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Ohio Mathematics Learning Standards, Grade 5 Alignments to SuccessMaker

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Ohio Mathematics Standard Codes	Ohio Mathematics Learning Standards, Grade 5	SuccessMaker Item Description	Item ID
OH.Math.5.NBT	**Number and Operations in Base Ten**		
OH.Math.5.NBT.A	**Understand the place value system.**		
OH.Math.5.NBT.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
OH.Math.5.NBT.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
OH.Math.5.NBT.3	Read, write, and compare decimals to thousandths.		
OH.Math.5.NBT.3a	Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).	Match a decimal number to its word me (to thousandths).	SMMA_LO_00227
		Match the word name with the decimal number (0.10 to 9.99).	SMMA_LO_00204
OH.Math.5.NBT.3b	Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	Match a decimal number to its word me (to thousandths).	SMMA_LO_00227
		Enter a decimal number in a place-value chart (tenths to thousandths).	SMMA_LO_01089
		Compare decimal numbers (to thousandths).	SMMA_LO_00225
OH.Math.5.NBT.4	Use place value understanding to round decimals to any place, millions through hundredths.	Round a decimal to the nearest tenth, hundredth, or whole number.	SMMA_LO_00230
OH.Math.5.NBT.B	**Perform operations with multi-digit whole numbers and with decimals to hundredths.**		
OH.Math.5.NBT.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, 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

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		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
OH.Math.5.NBT.7	Solve real-world problems by adding, subtracting, multiplying, and dividing decimals using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction, or multiplication and division; relate the strategy to a written method and explain the reasoning used.	Add decimals numbers using mental math (sums 1.0 to 99.8, regrouping).	SMMA_LO_00217
		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
OH.Math.5.NF	**Number and Operations—Fractions**		
OH.Math.5.NF.A	**Use equivalent fractions as a strategy to add and subtract fractions. (Fractions need not be simplified).**		
OH.Math.5.NF.2	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 to estimate mentally and assess the reasonableness of answers.	Identify the best estimate of a sum, difference, or product.	SMMA_LO_00231
		Model a division word problem that results in a rational quotient; then express the word problem with an equation.	SMMA_LO_02047
		Estimate the difference of two fractions.	SMMA_LO_01707

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		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
		Model the division of a unit fraction by a nonzero whole number, and compute the quotient.	SMMA_LO_02052
OH.Math.5.NF.B	**Apply and extend previous understandings of multiplication and division to multiply and divide fractions. (Fractions need not be simplified).**		
OH.Math.5.NF.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.	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
OH.Math.5.NF.4	Apply and extend previous understandings of multiplication to multiply a fraction or whole number 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
OH.Math.5.NF.4b	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
OH.Math.5.NF.5	Interpret multiplication as scaling (resizing).		

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OH.Math.5.NF.5b	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); 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 $a/b = (n \times a)/(n \times b)$ 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
OH.Math.5.NF.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.	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
OH.Math.5.NF.7	Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. In general, students able to multiply fractions can develop strategies to divide fractions, by reasoning about the relationship between multiplication and division, but division of a fraction by a fraction is not a requirement at this grade.		
OH.Math.5.NF.7a	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
OH.Math.5.NF.7b	Interpret division of a whole number by a unit fraction, and compute such quotients.		

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OH.Math.5.NF.7c	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.	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
OH.Math.5.MD	**Measurement and Data**		
OH.Math.5.MD.C	**Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.**		
OH.Math.5.MD.3	Recognize volume as an attribute of solid figures and understand concepts of volume measurement.		
OH.Math.5.MD.3a	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
OH.Math.5.MD.3b	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
OH.Math.5.MD.4	Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, 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
OH.Math.5.MD.5	Relate volume to the operations of multiplication and addition and solve real-world and mathematical problems involving volume.		
OH.Math.5.MD.5a	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.	Find the volume of a prism by packing the prism with unit cubes.	SMMA_LO_02042

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		Determine the volume of a box given the height, width, and length (60 to 480 customary or metric cubic units).	SMMA_LO_00174
OH.Math.5.MD.5b	Apply the formulas $V = \ell \times w \times h$ and $V = B \times h$ 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.	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
OH.Math.5.MD.5c	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
OH.Math.5.G	**Geometry**		
OH.Math.5.G.A	**Graph points on the coordinate plane to solve real-world and mathematical problems.**		
OH.Math.5.G.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