



Danville District No. 118

Mathematics – Fifth Grade

Curriculum and Scope and Sequence

First Quarter

- Common Core – Operations and Algebraic Thinking (5.OA)**
- Common Core – Number and Operations in Base Ten (5.NBT)**
- Common Core – Number and Operations - Fractions (5.NF)**
- Common Core – Measurement and Data (5.MD)**
- Common Core – Geometry (5.G)**

State Standard	Objectives	Action Plan	Resources
<p>CC: Number and Operation in Base Ten</p> <p>Understand the place value system.</p> <p>Perform operations with multi-digit whole numbers and with decimals to hundredths.</p>	<p>The student will be able to:</p> <ul style="list-style-type: none"> • 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. (5.NBT.1) • Explain patterns in the number of zeros of the product when multiplying a number by powers of 10. (5.NBT.2) • Read, write, and compare decimals to thousandths. (5.NBT.3) <ul style="list-style-type: none"> ○ Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 (1/10) + 9 \times (1/100) + 2 \times (1/1000)$. (5.NBT.3a) ○ Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$ and $<$ symbols to record the results of comparisons. (5.NBT.3b) • Use place value understanding to round decimals to any place. (5.NBT.4) • Fluently multiply multi-digit whole numbers using the standard algorithm. (5.NBT.5) • 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 	<p>Identify the value of each place of a given number</p> <p>Represent parts of a whole interchanging fractions and decimals up to thousandths</p> <p>Write whole numbers and decimals in standard, word, and expanded form to the thousandths</p> <p>Compare and order whole numbers and decimals up to thousandths</p> <p>Identify patterns in whole numbers and decimals solve problems</p> <p>Demonstrate an understanding of Commutative and Associative Properties of whole numbers to</p>	<p><i>enVision Math</i></p> <p>Topic 1-Place Value</p> <p>Topic 2- Adding and Subtracting Decimals</p> <p>Topic 3 – Multiplying whole numbers</p> <p>Topic 4 – Dividing by 1-digit Divisors</p> <p>Recording Sheet: TT4</p> <p>Fraction Model Strips: TT5</p> <p>10X10X10 Cube</p> <p>Place Value Chart: TT6</p> <p>Comparing and Ordering Decimals: TT7</p> <p>Place Value Materials: TT9</p>

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	<p>multiplication and division. (5.NBT.6)</p> <ul style="list-style-type: none"> • 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. (5.NBT.7) 	<p>decimals using mental math strategies Use a number line to round whole numbers through millions</p> <p>Use a number line to round decimals through thousandths</p> <p>Round to estimate sums and differences of whole numbers and decimals</p> <p>Use concrete objects, such as base-ten blocks, to add and subtract decimals in tenths and hundredths</p> <p>Use pictures and write equations to help solve problems</p> <p>Compute sums and differences of decimals involving tenths, hundredths, and thousandths</p> <p>Find the solution to a multi-step problem involving the use of addition and subtraction of whole/decimal numbers</p> <p>Identify and apply the properties of multiplication (Commutative, Associative, Identity, and Zero)</p>	<p>Teaching Tool 10</p> <p>Teaching Tool 11</p> <p>Teaching Tool 12</p> <p>Teaching Tool 31</p> <p>Teaching Tool 24</p> <p>Colored Pencils, Crayons, Markers, Scissors</p> <p>Problem Solving Recording Sheet: TT1</p> <p>Two-Color Counters: TT13</p> <p>Exponents: TT14</p> <p>Distributive Property: TT15</p> <p>Teaching Tool 18</p> <p>Straightedges, Colored Pencils</p> <p>Small Grid Paper: TT16</p> <p>Multiplication Table: TT17</p> <p>Bill and Coins: TT18</p> <p>Four Number Cubes</p> <p>ENO Board Visual Bridge – Interactive component</p>
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		<p>Compute products/quotients of whole numbers using place value patterns and the properties of multiplication with mental math strategies</p> <p>Round to estimate products/quotients of whole numbers (over and under estimates)</p> <p>Pair repeated multiplication with exponent counterpart</p> <p>Simplify expressions and solve equations using the Distributive Property</p> <p>Multiply multi-digit numbers by a one and two digit number</p> <p>Use pictures to show repeated addition as multiplication and division with remainders</p> <p>Check for reasonableness of an answer</p> <p>Use money to understand division</p> <p>Divide three-digit divisors</p> <p>Divide with zeros in the quotient</p>	<p>enVision</p> <p>AIMSweb – M-CAP</p> <p>AIMSweb – M-COMP</p>
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**Danville District No. 118
Mathematics – Fifth Grade
Curriculum and Scope and Sequence
Second Quarter**

Common Core – Operations and Algebraic Thinking (5.OA)
Common Core – Number and Operations in Base Ten (5.NBT)
Common Core – Number and Operations - Fractions (5.NF)
Common Core – Measurement and Data (5.MD)
Common Core – Geometry (5.G)

State Standard	Objectives	Action Plan	Resources
<p>CC: Number and Operations in Base Ten²</p> <p>Generalize place value understanding for multi-digit whole numbers.</p> <p>Use place value understanding and properties of operations to perform multi-digit arithmetic</p>	<p>The student will be able to:</p> <ul style="list-style-type: none"> 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. (5.NBT.1) Explain patterns in the number of zeros of the product when multiplying a number by powers of 10. (5.NBT.2) 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. (5.NBT.6) 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. (5.NBT.7) 	<p>Compute quotients with dividends and divisors that are multiples of 10</p> <p>Estimate to find solutions to division problems with two-digit divisors</p> <p>Use arrays and area models to model division</p> <p>Divide by multi-digit dividends and divisors</p> <p>Estimate or use calculator to solve division problems</p> <p>Evaluate problems for missing and/or extraneous information</p> <p>Mentally multiply/divide decimals by 10;100;1,000</p> <p>Use rounding and estimation to multiply</p>	<p><i>enVision Math</i></p> <p>Topic 5 – Dividing by 2-Digit Divisors</p> <p>Topic 6 – Multiplying Decimals</p> <p>Topic 7 – Dividing Decimals</p> <p>Grid Paper</p> <p>Calculator</p> <p>Problem Solving Recording Sheet: TT1</p> <p>Estimating the Product of a Decimal and a Whole Number: TT20</p> <p>Decimal Grids: TT21</p> <p>Colored Pencils</p> <p>Multiplying a Whole Number and a Decimal:</p>

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		<p>and divide decimals (over estimate and under estimates)</p> <p>Use number sense and place value to multiply decimals to the ten thousandths</p> <p>Multiply/divide whole numbers and decimals by decimals</p> <p>Solve multiple-step problems by finding the hidden question</p> <p>Determine correct decimal placement in a quotient</p> <p>Use multiple steps to solve a variety of problems</p> <p>Translate verbal expressions to written expressions using variables and vice versa</p> <p>Apply values to given variables to evaluate expressions</p> <p>Use order of operations to simplify and solve expressions with whole numbers and decimals</p> <p>Determine the rule for a table and write the rule as an expression (addition, subtraction, multiplication, division)</p>	<p>TT41</p> <p>Multiplying Two Decimals: TT22</p> <p>Decimal Models: TT23</p> <p>Scissors</p> <p>Decimal Grids: TT21</p>
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		<p>Determine the pattern to extend the sequence on a table</p> <p>Use color tiles to solve problems and draw conclusions</p>	
<p>CC: Operations and Algebraic Thinking</p> <p>Write and interpret numerical expressions.</p> <p>Analyze patterns and relationships.</p>	<p>The student will be able to:</p> <ul style="list-style-type: none"> • Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. (5.OA.1) • Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. (5.OA.2) • Generate two numerical patterns using two given rules. (5.OA.3) 	<p>Demonstrate calculations by solving within parentheses first</p> <p>Explain the process and steps for using, parentheses, brackets, and braces effectively</p>	<p>Topic 8 – Numerical Expressions, Patterns and Relationships</p> <p>Place Value Blocks: TT24</p> <p>Counters</p> <p>Color Tiles; 10 Red, 10 Green, 10 Yellow</p> <p>ENO Board Visual Bridge – Interactive component enVision</p> <p>AIMSweb – M-CAP</p> <p>AIMSweb – M-COMP</p>

Danville District No. 118
Mathematics – Fifth Grade
Curriculum and Scope and Sequence
Third Quarter

Common Core – Operations and Algebraic Thinking (5.OA)
 Common Core – Number and Operations in Base Ten (5.NBT)
 Common Core – Number and Operations - Fractions (5.NF)
 Common Core – Measurement and Data (5.MD)
 Common Core – Geometry (5.G)

State Standard	Objectives	Action Plan	Resources
<p>CC: Number and Operations</p> <p>Use equivalent fractions as a strategy to add and subtract fractions.</p> <p>Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p>	<p>The student will be able to:</p> <ul style="list-style-type: none"> • 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. (5.NF.1) • Solve word problems involving addition and subtractions 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. (5.NF.2) • Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). (5.NF.3) • Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. (5.NF.4) <ul style="list-style-type: none"> ○ 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 $a \times q \div b$. (5.NF.4a) ○ 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. (5.NF.4b) • Interpret multiplication as scaling (resizing), by: (5.NF.5) <ul style="list-style-type: none"> ○ 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 	<p>Write equivalent fractions</p> <p>Identify and find simplest form of fractions</p> <p>Estimate the fractional part of objects</p> <p>Write a mathematical equation and draw a picture</p> <p>Use a number line to estimate sums/differences of fractions</p> <p>Determine common multiples and least common multiple</p> <p>Find common denominators</p> <p>Add/subtract fractions with unlike denominators</p>	<p><i>enVision Math</i></p> <p>Topic 9 – Adding and Subtracting Fractions</p> <p>Topic 10 – Adding and Subtracting Mixed Numbers</p> <p>Topic 11 – Multiplying and Dividing Fractions and Mixed Numbers</p> <p>Fraction Model Strips: TT5</p> <p>Fraction in Simplest Form: TT25</p> <p>Number Lines: TT26</p> <p>Fraction Models: TT5</p> <p>Scissors</p> <p>Hundred Chart: TT27</p> <p>Fraction Models: TT28</p>

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	<p>multiplication. (5.NF.5a)</p> <ul style="list-style-type: none"> ○ 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 $\frac{a}{b} = \frac{n \times a}{n \times b}$ to the effect of multiplying $\frac{a}{b}$ by 1. (5.NF.5b) <ul style="list-style-type: none"> • Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem. (5.NF.6) • Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. (5.NF.7) <ul style="list-style-type: none"> ○ Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. (5.NF.7a) ○ Interpret division of a whole number by a unit fraction, and compute such quotients. (5.NF.7b) ○ 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. (5.NF.7c) 	<p>Pair improper fraction and mixed numbers on a number line</p> <p>Estimate sums/differences of fractions and mixed numbers by rounding to the nearest whole number</p> <p>Use models and computational procedures to add and subtract mixed numbers</p> <p>Use fractions strips to model the adding/subtracting of fractions</p> <p>Locate and place fractions on a number line</p> <p>Display equivalent fractional parts to make connections of equal representation</p> <p>Multiply a fraction by a whole number</p> <p>Use compatible numbers and rounding to estimate with fractions</p> <p>Give the product of two fractions</p> <p>Find area of rectangles</p> <p>Multiply mixed numbers</p>	<p>Problem Solving Recording Sheet: TT1 Circle Patterns: TT29</p> <p>3 Same-Size Circles per Group</p> <p>Centimeter Grid Paper: TT31</p> <p>Paper</p> <p>Multiplying Mixed Numbers: TT30</p> <p>Four 8 ½ X 11 Sheets of Paper</p> <p>Scissors</p>
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		<p>Use multiplication to scale or resize something</p> <p>Divide whole numbers by fractions</p> <p>Discover the inverse relationship between multiplication and division</p> <p>Use diagrams and write equations to solve problems</p>	
<p>CC: Measurement and Data</p> <p>Convert like measurement units within a given measurement system.</p> <p>Represent and interpret data.</p> <p>Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.</p>	<p>The student will be able to:</p> <ul style="list-style-type: none"> • 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. (5.MD.1) • Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). (5.MD.2) • Recognize volume as an attribute of solid figures and understand concepts of volume measurement. (5.MD.3) <ul style="list-style-type: none"> ○ 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. (5.MD.3a) ○ 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. (5.MD.3b) • Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. (5.MD.4) • Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. (5.MD.5) <ul style="list-style-type: none"> ○ 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 it would be found by multiplying the edge lengths. (5.MD.5a) ○ Apply the formulas $V = l \times w \times h$ and $V = b \times$ 	<p>Describe, classify and analyze three dimensional shapes according to faces, edges and vertices</p> <p>Identify different views of a solid</p> <p>Determine the volume of rectangular solids</p> <p>Use formulas to find the volume of rectangular prisms</p> <p>Find volume of irregular solids</p>	<p><i>enVision Math</i></p> <p>Topic 12 – volume of Solids</p> <p>Centimeter Cubes</p> <p>Centimeter Grid Paper: TT31</p> <p>Unit Cubes</p> <p>Manila Folder</p> <p>Combining Volume: TT32</p> <p>Markers in Two Colors</p> <p>Problem Solving Recording Sheet: TT1</p> <p>ENO Board Visual Bridge – Interactive component <i>enVision</i></p>

	<p>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. (5.MD.5b)</p> <ul style="list-style-type: none"> ○ Recognize volume as additive. (5.MD.5c) 		<p>AIMSweb – M-CAP</p> <p>AIMSweb – M-COMP</p>
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**Danville District No. 118
Mathematics – Fifth Grade
Curriculum and Scope and Sequence
Fourth Quarter**

Common Core – Operations and Algebraic Thinking (5.OA)
Common Core – Number and Operations in Base Ten (5.NBT)
Common Core – Number and Operations - Fractions (5.NF)
Common Core – Measurement and Data (5.MD)
Common Core – Geometry (5.G)

State Standard	Objectives	Action Plan	Resources
<p>CC: Measurement and Data</p> <p>Convert like measurement units within a given measurement system.</p> <p>Represent and interpret data.</p>	<p>The student will be able to:</p> <ul style="list-style-type: none"> 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. (5.MD.1) Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). (5.MD.2) 	<p>Convert between customary units of length (in, ft, yd, mi)</p> <p>Convert between customary units of capacity (gal, qt, pt, c, fl oz)</p> <p>Convert between customary units of weight (oz, lb, T)</p> <p>Convert between metric units of length (km, cm, mm)</p> <p>Convert between metric units of capacity (L, mL)</p> <p>Convert between metric units of mass (mg, g, kg)</p> <p>Solve multiple-step problems by searching for hidden questions</p> <p>Draw line plots, interpret points and recognize outliers</p>	<p><i>enVision Math</i></p> <p>Topic 13 – Units of Measure</p> <p>Topic 14 - Data</p> <p>Inch and Yardstick Rulers: TT33</p> <p>Two Different Colored Markers</p> <p>Strips of Paper One Yard Long</p> <p>Teaching Tool 34</p> <p>Liquid Measuring Cup</p> <p>Empty Containers (Pint, Quart, $\frac{1}{2}$ Gallon, and Gallon)</p> <p>Water</p> <p>Centimeter Ruler Marked in Millimeters: TT35</p> <p>Empty Liter Container</p>

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		<p>Collect, record and interpret data in frequency tables to construct line plots and solve problems involving the data</p> <p>Use words, pictures, numbers and symbols to demonstrate changes in data on a graph</p>	<p>Problem-Solving Recording Sheet: TT1</p> <p>Problem- Solving, Look for a Pattern: TT8</p> <p>Reading Time: TT36</p>
<p><u>CC: Geometry</u></p> <p>Graph points on the coordinate plane to solve real-world and mathematical problems.</p> <p>Classify two-dimensional figures into categories based on their properties.</p> <p><u>CC: Operations and Algebraic Thinking</u></p> <p>Analyze patterns and relationships.</p>	<p>The student will be able to:</p> <ul style="list-style-type: none"> 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. (5.G.1) Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. (5.G.2) Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. (5.G.3) Classify two-dimensional figures in a hierarchy based on properties. (5.G.4) Generate two numerical patterns using two given rules. (5.OA.3) 	<p>Identify and classify polygons, triangles and quadrilaterals by sides and angles</p> <p>Classify and sort two dimensional shapes into categories based on their properties</p> <p>Find and use commonalities and attributes of objects to make generalizations about patterns</p> <p>Identify and graph points on a coordinate grid</p> <p>Find the distance between two points by using ordered pairs</p> <p>Create, interpret and use coordinate graphs to explain the relationship between two rules</p>	<p>Topic 15 – Classifying Plane Figures</p> <p>Topic 16: Coordinate Geometry</p> <p>Wooden Sticks or Straws</p> <p>TT37</p> <p>TT38</p> <p>Scissors</p> <p>Paper</p> <p>Coordinate Grids: TT39</p> <p>10X10 Grids: TT40</p> <p>Grid Paper</p> <p>ENO Board</p> <p>Visual Bridge – Interactive component</p> <p>enVision</p> <p>AIMSweb – M-CAP</p> <p>AIMSweb – M-COMP</p>