|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **3.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.  **I** | I will write an addition sentence and a multiplication sentence for a model.  I can show why 5x7 = 35.  I can model and skip count objects in equal groups to find how many there are.  I will use models to explore the meaning of multiplication.  I will relate multiplication and addition.  I can explain/show objects using manipulative in solving problems in addition or multiplication (DOK2)  Essential Question  What strategy do I use to compute the sum found on an addition table?  How do I identify examples of factors and products?  How do I model arrays to multiply? | GO MATH!-  **3.1- Count Equal Groups**  **3.2- Algebra-Relate Addition and Multiplication**  [www.thinkcentral.com](http://www.thinkcentral.com)  [www.greatsource.com](http://www.greatsource.com)  [www.educationworld.com/a lesson/archives/boxcarsshtm](http://www.educationworld.com/a%20lesson/archives/boxcarsshtm)  [www.crickweb.com.uk](http://www.crickweb.com.uk)  [www.edhelper.com/](http://www.edhelper.com/)  [www.funbrain.com/](http://www.funbrain.com/)  [www.tlsbooks.com/mathworksheets/](http://www.tlsbooks.com/mathworksheets/)  [www.superteachersworksheets.com/](http://www.superteachersworksheets.com/)  [www.learningplanet.com](http://www.learningplanet.com)  [www.mathmastery.com](http://www.mathmastery.com) | Application  Evaluation  Knowledge |  |  | Addition  Product  Multiply  Multiplication sentence  Factors  Equal groups  Array  Commutative Property |
| **3.OA.A.2**  Interpret whole number quotients of whole numbers (e.g., interpret 56 ÷ 8 as the number of objects in each group when 56 objects are partitioned equally into 8 groups, or as a number of groups when 56 objects are partitioned into equal groups of 8 objects each). *See Table 2.* | I can explore two meanings of division.  I can model division as equal sharing.  I can use models to relate division and subtraction.  Essential Question  What does division mean?  How can we explore the meaning of division?  When do we model division as equal sharing? |  |  |  |  | Division  Divide  Partition  Division sentence |
| **3.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. (See Table 2.)  **I** | I can use multiplication and division within 100 to solve word problems involving equal groups, arrays, and measurement quantities.  I will use multiplication to find the total number of combinations that can be made.  Essential Question  How do I use and make a table strategy to solve a problem?  How does a tree diagram solve the total number of combinations? |  | Application  Synthesis  Evaluation  Knowledge |  |  | Array  Factor  Product  Multiply  Combination  Tree diagram  Table |
| **3.OA.A.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 x* *= 48,*  *5 =* *÷ 3, 6 x 6 =* *. See Table 2*. | I will identify and explain patterns in the multiplication table.  I can use arrays and drawings such as bar diagrams, to multiply by two.  Essential Question  What is the importance of patterns in learning multiplication and division?  How can we identify and explain in the multiplication table?  What models can we use to multiply by #?  How can we relate models to multiplication facts divided by #? |  |  |  |  | Skip counting  Equation |
| **3.OA.B.5**  Apply properties of operations as strategies to multiply and divide. Properties include commutative and associative properties of multiplication and the distributive property. (Students do not need to use the formal terms for these properties.) | I can explore how to take apart factors to multiply.  I can apply commutative property of multiplication to find products.  I can explore how to find the product of three factors.  I can apply the associative property of multiplication to find products.  Essential Question  How are properties and equations used and group members?  Explain what it means to decompose a number?  Explain how associative property of multiplication can help you find missing factors? |  |  |  |  | Commutative Property of Multiplication  Associative Property of Multiplication |
| **3.OA.B.6**  Understand division as an unknown-factor problem (e.g., find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8). |  |  |  |  |  |  |
| **3.OA.C.7**  Fluently multiply and divide within 100. By the end of Grade 3, know from memory all multiplication products through 10 x 10 and division quotients when both the quotient and divisor are less than or equal to 10. | I can use multiplication and division within 100 to solve word problems involving equal groups, arrays, and measurement quantities.  I will use multiplication to find the total number of combinations that can be made.  Essential Question  How do I use and make a table strategy to solve a problem?  How does a tree diagram solve the total number of combinations? |  |  |  |  | Array  Factor  Product  Multiply  Combination  Tree diagram  Table |
| **3.OA.D.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).  **I** | I can solve addition and subtraction problems by using the strategy draw a diagram.  I will solve one- and two-step problems by using the strategy draw a diagram.  I can solve multiplication problems by using the strategy make a table.  I can solve two-step problems by using the strategy act it out.  I can perform operations in order when there are no parentheses.  I can represent and solve two step word problems using equations with a variable.  I will use logical reasoning to solve problems.  Essential Question  How could you check an equation for reasonableness?  What steps do I take to solve two-step word problems? |  | Application  Synthesis  Evaluation  Knowledge |  |  | Order of operations  Estimate |
| **3.OA.D.9**  Identify patterns in the addition table and the multiplication table and explain them using properties of operations (e.g. observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends). | I can use different strategies including doubling a known fact to multiply by 6.  I can use different strategies such as properties, arrays, and decomposing factors to multiply by 7.  I can use different strategies including arrays and repeated subtraction to divide 6 and 7.  Essential Question  How can multiplication and division facts, with smaller numbers be applied to larger numbers?  How can we use a strategy for multiplying by 6? |  |  |  |  | Equal groups |
| **3.NBT.A.1**. Use place value understanding to round whole numbers to the nearest 10 or 100.  **I M**  . | I can round 2- and 3-digit numbers to the nearest ten or hundred.  I will use compatible numbers and rounding to estimate sums.  I can use compatible numbers and rounding to estimate differences.  I can read place value of whole numbers through thousands.  I can write place value of whole numbers through thousands.  I can identify place value of whole numbers through thousands.  I can use place value to compare numbers.  Essential Question  How can numbers be expressed?  How many ways can you write a number?  How can numbers be compared?  How can numbers be ordered?  How do you use place value chart?  How can you use place value to write different forms of numbers?  How do I tell the value of each digit in a number? |  | Application  Synthesis  Evaluation  Knowledge |  |  | Round  Compatible Numbers  Estimate  Digit  Place value  Standard form  Expanded form  Word form  ones  tens  hundreds  thousands |
| **3.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.  **I**  . | I can add and subtract within 1000.  I will use the commutative and associative properties of addition to add more than two addends.  I will use the break apart strategy to add 3-digit numbers.  I can use place-value to add and subtract 3-digit numbers.  I can model subtraction with regrouping.  I can subtract three digit numbers with regrouping.  I can subtract across zero.  I can explain steps I took to solve a problem.  Essential Question  How can a model subtracting with regrouping?  How do we regroup three digit subtraction?  When do we subtract zero? |  | Application  Synthesis  Evaluation  Knowledge |  |  | Associative  Property of  Addition  Regroup  Round  Digit  hundreds  tens  thousands |
| **3.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.  **I** | I will understand the multiplication and the meaning of the multiples of 10.  I can solve multiplication problems by using the strategy draw a diagram.  I can use different strategies including patterns multiply by 10.  I can use basic facts and patterns to multiply a number by a multiple of 10.  I can use different strategies including related multiplication facts to divide by 10.  Essential Question  How can we solve problems by using patterns?  What strategies do we use when multiplying by 10?  How can knowing 5s facts help you with your 10s facts? |  | Application  Synthesis  Evaluation  Knowledge |  |  | Distributive property  Multiple  Place value  tens  hundreds  ones |
| **3.NF.A.1**  Understand a fraction (1/*b*) as the quantity formed by one 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*. | I can use fractions to represent numbers and their parts.  I can write fractions as part of a whole.  I can write fractions as part of a sentence.  Essential Question  How can fractions be used to represent numbers and their parts?  How do I write a fraction as part of a whole?  How do I write a fraction as part of a set? |  |  |  |  | Fraction  Unit fraction  Numerator  Denominator  Equal part  Fractional part  Draw a diagram |
| **3.NF.A.2a**  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. Understand that each part has size 1/*b* and that the end point of the part based at 0 locates the number 1/*b* on the number line. | I can represent and solve two step word problems using equations with a variable.  I can use logical reasoning to solve problems.  Essential Question  How could you check an equation for reasonableness?  What steps do I take to solve two step word problems? |  |  |  |  | Estimate  Pattern  Table |
| **3.NF.A.2b**  b. Represent a fraction *a/b* on a number line diagram by marking off *a* lengths 1/*b* from 0. Understand that the resulting interval has size *a/b* and that its endpoint locates the number *a/b* on the number line including values greater than 1. | I can represent and solve two step word problems using equations with a variable.  I can use logical reasoning to solve problems.  Essential Question  How could you check an equation for reasonableness?  What steps do I take to solve two step word problems? |  |  |  |  | Estimate  Pattern  Table |
| **3.NF.A.3a**  Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. a. Understand two fractions as equivalent if they have the same relative size compared to 1 whole. | I can relate fractions to whole numbers.  I can compare fractions.  Essential Questions  How do I relate fractions to whole numbers?  Why do we compare fractions? |  |  |  |  | Fraction  As one whole  Equal part of a whole  Denominator  Is equal to (=)  Is greater than (>)  Is less than (<)  Equal part  Inequality |
| **3.NF.A3b**  b. Recognize and generate simple equivalent fractions. Explain why the fractions are equivalent. | I can relate fractions to whole numbers.  I can compare fractions.  Essential Questions  How do I relate fractions to whole numbers?  Why do we compare fractions? |  |  |  |  | Fraction  As one whole  Equal part of a whole  Denominator  Is equal to (=)  Is greater than (>)  Is less than (<)  Equal part  Inequality |
| **3.NF.A3c**  c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. | I can relate fractions to whole numbers.  I can compare fractions.  Essential Questions  How do I relate fractions to whole numbers?  Why do we compare fractions? |  |  |  |  | Fraction  As one whole  Equal part of a whole  Denominator  Is equal to (=)  Is greater than (>)  Is less than (<)  Equal part  Inequality |
| **3.NF.A3d**  d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Understand that comparisons are valid only when the two fractions refer to the same whole. Record results of comparisons with the symbols >, =, or <, and justify conclusions. | I can relate fractions to whole numbers.  I can compare fractions.  Essential Questions  How do I relate fractions to whole numbers?  Why do we compare fractions? |  |  |  |  | Fraction  As one whole  Equal part of a whole  Denominator  Is equal to (=)  Is greater than (>)  Is less than (<)  Equal part  Inequality |
| **3.MD.A.1a**  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., representing the problem on a number line diagram). | I can tell time to the minute using digital and analog clock.  I can understand time intervals.  I can problem solve by working backward.  Essential Question  How do we tell time using digit and analog clock?  What is time interval? How can it be explained?  Why do we work backward? |  |  |  |  | Clock  Hour hand  Minute hand  Analog clock  Digital clock  Time interval  Start time  End time  Count backward  One hour |
| **3.MD.A.2**  Measure and estimate liquid volumes and masses of objects using metric units. (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. Excludes multiplicative comparison problems (problems involving notions of “times as much”). *See Table 2.* | I can tell time to the minute using digital and analog clock.  I can understand time intervals.  I can problem solve by working backward.  Essential Question  How do we tell time using digit and analog clock?  What is time interval? How can it be explained?  Why do we work backward? |  |  |  |  | Clock  Hour hand  Minute hand  Analog clock  Digital clock  Time interval  Start time  End time  Count backward  One hour |
| **3.MD.B.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.*  **I** | I will read and interpret data in a scaled picture and a bar graph.  I will organize data in table and solve problems using the strategy make a table.  I can draw a scaled picture and bar graph to show data in a table or picture graph.  I can interpret data that is collected and recorded.  I can use pictographs.  I can use scaled graphs.  I can use bar graphs to relate to scale pictographs.  Essential Question  How do we obtain useful information from a set of data?  Why do use scale pictographs?  How can we relate bar graphs to scale picture graphs? |  | Application  Synthesis  Evaluation  Knowledge |  |  | Frequency table  Key  Picture graph  Bar graph  Horizontal bar graph  Scale  Vertical bar graph  Line plot  Collect  Record  Data  Table  Tally Charts  Tally Marks  Survey questions  Symbols |
| **3.MD.B.4**  Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch to the nearest quarter-inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters. | I can draw and analyze line plots.  I can measure two halves and fourths of an inch.  I can collect and display measurement data.  I can solve a big problem by solving a smaller problem (multiple steps).  Essential Question  How can I draw and analyze line plots?  How do you measure two halves and fourths of an inch?  Why do we collect and display measurement data?  How can we solve a big problem solving a smaller problem (showing steps). |  |  |  |  | Data  Value  Analyze  Line graph  Fraction  Half  Half inch  Quarter  Quarter inch  Whole  Rulers  Line plot  Tally Chart |
| **3.MD.C.5**  Understand 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. | I will use unit squares to understand area.  Essential Question  How do you use unit squares to understand area? |  |  |  |  | Figure  Area  Region figure  Plane figure |
| **3.MD.C.6**  Measure areas by counting unit squares (e.g., square cm, square m, square in, square ft, and improvised units). | I will use unit squares to understand area.  Essential Question  How do you use unit squares to understand area? |  |  |  |  | Figure  Area  Region figure  Plane figure |
| **3.MD.C.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. | I can use tile rectangles to find the area of a shape.  I can use distributive property to find the area.  Essential Question  How can we use tile rectangles to find the area?  How can we find the area of a rectangle?  Why do we use distributive property to find the area? |  |  |  |  | Array  Area  Length  Square unit  Two points  Inside  Rows  Columns  Formula  Plane Figure  Decompose  Factor |
| **3.MD.C.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. | I can use tile rectangles to find the area of a shape.  I can use distributive property to find the area.  Essential Question  How can we use tile rectangles to find the area?  How can we find the area of a rectangle?  Why do we use distributive property to find the area? |  |  |  |  | Array  Area  Length  Square unit  Two points  Inside  Rows  Columns  Formula  Plane Figure  Decompose  Factor |
| **3.MD.C.7c**  Use tiling to show 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. | I can use tile rectangles to find the area of a shape.  I can use distributive property to find the area.  Essential Question  How can we use tile rectangles to find the area?  How can we find the area of a rectangle?  Why do we use distributive property to find the area? |  |  |  |  | Array  Area  Length  Square unit  Two points  Inside  Rows  Columns  Formula  Plane Figure  Decompose  Factor |
| **3.MD.C.7d**  Understand that rectilinear figures can be decomposed into non-overlapping rectangles and that the sum of the areas of these rectangles is identical to the area of the original rectilinear figure. Apply this technique to solve problems in real-world contexts. | I will decompose a composite figure.  I can relate area to perimeter.  I can draw a diagram to find the area and perimeter of a shape.  Essential Question  How can we take apart and put together a composite figure?  How do you relate area and perimeter?  How can we use a diagram to solve for area and perimeter? |  |  |  |  | Composite figure  Decompose  Take apart  Understand  Solve  Plan  Check  Diagram |
| **3.MD.D.8 (on test)**  **3.MD.C.8 (Correct Standard)**  Solve real-world and mathematical problems involving perimeters of plane figures and areas of rectangles, including finding the perimeter given the side lengths, finding an unknown side length. Represent rectangles with the same perimeter and different areas or with the same area and different perimeters. | I will decompose a composite figure.  I can relate area to perimeter.  I can draw a diagram to find the area and perimeter of a shape.  Essential Question  How can we take apart and put together a composite figure?  How do you relate area and perimeter?  How can we use a diagram to solve for area and perimeter? |  |  |  |  | Composite figure  Decompose  Take apart  Understand  Solve  Plan  Check  Diagram |
| **3.G.A.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 quadrilaterals that do not belong to any of these subcategories. | I can use geometric shapes to help solve real world problems.  I can understand the parts of an angle.  I can explain the difference between polygon and a quadrilateral.  Essential Question  How can geometric shapes help me solve real world problems?  How do you understand parts of an angle?  What is the difference between a polygon and a quadrilateral? |  |  |  |  | Ray  Parts  Angle  End point  Vertex  Right angle  Greater than  Less than  Polygon  Quadrilateral  Side  Tri-  Quad-  Pent-  Hex-  Oct-  Attribute |
| **3.G.A.2**  Partition shapes into *b* parts with equal areas. Express the area of each part as a unit fraction 1/*b* of the whole. (Grade 3 expectations are limited to fractions with denominators *b* **=** 2,3,4,6,8.) | I can partition shapes.  Essential Question  How can we partition shapes? |  |  |  |  | Fraction  Partition  Unit Fraction  Break up  Part  Equal |