



School District of Horicon

Course Outline

Learning Targets

4th Grade Math
Multiplicative Thinking
<ul style="list-style-type: none"> Students will be able to make a comparison statement to match a multiplication equation 4.OA.1 Students will be able to solve story problems involving a multiplicative comparison using multiplication or division 4.OA.2 Students will be able to solve multi-step story problems involving only whole numbers, using addition, multiplication, and division 4.OA.3 Students will be able to find all factor pairs for a whole number between 1-100 4.OA.4 Students will be able to demonstrate an understanding that a whole number is a multiple of each of its factors 4.OA.4 Students will be able to determine whether a whole number between 1-100 is a multiple of a given 1-digit number 4.OA.4 Students will be able to determine whether a whole number between 1-100 is prime or composite 4.OA.4
Multi-digit Multiplication and Early Division
<ul style="list-style-type: none"> Students will be able to make a comparison statement to match a multiplication equation 4.OA.1 Students will be able to solve story problems involving a multiplicative comparison using multiplication or division 4.OA.2 Students will be able to solve multi-step story problems involving only whole numbers, using addition, multiplication, and division 4.OA.3 Students will be able to demonstrate an understanding that a whole number is a multiple of each of its factors 4.OA.4 Students will be able to determine whether a whole number between 1-100 is prime or composite 4.OA.4 Students will be able to demonstrate an understanding that in a multi-digit number, each digit represents 10 times what it represents to the place to its right 4.NBT.1 Students will be able to multiply 2- and 3-digit whole numbers by a 1-digit whole number using strategies based on place value and the properties of operation 4.NBT.5 Students will be able to Multiply two 2-digit numbers using strategies based on place value and the properties of operations 4.NBT.5 Students will be able to use an equation or a rectangular array to explain strategies for multiplying with multi-digit numbers 4.NBT.5 Students will be able to divide a 2- or 3- digit number by a 1-digit number, using strategies based on place value, the properties of operations, or the relationship between multiplication and division 4.NBT.6 Students will be able to use a rectangular array to explain strategies for dividing a multi-digit number by a 1-digit number 4.NBT.6 Students will be able to solve story problems involving money using addition, multiplication, and division of whole numbers 4.MD.2

- Students will be able to apply the area formula for a rectangle to solve a problem **4.MD.3**

Fractions & Decimals

- Students will be able to use a visual model to explain why a fraction a/b is equivalent to a fraction $(nxa)/(nxb)$ **4.NF.1**
- Students will be able to recognize equivalent fractions **4.NF.1**
- Students will be able to generate a fraction equivalent to a fraction a/b by multiplying the numerator (a) and denominator (b) by the same number **4.NF.1**
- Students will be able to compare two fractions with different numerators and different denominators using the symbols $>$, $=$, and $<$, and explain why one fraction must be greater than or less than another fraction **4.NF.2**
- Students will be able to demonstrate an understanding that a comparison of fractions is valid only when they refer to the same whole **4.NF.2**
- Students will be able to Write an equation showing a fraction a/b as the sum of a number of the unit fraction $1/b$ **4.NF.3**
- Students will be able to explain addition of fractions as joining parts referring to the same whole **4.NF.3a**
- Students will be able to express a fraction as the sum of other fractions with the same denominator in more than one way **4.NF.3b**
- Students will be able to add and subtract fractions and mixed numbers with like denominators **4.NF.3c**
- Students will be able to solve story problems involving addition and subtraction of fractions and mixed numbers referring to the same whole and with like denominators **4.NF.3d**
- Students will be able to solve story problems that involve multiplying a fraction by a whole number **4.NF.4c**
- Students will be able to express a fraction with a denominator 10 as an equivalent fraction with a denominator 100 **4.NF.5**
- Students will be able to add a fraction with the denominator 10 to a fraction with denominator 100 by rewriting the first fraction as an equivalent fraction with the denominator 100 **4.NF.5**
- Students will be able to represent decimal numbers with digits to the hundredths place using place value models **Supports 4.NF**
- Students will be able to write fractions with denominator 10 or 100 in decimal notation **4.NF.6**
- Students will be able to compare two decimal numbers with digits to the hundredths place using the symbols $>$, $=$, and $<$ to record the comparison **4.NF.7**

Addition, Subtraction, and Measurement

- Students will be able to find the value of an unknown in an equation **Supports 4.OA**
- Students will be able to demonstrate an understanding that in a multi-digit number, each digit represents 10 times what it represents in the place to its right **4.NBT.1**
- Students will be able to read and write multi-digit whole numbers with base ten numerals, number names, and expanded form **4.NBT.2**
- Students will be able to compare pairs of multi-digit numbers; use, $=$, and $<$ symbols to record comparison **4.NBT.2**
- Students will be able to round multi-digit whole numbers to the nearest ten, hundred, thousand, ten thousand, hundred thousand, million **4.NBT.3**
- Students will be able to estimate sums or differences to approximate solutions to problems **Supports 4.NBT**
- Students will be able to fluently add and subtract multi-digit whole numbers, using an algorithm or

another strategy **Supports 4.NBT**

- Students will be able to use the standard algorithm with fluency to add and subtract multi-digit whole numbers **4.NBT.4**
- Students will be able to identify the relative sizes of centimeters, meters, and kilometers; ounces and pounds; milliliters and liters; and second, minutes, and hours **4.MD.1**
- Students will be able to record equivalent measurements in different units from the same system of measurement using a 2-column table **4.MD.1**
- Students will be able to express a measurement in a larger unit in terms of a smaller unit within the same system of measurement **4.MD.1**
- Students will be able to solve story problems involving intervals of time, distance, liquid volume, and mass using addition, subtraction, multiplication, and division of whole numbers **4.MD.2**
- Students will be able to solve story problems that involve expressing measurements given in a larger unit in terms of a smaller using within the same system of measurement **4.MD.2**

Geometry & Measurement

- Students will be able to apply the area and perimeter formulas for a rectangle to solve a problem **4.MD.3**
- Students will be able to identify an angle as a geometric figure formed where two rays share a common endpoint **4.MD.5**
- Students will be able to use a protractor to measure angles in whole degrees, and sketch an angle of a specified measure **4.MD.6**
- Students will be able to decompose an angle into non overlapping parts **4.MD.7**
- Students will be able to express the measure of an angle as the sum of the angle measures of the non-overlapping parts into which it has been decomposed **4.MD.7**
- Students will be able to demonstrate an understanding that angle measure is additive **4.MD.7**
- Students will be able to solve problems involving finding the unknown angle in a diagram, using addition and subtraction **4.MD.7**
- Students will be able to draw lines, line segments, angles (right, acute, obtuse), and perpendicular and parallel lines **4.G.1**
- Students will be able to identify points, lines, line segments, rays, angles (right, acute, obtuse), parallel lines, and perpendicular lines in 2-D figures **4.G.1**
- Students will be able to classify 2-D figures based on the presence or absence of parallel lines, perpendicular lines, or angles of a specified size **4.G.2**
- Students will be able to identify right triangles **4.G.2**
- Students will be able to identify and draw lines of symmetry, and identify figures with line symmetry **4.G.3**

Multiplication & Division, Data & Fractions

- Students will be able to solve multi-step story problems involving only whole numbers, using addition, subtraction, and multiplication **4.OA.3**
- Students will be able to solve story problems involving division with remainders **4.OA.3**
- Students will be able to find all factor pairs for a whole number between 1 and 100 **4.OA.4**
- Students will be able to demonstrate an understanding that a whole number is a multiple of each of its factors, and determine whether a whole number between 1 and 100 is a multiple of a given 1-digit number **4.OA.4**
- Students will be able to use the standard algorithm with fluency to add and subtract multi-digit whole numbers **4.NBT.4**
- Students will be able to multiply a 1 or 2-digit whole number by a 1 or 2-digit whole number using strategies based on place value and the properties of operations **4.NBT.5**

- Students will be able to multiply two 2-digit numbers using strategies based on place value and the properties of operations **4.NBT.5**
- Students will be able to use equations and rectangular arrays to explain strategies for multiplying with multi-digit numbers **4.NBT.5**
- Students will be able to divide a 2-, 3-, or 4-digit number by a 1-digit number, with or without a remainder, using strategies based on place value, the properties of operations, or the relationship between multiplication and division **4.NBT.6**
- Students will be able to use equations and rectangular arrays to explain strategies for dividing a multi-digit number by a 1-digit number **4.NBT.6**
- Students will be able to recognize and generate equivalent fractions; Uses a visual model to explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ **4.NF.1**
- Students will be able to add mixed numbers and fractions with like denominators **4.NF.3c**
- Students will be able to apply the area or perimeter formulas for a rectangle to solve a problem **4.NF.3**
- Students will be able to make a line plot to display a data set of measurements in fractions of a unit ($1/2$, $1/4$, $1/8$). Solve problems involving addition and subtraction of fractions by using information presented in line plots **4.NF.4**

Reviewing & Extending Fractions, Decimals & Multi-Digit Multiplication

- Students will be able to solve multi-step story problems involving only whole numbers, using addition, subtraction, multiplication, and division **4.OA.3**
- Students will be able to select and write equations with a letter standing for an unknown quantity to represent a multi-step story problem **4.OA.3**
- Students will be able to assess the reasonableness of answers to multi-step story problems using mental computation, rounding, and other estimation strategies **4.OA.3**
- Students will be able to multiply a 2- or 3-digit whole number by a 1-digit number using strategies based on place value and the properties of operations **4.NBT.5**
- Students will be able to multiply two 2-digit numbers using strategies based on place value and the properties of operations **4.NBT.5**
- Students will be able to use equations, rectangular arrays, or an area model to explain strategies for multiplying with multi-digit numbers **4.NBT.5**
- Students will be able to use a visual model to explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ **4.NF.1**
- Students will be able to recognize equivalent fractions **4.NF.1**
- Students will be able to generate a fraction equivalent to fraction a/b by multiplying the numerator (a) and denominator (b) by the same number **4.NF.1**
- Students will be able to compare two fractions with different numerators and different denominators **4.NF.2**
- Students will be able to use the symbols $>$, $=$, and $<$ to record comparisons of two fractions with different numerators and different denominators **4.NF.2**
- Students will be able to explain why one fraction must be greater than or less than another fraction **4.NF.2**
- Students will be able to express a fraction with denominator 10 as an equivalent fraction with denominator 100 **4.NF.5**
- Students will be able to add a fraction with denominator 10 to a fraction with denominator 100 by rewriting the first fraction as an equivalent fraction with denominator 100 **4.NF.5**
- Students will be able to write fractions with denominator 10 or 100 in decimal notation **4.NF.6**
- Students will be able to compare two decimal numbers with digits to the hundredths place **4.NF.7**
- Students will be able to use the symbols $>$, $=$, and $<$ to record comparisons of two decimal numbers with digits to the hundredths place **4.NF.7**

- Students will be able to explain why one decimal number must be greater than or less than another decimal number **4.NF.7**
- Students will be able to apply the area formula for a rectangle to solve a problem **4.MD.3**

Playground Design

- Students will be able to display and analyze data in bar graphs; determine the range of a set of data comprised of whole numbers and describe what they indicate about the data **4.MD**
- Students will be able to identify the relative sizes of units of measurement within the same system of measurement **4.MD.1**
- Students will be able to express a measurement in a larger unit in terms of a smaller unit within the same system of measurement **4.MD.1**
- Students will be able to solve story problems involving money using addition and multiplication of whole numbers and decimals **4.MD.2**
- Students will be able to solve story problems involving distance using addition and multiplication of whole numbers, simple fractions, and decimals **4.MD.2**
- Students will be able to use diagrams to represent measurement quantities **4.MD.2**
- Students will be able to apply the perimeter and area formulas for a rectangle to solve problems **4.MD.3**
- Students will be able to measure angles by identifying the fraction of the circular arc between the points where the two rays forming the angle intersect the circle whose center is at the endpoints of those rays **4.MD.5**
- Students will be able to use a protractor to measure angles in whole degrees **4.MD.6**
- Students will be able to draw right, acute, obtuse angles, parallel lines and perpendicular lines **4.G.1**
- Students will be able to draw line segments and angles **4.G.1**
- Students will be able to draw lines of symmetry **4.G.3**

Students will be able to meet the learning targets above as evidenced by formative and summative classroom assessments.