Year at a Glance: Math - Gr. 5 Student Learning Objectives Clustered by Unit

DOCUMENT KEY: WALT (That) ... indicates a concept. WALT (To) ... indicates a skill.

Key

Focus - Explicit Instruction and Assessment	(green)
Revisited and Reinforced	(yellow)
Not Addressed in the Unit	

NJSLS	SLO	Units	Unit 1 – Operations on Decimals and Numerical Expression		Unit 2 – Decimal Multiplication & Division and Volume Concepts			Unit 3 – Fractions		Unit 4 – The Coordinate System and Classifying Two-Dimensional Figures	
			1A	1B	2A	2B	2C	3A	3B	4A	4B
OPERATIONS and ALGEBRAIC THINKING											
5.OA.A.1 A. Write and interpret numerical expressions. 1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	WALT evaluate numerical expressions with parentheses, brackets, and braces, including expressions containing fractions and decimals)	1, 4		■						■	
	WALT use parentheses, brackets, or braces to group parts of a numerical expression	1, 4		■						■	
5.OA.A.2 A. Write and interpret numerical expressions. 2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. *For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.*	WALT write simple numerical expressions from a description that record calculations with numbers	1, 4		■						■	
	WALT interpret numerical expressions to compare their values without evaluating them	1, 4		■						■	
5.OA.B.3 B. Analyze patterns and relationships. 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.*	WALT generate two numerical patterns using two given rules and identify relationships between corresponding terms in the patternss	4								■	
	WALT form ordered pairs consisting of corresponding terms from the two patterns and graph the ordered pairs on a coordinate plane	4								■	
NUMBERS and OPERATIONS in BASE TEN											
5.NBT.A.1 A. Understand the place value system. 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.	WALT recognize in a multi-digit number that a digit is 10 times the value of the digit to its right	1	■								
	WALT recognize in a multi-digit number that a digit is 1/10 the value of the digit to its left	1	■								
5.NBT.A.2 A. Understand the place value system. 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.	WALT explain patterns in the number of zeros of the product when multiplying by powers of 10	2			■						
	WALT explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10	2			■						
	WALT denote powers of 10 by using whole-number exponents	2			■						
5.NBT.A.3.a A. Understand the place value system. 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 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).	WALT read decimals to thousandths using base-ten numerals, number names, and expanded form	1	■								
	WALT write decimals to thousandths using base-ten numerals, number names, and expanded form	1	■								

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Key		Unit 1 Operations on Decimals and Numerical Expression	Unit 2 Decimal Multiplication & Division and Volume Concepts	Unit 3 Fractions	Unit 4 The Coordinate System and Classifying Two-Dimensional Figures
	Focus - Explicit Instruction and Assessment				
	Revisited and Reinforced				
	Not Addressed in the Unit				

NJSLS	SLO	Units	1A	1B	2A	2B	2C	3A	3B	4A	4B
5.NBT.A.3.b A. Understand the place value system. 3. Read, write, and compare decimals to thousandths. b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	WALT Compare two decimals to thousandths based on place value understanding	1	■								
	WALT record comparisons of two decimals to thousandths using >, < or =	1	■								
5.NBT.A.4 A. Understand the place value system. 4. Use place value understanding to round decimals to any place.	WALT round decimals to any place using place value understanding	1	■								
5NBT.B.5 B. Perform operations with multi-digit whole numbers and with decimals to hundredths. 5. Fluently multiply multi-digit whole numbers using the standard algorithm.	WALT multiply multi-digit whole numbers using the standard algorithm working towards accuracy and efficiency	2			■						
5.NBT.B.6 B. Perform operations with multi-digit whole numbers and with decimals to hundredths. 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.	WALT find whole-number quotients with up to four-digit dividends and two-digit divisors using strategies based on place value	2				■					
	WALT find whole-number quotients with up to four-digit dividends and two-digit divisors using strategies based on properties of operations or the relationship between multiplication and division	2				■					
	WALT illustrate and explain the division calculation by using equations, rectangular arrays, and/or area models	2				■					
5.NBT.B.7 B. Perform operations with multi-digit whole numbers and with decimals to hundredths. 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; relate the strategy to a written method and explain the reasoning used.	WALT add and subtract decimals to hundredths using concrete models or drawings	2		■							
	WALT add and subtract decimals to hundredths using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction	2		■							
	WALT multiply decimals to hundredths using models or drawings	2			■						
	WALT multiply decimals to hundredths using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction	2			■						
	WALT relate the strategy to the concrete model or drawing, and explain the reasoning used	1, 2		■							
	WALT divide decimals to hundredths using models or drawings	2			■						
	WALT divide decimals to hundredths using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction	2				■					
	WALT relate the strategy to the concrete model or drawing, and explain the reasoning used	2				■					

| **NUMBER and OPERATIONS - FRACTIONS** |

| | | | Year at a Glance: Math - Gr. 5 Student Learning Objectives Clustered by Unit | | | | | | | | | | |

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DOCUMENT KEY: WALT (That) ... indicates a concept. WALT (To) ... indicates a skill.				Unit 1 Operations on Decimals and Numerical Expression		Unit 2 Decimal Multiplication & Division and Volume Concepts			Unit 3 Fractions		Unit 4 The Coordinate System and Classifying Two-Dimensional Figures	

Key	Focus - Explicit Instruction and Assessment
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NJSLS	SLO	Units	1A	1B	2A	2B	2C	3A	3B	4A	4B
5.NF.A.1 A. Use equivalent fractions as a strategy to add and subtract fractions. 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.)*	WALT when adding or subtracting fractions, replacing given fractions with equivalent fraction produces an equivalent sum or difference of fractions with like denominators	3						■			
	WALT add and subtract fractions with unlike denominators, including mixed numbers, by replacing given fractions with equivalent fraction	3						■			
5.NF.A.2 A. Use equivalent fractions as a strategy to add and subtract fractions. 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. *For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.*	WALT solve word problems involving addition and subtraction of fractions including those with unlike denominators referring to the same whole	3						■			
	WALT benchmark fractions and number sense can be used in estimating and assessing the reasonableness of answers to word problems involving addition and subtraction of fractions	3						■			
5.NF.B.3 B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions. 3. Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ 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?*	WALT interpret a fraction as division of the numerator by the denominator using visual fraction models or equations	3							■		
	WALT solve word problems involving division of whole numbers resulting in a fraction or mixed number quotient	3							■		
5.NF.B.4.a B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions. 4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. a. 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. *For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.)*	WALT apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction	3							■		
	WALT interpret the product (a/b) × q as a part of a partition of q into b equal parts; equivalently, as the result of a sequence of operations a × q ÷ b **	3							■		
	WALT interpret the product of a fraction and a fraction as (a/b) × (c/d) = ac/bd **	3							■		
5.NF.A.4.b B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions. 4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. 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	WALT tile a rectangle using the appropriate fractional unit square in order to find the area of a rectangle that has fractional side lengths	3							■		
	WALT show that the area found by tiling would be that same as multiplying the side lengths	3							■		
	WALT multiply fractional side lengths to find areas of rectangles	3							■		

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NJSLS	SLO	Units	1A	1B	2A	2B	2C	3A	3B	4A	4B
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.	WALT represent fraction products as rectangular areas	3							■		
5.NF.B.5.a B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions. 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.	WALT interpret multiplication as scaling (resizing) by comparing the size of a product to the size of one factor without performing the multiplication	3							■		
5.NF.B.5.b B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions. 5. Interpret multiplication as scaling (resizing), by: 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); 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.	WALT explain why multiplying a given number by a fraction greater than one results in a product greater than one and why multiplying a given number by a fraction less than one results in a product smaller than the given number	3							■		
	WALT multiplying a fraction a/b by n/n (a/b = (n × a)/(n × b)) has the same effect as multiplying a/b by 1 and creates an equivalent fraction	3							■		
5.NF.B.6 B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions. 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.	WALT real world problems involving multiplication of fractions and mixed numbers	3							■		
5.NF.B.7.a B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions. 7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.1 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.*	WALT compute and interpret the quotients of a unit fraction by a non-zero whole number **	3							■		

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NJSLS	SLO	Units	1A	1B	2A	2B	2C	3A	3B	4A	4B
5.NF.B.7.b B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions. 7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.1 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.*	WALT compute and interpret the quotients of a non-zero whole number by a unit fraction **	3							🟩		
5.NF.B.7.c B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions. 7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.1 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?*	WALT solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions**	3							🟩		
MEASUREMENT and DATA											
5.MD.A.1 A. Convert like measurement units within a given measurement system. 1. 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.	WALT convert among different-sized standard measurement units within a given measurement system	2			🟩						
	WALT use conversions in solving multi-step, real world problems	2			🟩						
5.MD.B.2 B. Represent and interpret data. 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.*	WALT make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8)	3							🟩		
	WALT use operations with fractions to solve problems involving information presented in line plots	3							🟩		
5.MD.C.3.a C. Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. 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.	WALT a cube with side length 1 unit is called a "unit cube", has "one cubic unit" of volume, and can be used to measure volume	2					🟩				

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5.MD.C.3.b C. Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. 3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement. b. 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.	WALT a solid figure which can be packed without gaps or overlaps using (n) unit cubes has a volume of n cubic units	2					■				
5.MD.C.4 C. Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. 4. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and non-standard units.	WALT measure volumes by counting unit cubes, using cubic cm, cubic in., cubic ft., and non-standard units	2					■				
5.MD.C.5.a C. Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. 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.	WALT 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	2					■				
	WALT represent volumes as the product of three whole numbers	2					■				
5.MD.C.5.b C. Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. 5. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. 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.	WALT 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	2					■				
5.MD.C.5.c C. Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. 5. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. 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.	WALT recognize volume as additive and 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	2					■				
GEOMETRY											
5.G.A.1 A. Graph points on the coordinate plane to solve real-world and mathematical problems. 1. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin)	WALT a coordinate system is defined by a pair of perpendicular lines called axes with the intersection of the lines, the origin, occurring at 0 on each line	4								■	
	WALT a given point in the coordinate plane is located using an ordered pair of numbers called coordinates	4								■	

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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).	WALT the first number in an ordered pair 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.	4								■	
	WALT the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate)	4								■	
5.G.A.2 A. Graph points on the coordinate plane to solve real-world and mathematical problems. 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.	WALT Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane	4								■	
	WALT interpret coordinate values of points in the context of the real world and mathematical problems	4								■	
5.G.B.3 B. Classify two-dimensional figures into categories based on their properties. 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.*	WALT the attributes belonging to a category of two-dimensional figures also belong to all subcategories	4									■
5.G.B.4 B. Classify two-dimensional figures into categories based on their properties. 4. Classify two-dimensional figures in a hierarchy based on properties.	WALT classify two-dimensional figures in a hierarchy based on properties	4									■