quadrilaterals • Uses precise geometric vocabulary when discussing, classifying, and sorting shapes • Recognizes lines of symmetry in two-dimensional figures • Draws lines of symmetry (Units 4.7 & 4.8)

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