Grade 4 Math Benchmarks

1. Use understanding of place value to solve multi-digit problems.

Trimester	1	2	3	4
1st	Unable to use strategies to accurately solve problems.	Inconsistently uses strategies to accurately solve problems.	Consistently uses strategies to accurately solve problems.	Uses multiple strategies to solve problems.
2nd	Unable to use an efficient strategy to solve addition, subtraction, multiplication, and division problems. Unable to show mathematical thinking.	Inconsistently uses an efficient and accurate strategy to solve addition, subtraction, multiplication and division problems. Inefficiently shows mathematical thinking.	Consistently uses an efficient and accurate strategy to solve addition, subtraction, multiplication and division problems. Able to understand and solve multi-step problems. Shows mathematical thinking.	Uses multiple strategies to solve problems and check answers. Consistently able to solve multi-step problems. Consistently shows mathematical thinking.
3rd	Does not have an efficient and accurate strategy to solve addition, subtraction, multiplication and division problems. Unable to show mathematical thinking or uses incorrect operation.	Inconsistently uses an efficient and accurate strategy to solve addition, subtraction, multiplication and division problems. Inconsistently shows mathematical thinking.	Consistently uses an efficient and accurate strategy to identify the operation and solve word problems using the four operations. Consistently able to solve multi-step problems. Consistently shows mathematical thinking.	Consistently uses multiple efficient and accurate strategies to solve and check addition, subtraction, multiplication and division problems. Efficiently able to show and explain all parts of student thinking in single and multi-step problems.

2. Gain familiarity with factors and multiples

Trimester	1	2	3	4
1st	Rarely able to demonstrate an understanding of the difference between factors and multiples.	Inconsistently able to identify multiples of a number. Inconsistently able to identify all factors	Consistently able to identify multiples of a number. Consistently able to identify all factors	Consistently finds all of the factor pairs for a number using the divisibility rules. Consistently identifies factors and/or multiples of a number. Consistently able to identify if a number is prime or composite.
2nd	Inconsistently able to identify factor pairs and multiples of number in the range of 1-50.	Inconsistently finds all of the factor pairs for a number. Inconsistently identifies factors and/or multiples of a number. Inconsistently able to identify if a number is prime or composite.	Consistently finds all of the factor pairs for a number. Consistently identifies factors and/or multiples of a number. Consistently able to identify if a number is prime or composite.	Independently uses knowledge of factors and multiples to solve problems both consistently and accurately.
3rd	Inconsistently able to or rarely able to identify factors and/or multiples of number in the range of 1-100	Able to find the factor pairs for a number. Able to identify some factors and/or multiples of a number.	Consistently uses knowledge of factors and multiples to solve problems.	Uses factors and/or multiples to solve problems and explain their thinking.

3. Generalize place value understanding for multi-digit whole numbers

Trimester	1	2	3	4
1st	Unable uses place value to round multi-digit whole numbers to any place. Unable to read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Unable to recognize the relationship between two consecutive digits.	Inconsistently uses place value to round multi-digit whole numbers to any place. Inconsistently able to read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Inconsistently able to recognize the relationship between two consecutive digits.	Consistently uses place value to round multi-digit whole numbers to any place. Consistently able to read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Consistently able to recognize the relationship between two consecutive digits.	Consistently able to explain patterns in the number of zeros of the products when multiplying a number by powers of ten. Consistently able to use rounding to estimate.
2nd	Unable to estimate using place value.	Inconsistently able to estimate using place value.	Consistently able to estimate using place value.	Consistently able to identify relationships in place value when converting metric measures.
3rd	Unable to identify relationships in place value when converting metric measures.	Inconsistently able to identify relationships in place value when converting metric measures.	Consistently able to identify relationships in place value when converting metric measures.	Consistently able to apply place value to real world mathematical practices.

4. Use place value understanding and properties of operations to perform multi-digit arithmetic

Trimester	1	2	3	4
1st	Unable or rarely able to add and/or subtract	Inconsistently uses multiple strategies to add and/or subtract	Consistently uses multiple strategies to add and/or subtract	Uses multiple strategies to add and/or subtract, explains their thinking clearly and checks their answer
2nd	Uses repeated addition to solve multiplication problems.	Inconsistently uses a strategy (breaking apart, area model, using known facts) to accurately solve multiplication problems.	Consistently uses a strategy (breaking apart, area model, using known facts) to accurately solve multiplication problems.	Uses more than one strategy to check for reasonableness of answers to multiplication and division problems.

	Unable or rarely able to demonstrate an understanding of the relationship between multiplication and division.	Inconsistently uses known multiplication facts to solve division problems.	Consistently uses a strategy (repeated subtraction, partial quotients) to accurately solve division problems.	Explains their thinking clearly.
3rd	Unable to solve multi-digit arithmetic problems and cannot explain thinking.	Inconsistently uses strategies to solve multi-digit arithmetic problems and/or unclearly explains thinking.	Consistently uses strategies to solve multi-digit arithmetic problems and explains their thinking.	Consistently uses efficient strategies to relate multi-digit problems to real world situations.

5. Extend understanding of fraction equivalence and ordering

Trimester	1	2	3	4
1st	Unable to compare two fractions with the same numerator and denominator by reasoning about their size.	Inconsistently able to compare two fractions with the same numerator and denominator by reasoning about their size.	Able to compare two fractions with the same numerator and denominator by reasoning about their size.	Consistently able to compare and order multiple fractions with different numerators and denominators using strategies (benchmark, common numerator, common denominator).
2nd	Unable to identify and generate equivalent fractions without using manipulatives.	Inconsistently able to identify and generate equivalent fractions. Inconsistently able to compare and order multiple fractions with different numerators and denominators using a strategy (benchmark, common numerator, common denominator).	Consistently able to identify and generate equivalent fractions. Consistently able to compare and order multiple fractions with different numerators and denominators using a strategy (benchmark, common numerator, common denominator).	Able to utilize equivalent fractions in real world situations and explain all mathematical thinking clearly.
3rd	Unable to identify and generate equivalent fractions without using manipulatives.	Inconsistently able to identify and generate equivalent fractions.	Consistently able to identify and generate equivalent fractions.	Able to utilize equivalent fractions in real world situations and explain all

		Inconsistently able to compare and order multiple fractions with different numerators and denominators using a strategy (benchmark, common numerator, common denominator).	Consistently able to compare and order multiple fractions with different numerators and denominators using a strategy (benchmark, common numerator, common denominator).	mathematical thinking clearly.

Note: Grade 3 expectations are limited to fractions with denominators of 2, 3, 4, 6, and 8.Grade 4 expectation are limited to fractions with denominators of 2, 3, 4, 6, 8, 10, 12, and 100.

6. Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Trimester	1	2	3	4
1st	Unable to identify and understand a unit fraction is one part of a whole.	Inconsistently able to identify and understand a unit fraction is one part of a whole.	Consistently able to identify and understand a unit fraction is one part of a whole; can join and separate parts into unit fractions.	Consistently able to add and subtract fractions and mixed numbers with like denominators.
2nd	Unable to join and separate parts into unit fractions and wholes. Unable to add and subtract fractions and mixed numbers with like denominators.	Inconsistently able to join and separate parts into unit fractions and wholes. Inconsistently able to add and subtract fractions and mixed numbers with like denominators.	Consistently able to join and separate parts into unit fractions and wholes. Consistently able to add and subtract fractions and mixed numbers with like denominators.	Consistently able to add and subtract fractions and mixed numbers with like denominators.
3rd	Unable to solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.	Inconsistently able to solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.	Consistently able to solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.	Consistently able to solve word problems involving addition and subtraction of fractions referring to the same whole and having unlike denominators.

7. Understand decimal notation for fractions, and compare decimal fractions

Trimester	1	2	3	4
1st	Unable or inconsistently able to identify coins and their dollar amount.	Sometimes able to manipulate coins to solve problems involving money.	Consistently able to solve problems involving money: dollars, quarters, dimes, nickels, pennies.	Consistently uses decimal notation for fractions with denominators of 10 and 100.
2nd	Unable to use decimal notation for fractions with denominators of 10 and 100.	Inconsistently uses decimal notation for fractions with denominators of 10 and 100.	Consistently uses decimal notation for fractions with denominators of 10 and 100.	Consistently able to compare two decimals to the thousandths place by reasoning about their size.
3rd	Unable to express a fraction with denominator of 10 as an equivalent fraction with a denominator of 100. Unable to compare two decimals to the hundredths place by reasoning about their size.	Inconsistently able to express a fraction with denominator of 10 as an equivalent fraction with a denominator of 100. Inconsistently able to compare two decimals to the hundredths place by reasoning about their size.	Consistently able to express a fraction with denominator of 10 as an equivalent fraction with a denominator of 100. Consistently able to compare two decimals to the hundredths place by reasoning about their size.	Able to use operations with decimals to hundredths using models and strategies.

8. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

Trimester	1	2	3	4
1st	Unable to tell and write time to the nearest minute. Unable to find the area and perimeter of a rectangle. Unable to estimate liquid volumes and masses in standard metric units.	Inconsistently able to tell and write time to the nearest minute. Inconsistently able to find the area and perimeter of a rectangle. Inconsistently able to estimate liquid volumes and masses in standard metric units.	Consistently able to tell and write time to the nearest minute. Consistently able to find the area and perimeter of a rectangle. Consistently able to estimate liquid volumes and masses in standard metric units.	Consistently able to determine amount of time that has passed. Consistently able to use area and perimeter in real world problems using expressions. Consistently able to identify sizes of measurement units.

2nd	Unable to tell and write time to the nearest minute. Unable to find the area and perimeter of a rectangle. Unable to estimate liquid volumes and masses in standard metric units.	Inconsistently able to tell and write time to the nearest minute. Inconsistently able to find the area and perimeter of a rectangle. Inconsistently able to estimate liquid volumes and masses in standard metric units.	Consistently able to tell and write time to the nearest minute. Consistently able to find the area and perimeter of a rectangle. Consistently able to estimate liquid volumes and masses in standard metric units.	Consistently able to solve word problems involving elapsed time. Consistently able to find unknown values of a shape using area and perimeter.
3rd	Unable to solve word problems involving elapsed time. Unable to find unknown values of a shape using area and perimeter. Unable to complete a conversion chart using sizes of measurement.	Inconsistently able to solve word problems involving elapsed time. Inconsistently able to find unknown values of a shape using area and perimeter. Inconsistently able to complete a conversion chart using sizes of measurement.	Consistently able to solve word problems involving elapsed time. Consistently able to find unknown values of a shape using area and perimeter. Consistently able to complete a conversion chart using sizes of measurement.	Consistently able to find the area and perimeter using formulas for real world problems. Consistently able to convert among different-sized measurement units in multi-step real world problems.

9. Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

Trimester	1	2	3	4
1st	Unable to identify a right angle and if it is greater or less. Unable to identify shapes in different categories.	Inconsistently able to identify a right angle and if it is greater or less. Inconsistently able to identify shapes in different categories.	Consistently able to identify a right angle and if it is greater or less. Consistently able to identify shapes in different categories.	Consistently able to identify two-dimensional figures and their attributes.
2nd	Unable to identify a right angle and if it is greater or less. Unable to identify shapes in different categories.	Inconsistently able to identify a right angle and if it is greater or less.	Consistently able to identify a right angle and if it is greater or less.	Consistently able to identify and draw right, acute, and obtuse angles and triangles.

		Inconsistently able to identify shapes in different categories.	Consistently able to identify shapes in different categories.	
3rd	Unable to draw points, lines, line segments, rays, angles, perpendicular lines, parallel lines, intersecting lines. Unable to identify and draw right, acute, and obtuse angles and triangles. Unable to draw and recognize lines of symmetry in a two-dimensional figure.	Inconsistently able to draw points, lines, line segments, rays, angles, perpendicular lines, parallel lines, intersecting lines. Inconsistently able to identify and draw right, acute, and obtuse angles and triangles. Inconsistently able to draw and recognize lines of symmetry in a two-dimensional figure.	Consistently able to draw points, lines, line segments, rays, angles, perpendicular lines, parallel lines, intersecting lines. Consistently able to identify and draw right, acute, and obtuse angles and triangles. Consistently able to draw and recognize lines of symmetry in a two-dimensional figure.	Consistently able to classify two-dimensional figures into categories based on their properties. Consistently able to identify that figures also belong to all subcategories of that category.