Fifth Grade Kansas College & Career Readiness Standards for MATH

Record keeping of implementation: PINK= WEEKLY (Once or Twice/Week) BLUE=DAILY (3 or MORE X/Week) ALL OTHERS=Dates Listed

Operations and Algebraic Thinking: Numerical Expressions																								
OA1	Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.																							
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OA2	Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.																							
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Operations and Algebraic Thinking: Pattern Analysis																								
OA3	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.																							
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Number and Operations in Base Ten: Place Value System																								
NBT1	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.																							
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NBT2	Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.																							
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NBT3	Read, write, and compare decimals to thousandths.																							
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NBT3a	Read and write decimals to thousandths using base-ten numerals, number names, and expanded form																							
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NBT3b	Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of																							
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NBT4	Use place value understanding to round decimals to any place																							
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Number and Operations in Base Ten: Operations with decimals up to hundredths																								
NBT5	Fluently multiply multi-digit whole numbers using the standard algorithm.																							
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NBT6	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, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.																							
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NBT7	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; relate the strategy to a written method and explain the reasoning used.
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Number and Operations-Fractions: Adding and subtracting with equivalent fractions	
NF1	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.
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NF2	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. Use benchmark fractions and number sense of fractions
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Number and Operations-Fractions: Multiplying and dividing fractions	
NF3	Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers
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NF4	Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
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NF4a	Interpret the product (a/b) _ q as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations a _ q ÷ b.
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NF4b	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. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
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NF5	Interpret multiplication as scaling (resizing), by:
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NF5a	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.
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NF5b	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); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence a/b = (n_a)/(n_b) to the effect of multiplying a/b by 1.																								
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NF6	Solve real world problems involving multiplication of fractions and mixed numbers,																								
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NF7	Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.1																								
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NF7a	Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.																								
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NF7b	Interpret division of a whole number by a unit fraction, and compute such quotients.																								
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NF7c	Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions,																								
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Measurement and Data: Unit Conversion																									
MD1	Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.																								
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Measurement and Data: Working with Data																									
MD2	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.																								
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Measurement and Data: Volume																									
MD3	Recognize volume as an attribute of solid figures and understand concepts of volume measurement.																								
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MD3a	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.																								
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MD3b	A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.																								
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MD4	Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.																								
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MD5	Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.																								
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MD5a	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,																								
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MD5b	Apply the formulas V=l_w_handV=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.																								
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MD5c	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.																								
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Geometry: Graphing points on the coordinate plane																									
G1	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 indicates how far to travel from the origin in the direction of one axis, and the second number 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).																								
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G2	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.																								
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Geometry: Classifying two-dimensional figures																									
G3	Understand that attributes belonging to a category of two- dimensional figures also belong to all subcategories of that category																								
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G4	Classify two-dimensional figures in a hierarchy based on properties.																								
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