Grade 5 Math	
Louisiana Student Standards	**Louisiana Connectors (LC)**
5.OA.A.1 Use parentheses or brackets in numerical expressions, and evaluate expressions with these symbols.	**LC.5.OA.A.1** Evaluate an expression with one set of parentheses.
5.OA.A.2 Write simple expressions that record calculations with whole numbers, fractions, and decimals, and interpret numerical expressions without evaluating them. *For example, express the calculation "add 8 and 7, then multiply by 2" as* $2 \times (8 + 7)$. *Recognize that 3 x (18,932 + 9.21) is three times as large as 18,932 + 9.21, without having to calculate the indicated sum or product.*	**LC.5.OA.A.2** Write a simple numerical expression that indicates calculations with whole numbers.
5.OA.B.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. *For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.*	**LC.5.OA.B.3a** Given 2 patterns involving the same context (e.g., collecting marbles) determine the 1st 5 terms and compare the values. **LC.5.OA.B.3b** When given a line graph representing two arithmetic patterns, identify the relationship between the two. **LC.5.OA.B.3c** Generate or select a comparison between two graphs from a similar situation. **LC.5.OA.B.3d** Using provided table with numerical patterns, form ordered pairs.
5.NBT.A.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $1/10$ of what it represents in the place to its left.	**LC.5.NBT.A.1** Compare the value of a number when it is represented in different place values of two 3 digit numbers.
5.NBT.A.2 Explain and apply patterns in the number of zeros of the product when multiplying a number by powers of 10. Explain and apply patterns in the values of the digits in the product or the quotient, when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. *For example,* $10^0 = 1$, $10^1 = 10$ *... and* $2.1 \times 10^2 = 210$.	**LC.5.NBT.A.2** Find the product of a number and a power of 10.

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5.NBT.A.3 Read, write, and compare decimals to thousandths. a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$. b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	**LC.5.NBT.A.3a** Read, write, or select a decimal to the hundredths place. **LC.5.NBT.A.3b** Read, write or select a decimal to the thousandths place. **LC.5.NBT.A.3c** Compare two decimals to the thousandths place with a value of less than 1.
5.NBT.A.4 Use place value understanding to round decimals to any place.	**LC.5.NBT.A.4a** Round decimals to the next whole number. **LC.5.NBT.A.4b** Round decimals to the tenths place. **LC.5.NBT.A.4c** Round decimals to the hundredths place.
5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	**LC.5.NBT.B.5** Multiply whole numbers with up to 3-digits by numbers with up to 2-digits.
5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, subtracting multiples of the divisor, and/or the relationship between multiplication and division. Illustrate and/or explain the calculation by using equations, rectangular arrays, area models, or other strategies based on place value.	**LC.5.NBT.B.6a** Find whole number quotients up to two dividends and two divisors. **LC.5.NBT.B.6b** Find whole number quotients up to four dividends and two divisors.
5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; justify the reasoning used with a written explanation.	**LC.5.NBT.B.7** Solve 1 step problems using decimals.

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Louisiana Student Standards	**Louisiana Connectors (LC)**
5.NF.A.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example,* $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. *(In general,* $a/b + c/d = (ad + bc)/bd$.*)*	**LC.5.NF.A.1a** Add and subtract fractions with unlike denominators by replacing fractions with equivalent fractions (identical denominators). **LC.5.NF.A.1b** Add or subtract fractions with unlike denominators.
5.NF.A.2 Solve word problems involving addition and subtraction of fractions. a. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. b. Use benchmark fractions and number sense of fractions to estimate mentally and justify the reasonableness of answers. *For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.* c.	**LC.5.NF.A.2** Solve one-step word problems involving addition and subtraction of fractions with unlike denominators.
5.NF.B.3 Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. *For example, interpret* $3/4$ *as the result of dividing 3 by 4, noting that* $3/4$ *multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size* $3/4$*. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?*	**LC.5.NF.B.3** Solve a one-step word problem involving division of whole numbers leading to answers in the form of a fraction or mixed number.

Grade 5 Math	
Louisiana Student Standards	**Louisiana Connectors (LC)**
5.NF.B.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. a. Interpret the product (m/n) x q as m parts of a partition of q into n equal parts; equivalently, as the result of a sequence of operations, m x $q \div n$. *For example, use a visual fraction model to show understanding, and create a story context for (m/n) x q.* b. Construct a model to develop understanding of the concept of multiplying two fractions and create a story context for the equation. [In general, (m/n) x (c/d) = (mc)/(nd).] c. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. d. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	**LC.5.NF.B.4** Multiply a fraction by a whole or mixed number.
5.NF.B.5 Interpret multiplication as scaling (resizing), by: a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case). c. Explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number. d. Relating the principle of fraction equivalence a/b = (n x a)/(n x b) to the effect of multiplying a/b by 1.	**LC.5.NF.B.5** Determine whether the product will increase or decrease based on the multiplier.

Grade 5 Math	
Louisiana Student Standards	**Louisiana Connectors (LC)**
5.NF.B.6 Solve real-world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	**LC.5.NF.B.6** Solve word problems involving multiplication of fractions and mixed numbers.
5.NF.B.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3.* b. Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4.* c. Solve real-world *problems* involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins?*	**LC.5.NF.B.7** Divide unit fractions by whole numbers and whole numbers by unit fractions.
5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real-world problems (e.g., convert 5 cm to 0.05 m; 9 ft to 108 in).	**LC.5.MD.A.1a** Convert measurements of time. **LC.5.MD.A.1b** Convert standard measurements of length. **LC.5.MD.A.1c** Convert standard measurements of mass. **LC.5.MD.A.1d** Solve problems involving conversions of standard measurement units when finding area, volume, time lapse, or mass.

Grade 5 Math	
Louisiana Student Standards	**Louisiana Connectors (LC)**
5.MD.B.2 Make a line plot to display a data set of measurements in fractions of a unit ($1/2$, $1/4$, $1/8$). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*	**LC.5.MD.B.2** Given a data set of fractions with denominators 2, 4, or 8, create a line plot and use the information on the plot to solve problems.
5.MD.C.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement. a. A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. b. A solid figure that can be packed without gaps or overlaps using *n* unit cubes is said to have a volume of *n* cubic units.	**LC.5.MD.C.3** Select a cube as the measurement unit for the volume.
5.MD.C.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	**LC.5.MD.C.4** Use cubes (blocks or other manipulatives) to create a solid figure and counts the number of cubes to determine its volume.

Grade 5 Math	
Louisiana Student Standards	**Louisiana Connectors (LC)**
5.MD.C.5 Relate volume to the operations of multiplication and addition and solve real-world and mathematical problems involving volume. a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. b. Apply the formulas V = l × w × h and V = b × h for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real-world and mathematical problems. **c.** Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real-world problems.	**LC.5.MD.C.5a** Use filling and multiplication to determine volume. **LC.5.MD.C.5b** Apply formula to solve one step problems involving volume. **LC.5.MD.C.5c** Decompose complex 3-D shapes into simple 3-D shapes to measure volume.
5.G.A.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number in the ordered pair indicates how far to travel from the origin in the direction of one axis, and the second number in the ordered pair indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).	**LC.5.G.A.1a** Locate the x and y axis on a graph. **LC.5.G.A.1b** Locate points on a graph. **LC.5.G.A.1c** Use order pairs to graph given points.

Grade 5 Math	
Louisiana Student Standards	**Louisiana Connectors (LC)**
5.G.A.2 Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	**LC.5.G.A.2** Find coordinate values of points in the context of a situation**.**
5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. *For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.*	**LC.5.G.B.3** Recognize properties of simple plane figures.
5.G.B.4 Classify quadrilaterals in a hierarchy based on properties. (Students will define a trapezoid as a quadrilateral with at least one pair of parallel sides.)	**LC.5.G.B.4** Distinguish quadrilaterals by their properties.