Grade 3 Yearlong Mathematics Map

Resources: Approved from Board of Education	**Assessments:** PARCC Assessments, Performance Series, District Benchmark Assessments

Common Core State Standards – Standards for Mathematical Practice:

1. Make sense of problems and persevere in solving them.	2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.	4. Model with mathematics.
5. Use appropriate tools strategically.	6. Attend to precision.
7. Look for and make use of structure.	8. Look for and express regularity in repeated reasoning.

Domain	Cluster	Common Core Standard	Content	Skills	Academic Vocabulary
OA	Represent and solve problems involving multiplication and division.	3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5 × 7.	Multiplication	3.OA.1: Interpret a multiplication sentence of whole numbers.	Arrays, groups, *sets,* product, factor.
OA	Represent and solve problems involving multiplication and division.	3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5 × 7.	Multiplication	3.OA.1: Describe a context in which a total number of objects can be expressed as a multiplication equation.	Arrays, groups, *sets,* product, factor.
OA	Represent and solve problems involving multiplication and division.	3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.	Division	3.OA.2: Interpret a division sentence of whole numbers.	Equal groups, division, divisor, quotient

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OA	Represent and solve problems involving multiplication and division.	3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	Multiplication Division	3.OA.3: Solve multiplication or division word problems within 100. (arrays, equal groups, and measurement quantities).	
OA	Represent and solve problems involving multiplication and division.	3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = _ ÷ 3, 6 × 6 = ?	Multiplication Division	3.OA.4: Solve for the unknown whole number in a given multiplication or division equation.	factor, product, dividend, quotient, divisor, division
OA	Understand properties of multiplication and the relationship between multiplication and division.	3.OA.5 Apply properties of operations as strategies to multiply and divide.2 Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)	Multiplication Properties & Division	3.OA.5: Apply properties of operations as a strategy to solve multiplication problems.	Note: Students **DON'T** need to use **formal** names of the properties!

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OA	Understand properties of multiplication and the relationship between multiplication and division.	3.OA.5 Apply properties of operations as strategies to multiply and divide.2 Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)	Multiplication Properties & Division	3.OA.5: Relate properties of multiplication as a strategy to solve division problems.	
OA	Understand properties of multiplication and the relationship between multiplication and division.	3.OA.6 Understand division as an unknown-factor problem. For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.	Division	3.OA.6: Apply the relationship between multiplication and division to solve a division problem.	
OA	Multiply and divide within 100.	3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	Multiplication	3.OA.7: Multiply within 100 by implementing strategies or properties of operations. (*By the end of Grade 3, know from memory all products of two one-digit numbers.*)	fact family
OA	Multiply and divide within 100.	3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	Division	3.OA.7: Divide within 100 by implementing strategies or properties of operations. (*By the end of Grade 3, know from memory all products of two one-digit numbers.*)	*fact family*

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OA	Solve problems involving the four operations, and identify and explain patterns in arithmetic.	3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.3	Problem solving	3.OA.8: Solve two-step word problems using the four operations.	
OA	Solve problems involving the four operations, and identify and explain patterns in arithmetic.	3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.3	Problem solving	3.OA.8: Represent two-step problems using equations with a letter standing for the unknown quantity.	
OA	Solve problems involving the four operations, and identify and explain patterns in arithmetic.	3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.3	Problem solving	3.OA.8: Assess the reasonableness of answers.	*estimation rounding*
OA	Solve problems involving the four operations, and identify and explain patterns in arithmetic.	3.OA.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.	Arithmetic patterns	3.OA.9: Identify arithmetic patterns (including patterns in the addition table or multiplication table).	
OA	Solve problems involving the four operations, and identify and explain patterns in arithmetic.	3.OA.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.	Arithmetic patterns	3.OA.9: Explain arithmetic patterns using properties of operations.	

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NBT	Use place value understanding and properties of operations to perform multi-digit arithmetic.[1]	3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.	Place Value	3.NBT.1: Round whole numbers to the nearest 10.	
NBT	Use place value understanding and properties of operations to perform multi-digit arithmetic.[2]	3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.	Place Value	3.NBT.1: Round whole numbers to the nearest 100.	
NBT	Use place value understanding and properties of operations to perform multi-digit arithmetic.[1]	3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	Addition	3.NBT.2: Add (fluently) within 1000 using strategies and algorithms.	
NBT	Use place value understanding and properties of operations to perform multi-digit arithmetic.[2]	3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	Subtraction	3.NBT.2: Subtract (fluently) within 1000 using strategies and algorithms.	
NBT	Use place value understanding and properties of operations to perform multi-digit arithmetic.[1]	3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.	Multiplication	3.NBT.3: Multiply one-digit whole numbers by multiples of 10 in the range 10–90 using strategies based on place value and properties of operations.	multiples

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NF	Develop understanding of fractions as numbers.	3.NF.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.	Fractions	Identify that a fraction 1/b is the quantity formed by 1 part when a whole is partitioned into b equal parts; identify that a fraction a/b as the quantity formed by a parts of size 1/b.	numerator, denominator
NF	Develop understanding of fractions as numbers.	3.NF.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram.	Fractions	3.NF.2 Identify and represent a fraction as a number on the number line	
NF	Develop understanding of fractions as numbers.	3.NF.2a Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.	Fractions	3.NF.2a Represent the denominator as equal sized parts on a number line where 0 to 1 is the whole.	
NF	Develop understanding of fractions as numbers.	3.NF.2b Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.	Fractions	3.NF.2b Represent a fraction by marking equal parts of the unit on the number line.	
NF	Develop understanding of fractions as numbers.	3.NF.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.	Fractions	3.NF.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.	
NF	Develop understanding of fractions as numbers.	3.NF.3a Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.	Fractions	3.NF.3a Identify two fractions as equivalent if they are the same size, or the same point on a number line.	Equivalent
NF	Develop understanding of fractions as numbers.	3.NF.3b Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model.	Fractions	3.NF.3b Recognize, generate and explain simple equivalent fractions using a visual fraction model.	
NF	Develop understanding of fractions as numbers.	3.NF.3c Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.	Fractions	3.NF.3c Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.	

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NF	Develop understanding of fractions as numbers.	3.NF.3d Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.	Fractions	3.NF.3d Compare two fractions with the same numerator or the same denominator by reasoning about their size. Use >, =, or < to record the results and justify the conclusions.	
MD	Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	Time Measurement	3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes.	
MD	Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	Time Measurement	3.MD.1 Solve word problems involving addition and subtraction of time intervals in minutes.	
MD	Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).1 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.2	Volume Measurement	3.MD.2 Measure and estimate liquid volume using standard units.	grams, kilograms, liters, volume

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MD	Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).1 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.2	Mass Measurement	3.MD.2 Measure and estimate masses of objects using standard units.	grams, kilograms, liters, *mass*
MD	Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).1 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.2	Measurement Word Problems	3.MD.2 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units	
MD	Represent and interpret data.	3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.	Data Interpretation	3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.	*number scale*
MD	Represent and interpret data.	3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.	Data Interpretation	3.MD.3 Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.	

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MD	Represent and interpret data.	3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.	Measurement	3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch.	
MD	Represent and interpret data.	3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.	Data Interpretation	3.MD.4 Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.	*line plot*
MD	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.	Area	3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.	Area
MD	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	3.MD.5a A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.	Area	3.MD.5a Identify that a square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.	square units
MD	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	3.MD.5b A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.	Area	3.MD.5b Identify that a plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.	

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MD	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).	Area	3.MD.6 Measure areas by counting unit squares	
MD	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	3.MD.7 Relate area to the operations of multiplication and addition.	Area	3.MD.7 Relate area to the operations of multiplication and addition.	
MD	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	3.MD.7a Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.	Area	3.MD.7a Find length and width using tiles and show that the area is the same as would be found by multiplying the side lengths.	
MD	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	3.MD.7b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.	Area	3.MD.7b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems.	
MD	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	3.MD.7b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.	Area	3.MD.7b Represent whole-number products as rectangular areas in mathematical reasoning.	

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MD	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	3.MD.7c Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning.	Area	3.MD.7c Represent and apply the distributive property in an area model using tiling.	
MD	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	3.MD.7d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.	Area	3.MD.7d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problem.	
MD	Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.	3.MD.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	Perimeter	3.MD.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	Perimeter
G	Reason with shapes and their attributes.	3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	Geometry	3.G.1 Distinguish that shapes in different categories may share attributes and that the shared attributes can define a larger category.	

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G	Reason with shapes and their attributes.	3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.	Geometry	3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.	