

- 4 O.A.- Operations and Algebraic Thinking
- 4 N.B.T.- Numbers and Operations-Base Ten
- 4 N.F.- Numbers and Operations-Fractions
- 4 M.D.- Measurement and Data
- 4 G.-Geometry

Math Sequence	Standards (Priority)	I can statements...	Examples
4 O.A. 2	Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.	<p>I can use strategies to solve multiplication and division problems.</p> <p>I understand multiplication and division are inverse operations.</p>	<ul style="list-style-type: none"> • Use objects or drawings that model the situation described in a problem. <p>References:</p> <ul style="list-style-type: none"> • Illustrativemathematics.org • TUSD1.org • Wiki-teacher.com
4 N.B.T. A1	Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.	I can understand and apply place value.	<ul style="list-style-type: none"> • Positions of whole number to 1 million • Value of each digit to millions • Multiplying by 10 increases numbers value and shifts its place one position to the left • Strategies multiplying by 10
4 N.F. A1	Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	<p>I can use visual fraction models appropriately.</p> <p>I know when a denominator increases the number of places it is divided into increases and the size of each piece decreases.</p> <p>I can explain how two fractions may be the same size when denominators are different.</p>	<ul style="list-style-type: none"> • Use fraction models (number lines, objects, drawings) • Generate equivalent fraction for a given fraction. • Explain why fractions are equivalent.

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<p>4 N.F. A2</p>	<p>Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.</p>	<p>I can create common denominators to compare fractions.</p> <p>I can compare and order up to 3 fractions using $<$, $>$, $=$.</p>	<ul style="list-style-type: none"> • Fraction models to show equivalent fractions (tape diagram, benchmark, fractions, number lines, etc.)
<p>4 M.D. C5A</p>	<p>An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a "one-degree angle," and can be used to measure angles.</p>	<p>I can show that an angle is made up of 2 rays with the same point.</p> <p>I know a full rotation from the center of a circle is 360 degrees.</p>	<ul style="list-style-type: none"> • Name angles • Calculate to figure out unknown degree of an angle from partial circle measurement
<p>4 M.D. C6</p>	<p>Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.</p>	<p>I can measure angles using a protractor.</p> <p>I can sketch an angel using a protractor.</p>	<ul style="list-style-type: none"> • Use protractor to measure angles • Draw an angle using a protractor

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Math Sequence	Standards (Supporting)	I can statements...	Examples
<p>4 O.A. A</p>	<p>Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.</p> <p>Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison</p> <p>Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. 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.</p>	<p>I can read a multiplication equation.</p> <p>I can multiply and divide to solve word problems.</p> <p>I can interpret multi-step word problems.</p>	<ul style="list-style-type: none"> • Estimate • Mental math strategies • Drawings to model situation

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<p>4 O.A. B</p>	<p>Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.</p>	<p>I can identify a prime and composite number.</p> <p>I know the difference between a factor and a multiple.</p>	<ul style="list-style-type: none"> • Strategies to know the difference between prime and composite numbers • “What are factors?” • “What are multiples?”
<p>4 O.A. C</p>	<p>Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.</p>	<p>I can identify a rule of a pattern.</p>	<ul style="list-style-type: none"> • Input/output tables
<p>4 N.B.T A</p>	<p>Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.</p> <p>Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.</p> <p>Use place value understanding to round multi-digit whole numbers to any place.</p>	<p>I can read and write whole number up to the millions.</p> <p>I can compare numbers up to the millions.</p> <p>I can round up or down.</p> <p>I know names and values of digits up to one million.</p>	<ul style="list-style-type: none"> • Word form • Expanded form • Standard form • Place value models • Hundreds charts • Number lines

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<p>4 N.B.T. B</p>	<p>Fluently add and subtract multi-digit whole numbers using the standard algorithm.</p> <p>Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p>Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p>	<p>I can add and subtract by regrouping.</p> <p>I can use visual models for multiplication.</p> <p>I can use properties of operations to solve division problems.</p> <p>I know what the remainder means in a problem.</p>	<ul style="list-style-type: none"> • Checking your answer for accuracy • Use area models • Use arrays • Partial products • Explanation of an answer
<p>4 N.F. B</p>	<p>Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.</p> <p>Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.</p> <p>Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model.</p> <p>Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent</p>	<p>I know that fractions are made up of smaller fractions and can be decomposed.</p> <p>I know the denominator represents the whole that has been divided into equal pieces.</p> <p>I can use a variety of strategies for adding and subtracting mixed numbers.</p> <p>I can connect multiplication of whole number to multiplication of fractions.</p>	<ul style="list-style-type: none"> • Visual fraction models • Drawing objects • Properties of addition • Fraction models

	<p>fraction, and/or by using properties of operations and the relationship between addition and subtraction.</p> <p>Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.</p> <p>Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.</p> <p>Understand a fraction a/b as a multiple of $1/b$.</p> <p>Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number.</p> <p>Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.</p>		
<p>4 N.F. C</p>	<p>Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.</p> <p>Use decimal notation for fractions with denominators 10 or 100.</p> <p>Compare two decimals to hundredths by reasoning about their size. Recognize</p>	<p>I can add fractions with denominators of 10 and 100.</p> <p>I can write tenths and hundredths in decimal and fraction form.</p> <p>I can compare decimals and locate on a number line.</p>	<ul style="list-style-type: none"> • Number lines • Place value charts

	<p>that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.</p>		
<p>4 M.D. A</p>	<p>Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.</p> <p>Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p> <p>Apply the area and perimeter formulas for rectangles in real world and mathematical problems.</p>	<p>I can convert km, m, and cm.</p> <p>I can convert kg, g, lb., and oz.</p> <p>I can convert seconds, minutes, and hours.</p> <p>I can use the 4 operations to solve word problems involving fractions and decimals.</p> <p>I know equivalent units within a system of measurement.</p> <p>I can reason about how to calculate area, and perimeter of rectangles and apply formulas in real world and mathematical problems.</p> <p>I understand formulas to find area and perimeter of rectangles.</p>	<ul style="list-style-type: none"> • Meter stick/ruler for measurements • Balances and scales/use items to weigh • Diagrams that include measurement scales • Formulas • Area models

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<p>4 M.D. B</p>	<p>Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots.</p>	<p>I know how to make a line plot.</p> <p>I can represent a data set on a line plot.</p> <p>I can add and subtract based on the information represented on the line plot.</p>	<ul style="list-style-type: none"> Line plots
<p>4 M.D. C</p>	<p>Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:</p> <p>An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a "one-degree angle," and can be used to measure angles.</p> <p>An angle that turns through n one-degree angles is said to have an angle measure of n degrees.</p> <p>Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.</p> <p>Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.</p>	<p>I know benchmark angles.</p> <p>I can add or subtract to find the measure of the unknown angle.</p>	<ul style="list-style-type: none"> Angles 30°, 60°, 90°, 180°, 270°, 360° Right angle, straight line, full circle

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4 G A

Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.

Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

I can draw, define, identify, and explain points, lines, line segments, and rays.

I know and identify lines, angles, and 2 dimensional figures.

I can draw and understand lines of symmetry.

- Symbols
- Shapes and dotted lines
- Pattern blocks
- Pictures