PPS Math Report Card – Common Core State Standards Correlation

(The Common Core State Standards represented by report card language)

Report Card Language	Common Core State Standards
Operations and Algebraic Thinking	**Operations and Algebraic Thinking**
Understands multiplication as the total number of objects in equal sized groups. Understands that division requires separating the whole into equal sized groups/parts	**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.*
	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.*
Uses labeled sketches, models, and equations to solve multiplication and division word problems within 100. (e.g. 4xN = 40)	**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. (See Glossary)
	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, 6x6=?.*
Applies properties of operations (commutative, associative, distributive) as strategies to fluently multiply and divide within 100 (e.g. *3×5×2 can be found by 3×5=15, then 15 ×2 = 30 or 5x2=10 and 3x10=30)*	**3.OA.5** Apply properties of operations as strategies to multiply and divide. (Students need not use formal terms for these properties.) *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.)*
	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.*
	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.
Solves word problems involving the four operations, including using variables, and can determine the reasonableness of answers using mental computation and estimation strategies including rounding	**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. (This standard is limited to problems posed with whole numbers and 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).)
	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.*

Number and Operations in Base Ten	Number and Operations in Base Ten
Uses place value strategies and understandings, algorithms, and properties of operations to perform multi-digit addition and subtraction within 1000 fluently	**3.NBT.1** Use place value understanding to round whole numbers to the nearest 10 or 100.
	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.
Uses place value understanding and properties of operations to multiply one-digit numbers by multiples of 10 - e.g. 12x9 = (10x9) + (2x9)	**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.
Number and Operations Fractions	**Number and Operations - Fractions**
Understands that the numbers in a fraction represent a quantity partitioned into equal parts	**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*.
Understands fractional quantities and can order them on a number line	**3.NF.2** Understand a fraction as a number on the number line; represent fractions on a number line diagram. a. 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. b. 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.
Recognizes, creates and compares equivalent fractions, (e.g., 1/2=2/4, 4/6=2/3)	**3.NF.3** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. b. 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. c. 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.* d. 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.
Measurement and Data	**Measurement and Data**
Tells, writes, and measures time to the nearest minute. Solves word problems involving addition and subtraction of time	**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.
Measures and estimates liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Adds, subtracts, multiplies, or divides to solve one-step word problems involving masses or volumes	**3.MD.2** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). (Excludes compound units such as cm3 and finding the geometric volume of a container.) 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. [Excludes multiplicative comparison problems (problems involving notions of "times as much"; see Glossary, Table 2])

Interprets data and creates a variety of graphs to represent data. (e.g. bar, picture, line plots, etc.)	**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.*
	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.
Determines the area of a rectangle by covering the shape, without gapes of overlaps, with square units and relate area to multiplication and addition	**3.MD.5** Recognize area as an attribute of plane figures and understand concepts of area measurement. a. 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. b. 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.
	3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft., and improvised units).
	3.MD.7 Relate area to the operations of multiplication and addition. a. 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. b. 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. c. 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 $a \cdot b$ and $a \cdot c$. Use area models to represent the distributive property in mathematical reasoning. d. 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.
Can determine perimeter of polygons and understands that a given area of a shape can result in different perimeters and that a given perimeter can result in different area	**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.
Geometry	**Geometry**
Recognizes and describes shapes by their attributes and divides a shape into fractional parts	**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.
	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.*