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Tennessee Mathematics Standards 2016, Grade 5 Alignments to SuccessMaker

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Tennessee Mathematics Standards Code	Tennessee Mathematics Standards 2016, Grade 5	SuccessMaker Item Description	Item ID
5.NBT	Number and Operations in Base Ten		
5.NBT.A	Understand the place value system.		
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.	Identify the place and the value of a digit in a number; for that value, identify the number 10 times as much and the number 1/10 as much.	SMMA_LO_02045
5.NBT.A.2	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.	Identify the location of the decimal point of the product of two decimals (factors, tenths to hundredths).	SMMA_LO_00222
		Multiply one- to five-digit whole numbers by powers of ten (10 to 100,000).	SMMA_LO_01078
		Explain patterns in the number of zeroes of the product and in the placement of the decimal point when multiplying a number by powers of ten.	SMMA_LO_02046
		Multiply decimals by 10, 100, or 1000.	SMMA_LO_00235
5.NBT.A.3	Read and write decimals to thousandths using standard form, word form, and expanded form (e.g., the expanded form of 347.392 is written as 3 x 100 + 4 x 10 + 7 x 1 + 3 x (1/10) + 9 x (1/100) + 2 x (1/1000)). Compare two decimals to thousandths based on meanings of the digits in each place and use the symbols >, =, and < to show the relationship.	Match a decimal number to its word me (to thousandths).	SMMA_LO_00227
		Compare decimal numbers (to thousandths).	SMMA_LO_00225
		Match the word name with the decimal number (0.10 to 9.99).	SMMA_LO_00204
5.NBT.A.4	Round decimals to the nearest hundredth, tenth, or whole number using understanding of place value.	Round a decimal to the nearest tenth, hundredth, or whole number.	SMMA_LO_00230
5.NBT.B	Perform operations with multi-digit whole numbers and with decimals to hundredths. (See Table 3 - Properties of Operations)		
5.NBT.B.5	Fluently multiply multi-digit whole numbers (up to three-digit by four-digit factors) using appropriate strategies and algorithms.		
5.NBT.B.6	Find whole-number quotients and remainders 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.	Model the multiplication of two fractions; complete an equation to show the product; interpret a real-world context that can be modeled by this equation.	SMMA_LO_02054
		Use an area model to solve a multiplication problem (two-digit factors).	SMMA_LO_01734
		Divide (combinations 6 x 20 to 9 x 90).	SMMA_LO_00293
		Model multiplication of a whole number by a fraction; complete an equation to show the product; interpret a real-world context that can be modeled by this equation.	SMMA_LO_02048
		Divide (combinations 2 x 20 to 5 x 90, three-digit dividend, one or two-digit divisor, noremainder).	SMMA_LO_00291

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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 operations; assess the reasonableness of answers using estimation strategies. (Limit division problems so that either the dividend or the divisor is a whole number.)	Add decimals numbers using mental math (sums 1.0 to 99.8, regrouping).	SMMA_LO_00217
		Identify the best estimate of a sum, difference, or product.	SMMA_LO_00231
		Subtract decimals numbers (minuends and subtrahends 0.01 to 9.99).	SMMA_LO_00207
		Add or subtract decimals using mental math (sums less than 1.00, with or without regrouping).	SMMA_LO_00210
		Subtract metric length or weight measurements expressed as decimals (to tenths, difference 1.2 to 8.9, regrouping).	SMMA_LO_00159
		Add decimals using addition facts (sums 0.02-0.99).	SMMA_LO_00206
		Multiply decimals displayed horizontally (0.2 x 0.6 to 0.9 x 0.12).	SMMA_LO_00232
		Divide a decimal by a decimal (horizontal division; dividends to tenths).	SMMA_LO_00237
		Align the decimal numbers in a vertical addition problem; then solve (hundredths, regrouping).	SMMA_LO_00211
		Multiply two decimals or multiply a decimal by a whole number (tenths to hundredths).	SMMA_LO_00223
		Match the word name with the decimal number (0.10 to 9.99).	SMMA_LO_00204
5.NF	Number and Operations - Fractions		
5.NF.A	Use equivalent fractions as a strategy to add and subtract fractions. (See Table 1 - Addition and Subtraction Situations for whole number situations that can be applied to fractions)		
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.		
5.NF.A.2	Solve contextual problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.	Identify the best estimate of a sum, difference, or product.	SMMA_LO_00231
		Estimate the difference of two fractions.	SMMA_LO_01707
		Model the multiplication of two fractions; complete an equation to show the product; interpret a real-world context that can be modeled by this equation.	SMMA_LO_02054
		Model multiplication of a whole number by a fraction; complete an equation to show the product; interpret a real-world context that can be modeled by this equation.	SMMA_LO_02048
		Determine the sale price of an item when the price is reduced by one-half, one-third, or one-fourth.	SMMA_LO_01285

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5.NF.B	Apply and extend previous understandings of multiplication and division to multiply and divide fractions. (See Table 2 - Multiplication and Division Situations for whole number situations that can be applied to fractions)		
5.NF.B.3	Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve contextual problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers by using visual fraction models or equations to represent the problem.	Model a division word problem that results in a rational quotient; then express the word problem with an equation.	SMMA_LO_02047
		Model the multiplication of two fractions; complete an equation to show the product; interpret a real-world context that can be modeled by this equation.	SMMA_LO_02054
		Model multiplication of a whole number by a fraction; complete an equation to show the product; interpret a real-world context that can be modeled by this equation.	SMMA_LO_02048
		Model the division of a unit fraction by a nonzero whole number, and compute the quotient.	SMMA_LO_02052
5.NF.B.4	Apply and extend previous understandings of multiplication to multiply a fraction by a whole number or a fraction by a fraction.	Model the multiplication of two fractions; complete an equation to show the product; interpret a real-world context that can be modeled by this equation.	SMMA_LO_02054
		Model multiplication of a whole number by a fraction; complete an equation to show the product; interpret a real-world context that can be modeled by this equation.	SMMA_LO_02048
5.NF.B.4.a	Interpret the product a/b x q as a x (q ÷ b) (partition the quantity q into b equal parts and then multiply by a). Interpret the product a/b x q as (a x q) ÷ b (multiply a times the quantity q and then partition the product into b equal parts).		
5.NF.B.4.b	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.	Find the area of a rectangle with fractional side lengths in two ways: by multiplying its side lengths and by tiling it with smaller rectangles.	SMMA_LO_02049
5.NF.B.5	Interpret multiplication as scaling (resizing).		
5.NF.B.5.a	Compare 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.		
5.NF.B.5.b	Explain 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); explain why multiplying a given number by a fraction less than 1 results in a product less than the given number; and relate the principle of fraction equivalence a/b = $(a \times n)/(b \times n)$ to the effect of multiplying a/b by 1.	Find the missing numerator or denominator in an equivalent fraction (simplified fractions 1/2 to 3/4).	SMMA_LO_00451
		Find an equivalent fraction of a simplified fraction (simplified fractions 1/2 to 8/9).	SMMA_LO_00457
		Find the missing numerator or denominator in an equivalent fraction (simplified fractions 1/2 to 7/8).	SMMA_LO_00453

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5.NF.B.6	Solve real-world problems involving multiplication of fractions and mixed numbers by using visual fraction models or equations to represent the problem.	Model a division word problem that results in a rational quotient; then express the word problem with an equation.	SMMA_LO_02047
		Identify the missing information needed to solve a multiplication problem in context; then solve the problem.	SMMA_LO_01283
		Model the multiplication of two fractions; complete an equation to show the product; interpret a real-world context that can be modeled by this equation.	SMMA_LO_02054
		Model multiplication of a whole number by a fraction; complete an equation to show the product; interpret a real-world context that can be modeled by this equation.	SMMA_LO_02048
		Solve a problem in context that involves adding three amounts expressed as dollars and cents.	SMMA_LO_01608
		Determine the sale price of an item when the price is reduced by one-half, one-third, or one-fourth.	SMMA_LO_01285
		Model the division of a unit fraction by a nonzero whole number, and compute the quotient.	SMMA_LO_02052
5.NF.B.7	Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.		
5.NF.B.7.a	Interpret division of a unit fraction by a non-zero whole number and compute such quotients.	Model the division of a unit fraction by a nonzero whole number, and compute the quotient.	SMMA_LO_02052
5.NF.B.7.b	Interpret division of a whole number by a unit fraction and compute such quotients.		
5.NF.B.7.c	Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions by using visual fraction models and equations to represent the problem.	Model a division word problem that results in a rational quotient; then express the word problem with an equation.	SMMA_LO_02047
		Identify the missing information needed to solve a multiplication problem in context; then solve the problem.	SMMA_LO_01283
		Model the multiplication of two fractions; complete an equation to show the product; interpret a real-world context that can be modeled by this equation.	SMMA_LO_02054
		Model multiplication of a whole number by a fraction; complete an equation to show the product; interpret a real-world context that can be modeled by this equation.	SMMA_LO_02048
		Solve a problem in context that involves adding three amounts expressed as dollars and cents.	SMMA_LO_01608
		Model the division of a unit fraction by a nonzero whole number, and compute the quotient.	SMMA_LO_02052
5.MD	Measurement and Data		
5.MD.A	Convert like measurement units within a given measurement system from a larger unit to a smaller unit.		

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5.MD.A.1	Convert customary and metric measurement units within a single system by expressing measurements of a larger unit in terms of a smaller unit. Use these conversions to solve multi-step real-world problems involving distances, intervals of time, liquid volumes, masses of objects, and money (including problems involving simple fractions or decimals).		
5.MD.B	Represent and interpret data.		
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.		
5.MD.C	Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.		
5.MD.C.3	Recognize volume as an attribute of solid figures and understand concepts of volume measurement.		
5.MD.C.3.a	Understand that 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.	Identify a unit cube and what attribute it is used to measure.	SMMA_LO_02041
5.MD.C.3.b	Understand that 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.	Identify a unit cube and what attribute it is used to measure.	SMMA_LO_02041
5.MD.C.4	Measure volume by counting unit cubes, using cubic centimeters, cubic inches, cubic feet, and improvised units.	Identify a unit cube and what attribute it is used to measure.	SMMA_LO_02041
		Find the volume of a prism by packing the prism with unit cubes.	SMMA_LO_02042
5.MD.C.5	Relate volume to the operations of multiplication and addition and solve real-world and mathematical problems involving volume of right rectangular prisms.	Determine the volume of a box given the height, width, and length (60 to 480 customary or metric cubic units).	SMMA_LO_00174
5.MD.C.5.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 whole-number products of three factors as volumes (e.g., to represent the associative property of multiplication).	Find the volume of a prism by packing the prism with unit cubes.	SMMA_LO_02042
		Determine the volume of a box given the height, width, and length (60 to 480 customary or metric cubic units).	SMMA_LO_00174
5.MD.C.5.b	Know and apply the formulas V = l x w x h and V = B x h (where B represents the area of the base) 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.	Identify the missing information needed to solve a multiplication problem in context; then solve the problem.	SMMA_LO_01283
		Compute the volume of right rectangular prisms using formulas.	SMMA_LO_02043
		Solve a problem in context that involves adding three amounts expressed as dollars and cents.	SMMA_LO_01608
		Determine the volume of a box given the height, width, and length (60 to 480 customary or metric cubic units).	SMMA_LO_00174

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5.MD.C.5.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.	Identify the missing information needed to solve a multiplication problem in context; then solve the problem.	SMMA_LO_01283
		Solve a problem in context that involves adding three amounts expressed as dollars and cents.	SMMA_LO_01608
		Find the volume of a three-dimensional figure by decomposing that figure into two right rectangular prisms and then adding those prisms' volumes.	SMMA_LO_02044
5.G	Geometry		
5.G.A	Graph points on the coordinate plane to solve real-world and mathematical problems.		
5.G.A.1	Graph ordered pairs and label points using the first quadrant of the coordinate plane. Understand in the ordered pair that the first number indicates the horizontal distance traveled along the x-axis from the origin and the second number indicates the vertical distance traveled along the y-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).		
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.	Graph a point on a coordinate grid (Quadrant I).	SMMA_LO_01735
5.G.B	Classify two-dimensional figures into categories based on their properties.		
5.G.B.3	Classify two-dimensional figures in a hierarchy based on properties. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.		