Grade 3 NRSD Curriculum Standards for Math

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		
NRSD Math Curriculum Standards - Grade 3	**Non-Reported Standard**	**PARCC Priority**
Operations and Algebraic Thinking (OA)		
Represent and solve problems involving multiplication and division.		*Major Cluster*
CC.3.OA.1 Interpret products of whole numbers (through 10X10). *For example, 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.*		
NRSD.3.OA.1.1 List and count the number of possible combinations of objects from two sets *For example, how many different outfits can one make from a set of two sweaters and a set of three skirts?*		
CC.3.OA.2 Interpret whole-number quotients of whole numbers. *For example, interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or vice versa. For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.*		
NRSD.3.OA.2.1 Relate multiplication problems to corresponding division problems. *For example, draw a model to represent 5 x 6 and 30 ÷ 6.*		
CC.3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. *e.g., using drawings and equations with a symbol for the unknown number to represent the problem. [Footnote: See Glossary, Table 2.]*		
NRSD.3.OA.3.1 Select and use appropriate operations (addition, subtraction, multiplication, and division) to solve problems, including equal groups, arrays, measurement quantities, and those involving money.		
NRSD.3.OA.3.2 Use multiplication to solve word problems up to two-digit number by a one-digit number.		

Operations and Algebraic Thinking (OA) - continued	Non-Reported Standard	PARCC Priority
NRSD.3.OA.3.3 Use division (within 100) to solve word problems in situations.		
NRSD.3.OA.4 Determine the value of a variable (through 10) in simple equations involving addition, subtraction, multiplication, or division *For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = ? ÷ 3, 6 × 6 = ?.*		
Understand properties of multiplication and the relationship between multiplication and division.		*Major Cluster*
NRSD.3.OA.5 Apply properties of operations as strategies to add, multiply, and divide. *Commutative Property Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known.* *Associative Property Examples: 3 × 5 × 2 can be found by 3 × 5 = 15 then 15 × 2 = 30, or by 5 × 2 = 10 then 3 × 10 = 30.* *Distributive Property Examples: 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.* *Identity Property Examples: 9 x 1 = 9, 1 x 562 = 562* *(Footnote: Students need not use formal terms for these properties.)*		
CC.3.OA.6 Understand division as an unknown-factor problem. *For example, divide 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.*		
Multiply and divide within 100.		*Major Cluster*
CC.3.OA.7 Fluently multiply and divide within 100 using strategies such as the relationship between multiplication and division or properties of operations. By the end of Grade 3, know from memory all products through 10 x 10. *e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8*		In-depth focus; Fluency
CC.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. *Clarification: This standard is limited to problems posed with whole numbers in having whole-number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations).*		
NRSD.3.OA.8.1 Assess the reasonableness of answers using mental computation and estimation strategies including rounding and regrouping to estimate quantities, measures, and the results of whole-number computations.		
NRSD.3.OA.8.2 Use addition and subtraction to solve word problems involving numbers up to 9,999.		

Operations and Algebraic Thinking (OA) - continued	**Non-Reported Standard**	**PARCC Priority**
NRSD.3.OA.8.3 Use multiplication to solve word problems up to two-digit number by a one-digit number.		
CC.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.*		
NRSD.3.OA.9a Create, describe, extend, and explain patterns involving multiplication (geometric), addition and subtraction (e.g., 2, 6, 10, …; and 50, 45, 40….).		
Number and Operations in Base Ten (NBT)		
Use place value understanding and properties of operations to perform multi-digit arithmetic. (Footnote: A range of algorithms may be used.)		*Additional Cluster*
NRSD.3.NBT.1.1 Use place value understanding to round whole numbers through 1,000 to the nearest 10, 100, or 1,000.		
NRSD.3.NBT.1.2 Exhibit an understanding of the values of the digits in the base ten number system by reading, modeling, and writing, comparing, and ordering whole numbers through 99,999.		
CC.3.NBT.2 Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. (Footnote: A range of algorithms may be used.)		Fluency
CC.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. (Footnote: A range of algorithms may be used.)		
Number and Operations - Fractions (NF) *(Footnote: Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.)*		
Develop understanding of fractions as numbers.		*Major Cluster*
CC.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.		
NRSD.3.NF.1a Identify, model, and represent fractions and/or mixed numbers (between 0 and 1 with denominators 2, 3, 4, 6, and 8) as parts of unit wholes and parts of groups.		
CC.3.NF.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram.		In-depth focus
CC.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.		

Number and Operations - Fractions (NF) - continued *(Footnote: Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.)*	**Non-Reported Standard**	**PARCC Priority**
CC.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.		
CC.3.NF.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.		
CC.3.NF.3a Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.		
CC.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.		
CC.3.NF.3c Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. For example, 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.		
CC.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.		
NRSD.3.NF.4 Model and Represent a mixed number with denominator 2,3,4,6 and 8. eg., 1 2/3, 2 1/4.)		
Measurement and Data (MD)		
Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.		*Major cluster*
CC.3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving elapsed time in minutes.		
CC.3.MD.2.1 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). *Footnote: Excludes compound units such as cm3 and finding the geometric volume of a container.*		In-depth focus
CC.3.MD.2.2 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, *e.g., using drawings (such as a beaker with a measurement scale) to represent the problem. (Footnote: Excludes multiplicative comparison problems (problems involving notions of "times as much." See Glossary, Table 2).)*		In-depth focus
Represent and interpret data.		*Supporting Cluster*
CC.3.MD.3.1 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.		

Measurement and Data (MD) - continued	Non-Reported Standard	PARCC Priority
CC.3.MD.3.2 Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. e.g., draw a bar graph in which each square in the bar graph might represent 5 pets.		
NRSD.3.MD.3.3 Construct and draw conclusions from representations of data sets in the forms of tables, line plots, pictographs, tallies and bar graphs.		
CC.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 with a horizontal scale is marked off in appropriate units-whole numbers halves or quarters.		
Geometric measurement: understand concepts of area and relate area to multiplication and to addition.		*Major cluster*
CC.3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.		
CC.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.		
CC.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.		
CC.3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).		
CC.3.MD.7 Relate area to the operations of multiplication and addition.		In-depth focus
CC.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.		
CC.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.		
CC.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.		
CC.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.		
Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.		*Additional Cluster*
CC.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 area or with the same area and different perimeter.		

Geometry (G)	**Non-Reported Standard**	**PARCC Priority**
Reason with shapes and their attributes.		*Supporting Cluster*
CC.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(quadrangles). *e.g., recognize rhombuses, rectangles, and squares as examples of quadrilaterals(quadrangles), and draw examples of quadrilaterals that do not belong to any of these subcategories.*		
CC.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 is 1/4 of the area of the shape.*		