**Grade 3 - MATH**
**Skills Based Report Card**

| Skills and Expectations | Standards | Students will be able to… |
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| **Geometry** | | |
| **Classifies shapes by properties and attributes** | **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. | Consistently and independently classify shapes according to a variety of attributes, names different quadrilaterals and explain why some shapes are quadrilaterals and some are not. |
| **Partitions shapes into equal areas** | **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. | Consistently and independently partition shapes into different areas and associate each part with a unit fraction of a whole. |
| **Measurement and Data** | | |
| **Solves problems involving measurement and estimation of time intervals, liquid volumes, and masses of objects** | **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.<br><br>**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. | Consistently and independently do each of the following:<br>● Tell time to the nearest minute.<br>● Measure and/or estimate time intervals in minutes, liquid volumes, and masses of objects.<br>● Solve word problems involving addition and subtraction of time intervals in minutes, liquid volumes, and masses of objects. |
| **Uses area models to represent arithmetic operations and properties** | **MD.5**-Recognize area as an attribute of plane figures and understand concepts of area measurement.<br><br>**MD.5.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. | Consistently and independently do each of the following:<br>● Recognize area as an attribute of plane figures.<br>● Calculate area by counting unit squares and decomposing shapes.<br>● Use area to model multiplication and the distributive property. |

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| | **MD.5.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.<br><br>**MD.6**- Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).<br><br>**MD.7**-Relate area to the operations of multiplication and addition.<br><br>**MD.7.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.<br><br>**MD.7.A**-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.<br><br>**MD.7.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 × b and a × c. Use area models to represent the distributive property in mathematical reasoning. | |
| **Solves problems using area and perimeter** | **MD.7.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.<br><br>**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. | Consistently and independently solve real world problems involving each of the following:<br>● Find perimeters of polygons.<br>● Find missing side lengths when given the perimeter.<br>● Create rectangles with the same area and different perimeters and vice versa. |
| **Generates data and uses graphs to interpret data** | **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. | Consistently and independently do each of the following:<br>● Draw scaled picture and bar graphs with several categories.<br>● Solve one and two step “how many” questions based on graphed data.<br>● Generate measurement data by measuring lengths using rulers marked with halves and fourths of an |

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| | **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. | inch.<br>● Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters. |
| **Numbers and Operations in Base Ten** | | |
| **Rounds whole numbers to the nearest 10 or 100** | **NBT.1**-Use place value understanding to round whole numbers to the nearest 10 or 100. | Consistently and independently use rounding as a strategy for estimating a correct answer when performing multi-digit arithmetic. |
| **Uses place value strategies to perform multi-digit arithmetic** | **NBT.A.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.<br><br>**NBT.A.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. | Consistently and independently use place value techniques to solve problems involving addition and subtraction of three-digit numbers including but not limited to place value drawings, estimation, properties and the relationship between addition and subtraction. |
| **Numbers and Operations - Fractions** | | |
| **Understands numerators and denominators and how they relate to parts and wholes.** | **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. | Consistently and independently use visual models to generate and explain equivalent fractions. |
| **Understands a fraction as a number on the number line; represents fractions on a number line diagram** | **NF.2**-Understand a fraction as a number on the number line; represent fractions on a number line diagram.<br><br>**NF.2.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.<br><br>**NF.2.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. | Consistently and independently represent fractions on a number line using equidistant unit fraction size intervals. |
| **Recognizes and generates simple equivalent fractions/explain why the** | **NF.3**-Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. | Consistently and independently use visual models to generate and explain equivalent fractions. |

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| **fractions are equivalent** | **NF.3.A**-Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.<br><br>**NF.3.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.<br><br>**NF.3.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. | |
| **Uses visual fraction models to compare two fractions with the same numerator or the same denominator** | **NF.3.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. | Consistently and independently compare fractions with the same numerator or denominator to determine their equivalence, record the comparisons using <, =, or > symbols, and justify the relationships by using visual models. |
| **Operations and Algebraic Thinking** | | |
| **Represents and solves problems involving multiplication and division** | **OA.A**.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.<br><br>**OA.A.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.<br><br>**OA.A.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.<br><br>**OA.O.4-**Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that | Consistently and independently interpret models and solve problems involving multiplication and division within 100. |

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| | makes the equation true in each of the equations 8 × ? = 48, 5 = _ ÷ 3, 6 × 6 = ? | |
| **Solves word problems (including patterns) involving the four operations** | **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.<br><br>**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. | Consistently and independently do each of the following:<br>● Represents one and two-step word problems with equations using letters for unknowns.<br>● Solve one and two-step word problems involving all four operations.<br>● Assess reasonableness of answers using estimation and mental math.<br>● Identify patterns (including those in addition and multiplication tables).<br>● Explain the rule for generating a pattern. |
| **Applies properties of operations as strategies to multiply and divide** | **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).<br><br>**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. | Consistently and independently do the following:<br>● Apply the properties of operations as strategies for multiplication and division.<br>● Use the Commutative, Associative and Distributive properties of multiplication to solve problems.<br>● Understand division as an unknown–factor problem.<br>● Relate multiplication and division fact families for multiples within 100. |
| **Multiplies and divides fluently within 100** | **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. | Consistently and independently recall multiplication and division facts within 100 from memory, in a timely manner. |