

**Prairie-Hills Elementary School District 144**  
**5<sup>th</sup> Grade ~ MATH Curriculum Map**  
**Quarter 1**

**Quarter 1:** August, September, and October

**Domain(s):**

- Number and Operations in Base Ten
- Operations and Algebraic Thinking

**Chapters(s)**

- Math In Focus Chapter 1 Whole Numbers
- Math In Focus Chapter 2 Whole Number Multiplication and Division
- Math in Focus Chapter 8.1 AND 8.2 Decimals

**Understand the place value system**

**5.NBT.1** Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and  $\frac{1}{10}$  of what it represents in the place to its left.

**5.NBT.2** Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

**Perform operations with multi-digit whole numbers.**

**5.NBT.5** Fluently multiply multi-digit whole numbers using the standard algorithm.

**5.NBT.6** Find whole-number quotients of whole numbers with up to four-digit dividends and two-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.

**Write and interpret numerical expressions.**

**5.OA.1** Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols **\*\*(Introduced)**

**5.OA.2** Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. **\*\*(Introduced)**

**5NBT.3** Read, write and compare decimals to thousandths. **\*(Mastered)**

**Quarter 1 Targeted Skills:**

- Count by ten thousands and hundred thousands to 10,000,000.
- Use place-value charts to show numbers to 10,000,000.
- Read and write numbers to 10,000,000 in standard form and in word form.
- Identify the place value of any digit in numbers to 10,000,000
- Read and write numbers to 10,000,000 in expanded form.
- Compare and order numbers to 10,000,000.
- Identify and complete a number pattern.
- Find a rule for a number pattern.
- Round numbers to the nearest thousand.
- Locate numbers on a number line.

- Use rounding to estimate or check sums, differences and products.
- Use related multiplication facts to estimate quotients.
- Multiply numbers by 10,100, or 1,000 using patterns
- Multiply numbers up to 4 digits by multiples of 10, 100, or 1,000
- Use rounding to estimate products.
- Multiply whole numbers by 10 squared or 10 cubed
- Multiply a 2-, 3-, or 4-digit number by a 2-digit number

**Key Vocabulary: 1<sup>st</sup> Quarter**

**Chapter 1:**

Hundred thousand  
 Standard form  
 Word form  
 Periods  
 Million  
 Place  
 Value  
 Expanded form  
 Greater than (>)  
 Less than (<)  
 Round  
 Estimate  
 Front-end-estimation with adjustment  
 Compatible numbers

**Chapter 2:**

Product  
 Factor  
 Exponent  
 Base  
 Square  
 Cube  
 Quotient  
 Dividend  
 Divisor  
 Remainder  
 Numeric expression  
 Order of operations

**Mathematical Practices Standards**

- 1 Make sense of problems and persevere in solving them
- 2 Reason abstractly and quantitatively
- 3 Construct viable arguments and critique the reasoning of others
- 4 Model with mathematics
- 5 Use appropriate tools strategically
- 6 Attend to precision
- 7 Look for and make use of structure.
- 8 Look for an express regularity in repeated reasoning

**Prairie-Hills Elementary School District 144**  
**5<sup>th</sup> Grade ~ MATH Curriculum Map**  
**Quarter 2**

**Quarter 2: October - December**

**Domain(s):**

- Number – Fractions (NF)

**Chapter(s):**

- Math in Focus Chapter 3 Fractions and Mixed Numbers

**Standard(s):**

Use equivalent fractions as a strategy to add and subtract fractions.

**5.NF.1** Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example,  $2/3 + 5/4 = 8/12 + 15/12 = 23/12$ . (In general,  $a/b + c/d = (ad + bc)/bd$ .) \*(Mastered)

**5.NF.2** Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result  $2/5 + 1/2 = 3/7$ , by observing that  $3/7 < 1/2$ . \*(Mastered)

Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

**5.NF.3** Interpret a fraction as division of the numerator by the denominator ( $a/b = a \div b$ ). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret  $3/4$  as the result of dividing 3 by 4, noting that  $3/4$  multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size  $3/4$ . If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie? \*(Mastered)

**Quarter 2 Targeted Skills:**

- Add two unlike fractions where one denominator is not a multiple of the other.
- Estimate sums of fractions.
- Subtract two unlike fractions where one denominator is not a multiple of the other.
- Estimate differences of fractions.
- Understand and apply the relationships between fractions, mixed numbers, and division expressions.
- Express fractions, division expressions, and mixed numbers as decimals
- Add mixed numbers with or without renaming.
- Estimate sums of mixed numbers.

- Subtract mixed numbers with or without renaming.
- Estimate sums of mixed numbers.
- Solve real-world problems involving fractions and mixed numbers.

**Key Vocabulary: 2<sup>nd</sup> Quarter**

**Chapter 3**

Multiple, least common multiple, least common denominator, equivalence fraction, bench marks, division expression, mixed number, numerator, denominator, simplify, improper fraction

**Mathematical Practices Standards**

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Mastery Standards

Supporting Standards

Additional Standards

Prairie-Hills Elementary School District 144  
5<sup>th</sup> Grade ~ MATH Curriculum Map  
Quarter 3

**Quarter 3: January - March**

**Domain(s):**

- Number – Fractions (NF)
- Operations & Algebraic Thinking (OA)
- Number and Base Ten (NBT)

**Cluster(s):**

- Math in Focus Chapter 4 Multiplying and Dividing Fractions
- Math in Focus Chapter 5.1 Algebra Number Patterns and Relationships
- Math in Focus Chapter 6.1 Area of a Rectangle with Fractional Side Lengths
- Math in Focus Chapter 11.1 and 11.3 Making and Interpreting Line Plots and Graphing an Equation

**Standard(s):**

Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

**5.NF.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

- a. Interpret the product  $(a/b) \times q$  as a parts of a partition of  $q$  into  $b$  equal parts; equivalently, as the result of a sequence of operations  $a \times q \div b$ . For example, use a visual fraction model to show  $(2/3) \times 4 = 8/3$ , and create a story context for this equation. Do the same with  $(2/3) \times (4/5) = 8/15$ . (In general,  $(a/b) \times (c/d) = ac/bd$ . \*(Mastered)
- b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.

**5.NF.5** Interpret multiplication as scaling (resizing), by:

- a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. \*(Mastered)
- b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence  $a/b = (n \times a)/(n \times b)$  to the effect of multiplying  $a/b$  by 1. \*(Mastered)

**5.NF.6** Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem \*(Mastered)

**5.NF.7** Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit

- a. Interpret division of a unit fraction by a non-zero whole number and compute such quotients. For example, create a story context for  $(1/3) \div 4$ , and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that  $(1/3) \div 4 = 1/12$  because  $(1/12) \times 4 = 1/3$ . \*(Mastered)
- b. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for  $4 \div (1/5)$ , and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that  $4 \div (1/5) = 20$  because  $20 \times (1/5) = 4$ . \*(Mastered)
- c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share  $1/2$  lb of chocolate equally? How many  $1/3$  –cup servings are in 2 cups of raisins? \*(Mastered)

#### Analyze patterns and relationships

**5.OA.3** *Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.* **\*\*(Introduced and Support)**

#### Understand the place value system

**5.NBT.1** Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and  $1/10$  of what it represents in the place to its left. \*(Mastered)

**5.MD.2** Make a line plot to display a data set of measurements and fractions of a unit ( $1/2$ ,  $1/4$ ,  $1/8$ ). Use operations on fractions for this grade to solve problems involving information presented in line plots \*(Mastered)

#### Graph points the coordinate plane to solve real-world and mathematical problems.

**5.G.1** Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x-axis and x-coordinate, y-axis and y-coordinate*). **\*\*(Additional)**

**5.G.2** Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret

#### Quarter 3 Target Skills

- Multiply proper fractions.
- Solve real-world problems involving multiplication of fractions and mixed numbers.
- Multiply improper fractions by proper fractions.
- Multiply a mixed number by a whole number.
- Compare the size of a product to the size of its factors
- Multiply whole number by proper fractions.
- Divide a fraction by a whole number
- Divide a whole number by a unit fraction.
- Solve real-world problems involving division of unit fractions.
- Identify and extend number patterns.
- Identify the relationship between two steps of numbers.
- Find the area of a rectangle with fractional side lengths by counting square units and by using formula.

- Read and write thousandths in decimal and fractional forms.
- Represent and interpret thousandths in models or in place-value charts.
- Write a fraction with denominator 1,000 as a decimal.
- Compare and order decimals to 3 decimals to the nearest hundredth.
- Rewrite decimals as fractions and mixed numbers in simplest form.

**Key Vocabulary: 3<sup>rd</sup> Quarter**

**Quarter 3 Critical Terms**

Product, common factor, reciprocal, proper fraction, improper fraction, mixed number, term, number pattern, thousandths, equivalent

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Mastery Standards

Supporting Standards

Additional Standards

**Prairie-Hills Elementary School District 144**  
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**4<sup>th</sup> Quarter**

**Quarter 4: April, May, June**

**Domain(s):**

- Number and Base Ten –Decimals (NBT)
- Geometry (G)

**Cluster(s):**

- Math in Focus Chapter 9 Multiplying and Dividing Decimals
- Math in Focus Chapter 13.1-13.3, 13.5
- Math in Focus Chapter 14.1, 14.5, 14.6, 14.7 Volume

**Standard(s):**

**5.NBT.1** Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and  $\frac{1}{10}$  of what it represents in the place to its left. \*(Mastered)

**5.NBT.2** Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. \*(Mastered)

**5.NBT.7** Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. \*(Mastered)

**5.NBT.4** Use place value understanding to round decimals to any place.

**5.MD.1** Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. \*\*(Introduced and Support)

**Graph points the coordinate plane to solve real-world and mathematical problems.**

**5.G.3** Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. \*\*\*(Additional)

**5.G.4** Classify two-dimensional figures in a hierarchy based on properties. \*\*\*(Additional)

**Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.**



**5.MD.3** Recognize volume as an attribute of solid figures and understand concepts of volume measurement. \*(Mastered)

a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.

\*(Mastered)

b. A solid figure which can be packed without gaps or overlaps using  $n$  unit cubes is said to have a volume of  $n$  cubic units. \*(Mastered)

**5.MD.4** Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. \*(Mastered)

**5.MD.5** Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.

a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the Volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.

\*(Mastered)

b. Apply the formulas  $V = l \times w \times h$  and  $V = b \times h$  for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems. \*(Mastered)

#### Quarter 4 Target Skills

- Multiply tenths and hundredths by a 1-digit whole number
- Multiply tenths and hundredths by 10, 100, and 1,000
- Multiply tenths and hundredths by power of 10
- Multiply tenths and hundredths by multiples of 10, 100, and 1,000
- Divide tenths and hundredths by a 1-digit whole number
- Round quotients to the nearest tenths of hundredths
- Divide tenths and hundredths by 10, 100, 1000.
- Divide tenths and hundredths by multiples of 10, 100, 1000.
- Estimate decimals sums, differences, products and quotients.
- Convert from a larger to smaller metric unit
- Convert from smaller to larger metric unit.
- Solve real world problems involving decimals.
- Make a line plot to represent data given in fractions of a unit
- Use fractions and their operations to solve problems using data
- Read points on a coordinate grid
- Plot points on a coordinate grid
- Graph an equation
- Classify triangles by their side lengths and angle measures
- Understand and apply the property that the sum of the angle measures of a triangle is 180
- Understand and apply the properties of the right, isosceles, and equilateral triangles.
- Understand and apply the properties of parallelogram, rhombus, and trapezoid.
- Build solids using unit cubes
- Determine the number of unit cubes in an irregular solid
- Find the volumes of cubes and rectangular prisms
- Find the volume of a solid constructed from unit cubes
- Compare volumes of cubes rectangular prisms and other objects

- Use a formula to find the volume of a rectangular prism
- Find the capacity of a rectangular container
- Solve word problems involving volume of rectangular prisms and liquids
- Find the volume of a solid figure composed of two rectangular prisms
- Solve real world problems on the volume of a composite solid

**Quarter 4 Key Vocabulary:**

**Critical Terms:**

Dividend, Per unit, Estimate, Divisor,  
Coordinate grid, x-axis, y-axis, coordinate  
plane, coordinates, ordered pair, x-coordinate,  
y-coordinate, origin, straight line graph,  
equation

Equilateral triangle, Isosceles triangle, Scalene  
triangle, Right triangle, Obtuse triangle, Acute  
triangle, Unit cube, Face, edge

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