**Common Core – Operations and Algebraic Thinking (4.OA)**
**Common Core – Number and Operations in Base Ten[2] (4.NBT)**
**Common Core – Number and Operations - Fractions[3] (4.NF)**
**Common Core – Measurement and Data (4.MD)**
**Common Core – Geometry (4.G)**

| State Standard | Objectives | Action Plan | Resources |
|---|---|---|---|
| **CC:  Operations and Algebraic Thinking**<br><br>**Use the four operations with whole numbers to solve problems.**<br><br>**Gain familiarity with factors and multiples.**<br><br>**Generate and analyze patterns.** | The student will be able to:<br>• 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.  (4.OA.1)<br>• 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.  (4.OA.2)<br>• 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.  (4.OA.3)<br>• Find all factor pairs for a whole number in the range 1-100.  (4.OA.4)<br>• Generate a number or shape pattern that follows a given rule.  (4.OA.5) | Construct arrays to express repeated addition in multiplication.<br><br>Distribute place value blocks in equal rows to multiply.<br><br>Recognize patterns of multiples on hundreds chart.<br><br>Write multiplication sentences to demonstrate arrays.<br><br>Apply the Distributive Property to break apart complex problems into simpler<br><br>Identify and extend geometric and number patterns.<br><br>Distinguish patterns in number sequences. | *enVision Math*<br><br>**Topic 1-Multiplication and Division: meaning and Facts**<br><br>**Topic 2- Generate and Analyze Patterns**<br><br>Centimeter Grid Paper – TT4<br><br>Colored Pencils, Markers, Crayons, Chalk<br><br>Place Value Blocks – TT8<br><br>Hundred Chart – TT11<br><br>Index Cards<br><br>Pattern Blocks<br><br>Tangrams – TT24<br><br>Recording Sheet – TT26 |

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| | | | Counters – TT12<br><br>Cubes<br><br>Recording Sheet – TT27 |
|---|---|---|---|
| | | Reflect how quantities are related in order to find a rule.<br><br>Solve problems with objects to 'act out" actions in the problems. | |
| **CC:  Number and Operations in Base Ten[2]**<br><br>**Generalize place value understanding for multi-digit whole numbers.**<br><br>**Use place value understanding and properties of operations to perform multi-digit arithmetic** | **The student will be able to:**<br>• 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.  (4.NBT.1)<br>• Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. (4.NBT.2)<br>• Use place value understanding to round multi-digit whole numbers to any place.  (4.NBT.3)<br>• Fluently add and subtract multi-digit whole numbers using the standard algorithm.  (4.NBT.4) | Understand that a Multi-digit number can be represented in more than one way.<br><br>Apply place value to compare and order numbers.<br><br>Round whole numbers to find the multiples of 10 and 100.<br><br>Write numbers in expanded, standard, and word form.<br><br>Systematically record all outcomes for a situation.<br><br>Represent numbers in equivalent form in order to make mental calculations.<br><br>Apply estimation as a method to replace numbers with others that are close for mental calculations. | **Topic 3- Place Value**<br><br>**Topic 4- Addition and Subtraction of Whole Numbers**<br><br>Number lines – TT14<br><br>Place Value Blocks – TT8 and TT9<br><br>Recording sheets – TT28<br><br>Place Value Chart – TT10<br><br>ENO Board<br>Visual Bridge – Interactive component enVision<br><br>AIMSweb – M-CAP<br><br>AIMSweb – M-COMP |

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# Danville District No. 118
## Mathematics – Fourth Grade
## Curriculum and Scope and Sequence
## Second Quarter

**Common Core – Operations and Algebraic Thinking (4.OA)**
**Common Core – Number and Operations in Base Ten² (4.NBT)**
**Common Core – Number and Operations - Fractions³ (4.NF)**
**Common Core – Measurement and Data (4.MD)**
**Common Core – Geometry (4.G)**

| State Standard | Objectives | Action Plan | Resources |
|---|---|---|---|
| **CC:  Number and Operations in Base Ten²**<br><br>**Generalize place value understanding for multi-digit whole numbers.**<br><br>**Use place value understanding and properties of operations to perform multi-digit arithmetic**<br><br>**CC:  Operations and Algebraic Thinking**<br><br>**Use the four operations with whole numbers to solve problems.** | **The student will be able to:**<br>• Use place value understanding to round multi-digit whole numbers to any place.  (4.NBT.3)<br>• 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.  (4.NBT.5)<br>• 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.  (4.OA.3) | Use basic facts and patterns to find products of 10s and 100s.<br><br>Break apart numbers and use arrays as multiplication strategies.<br><br>Represent problems with a picture or diagram to solve a problem.<br><br>Make and array with place value block to visualize products. Apply mental math to determine products of two digit numbers.<br><br>Apply problem solving to new situations. | *enVision Math*<br><br>**Topic 5-Number Sense: Multiplying by 1-Digit Numbers**<br><br>**Topic 6- Developing Fluency: Multiplying by 1-Digit Numbers**<br><br>**Topic 7- Number Sense: Multiplying by 2-Digit Numbers**<br><br>**Topic 8- Developing Fluency-Multiplying by 2-Digit Numbers**<br><br>¼ inch Grid Paper and ¼ inch Grid Transparency – TT5<br><br>Calculators<br><br>Colored Chalk, Pencils, Crayons, Markers<br><br>Place Value Blocks – TT8 |

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| | | Break apart a complex problem into smaller simplified steps.<br><br>Check answers to problems for reasonableness | Recording Sheet Tape – TT29 and TT30<br><br>Centimeter Grid Paper – TT4<br><br>ENO Board<br>Visual Bridge – Interactive component enVision<br><br>AIMSweb – M-CAP<br><br>AIMSweb – M-COMP |

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

**Common Core – Operations and Algebraic Thinking (4.OA)**
**Common Core – Number and Operations in Base Ten² (4.NBT)**
**Common Core – Number and Operations - Fractions³ (4.NF)**
**Common Core – Measurement and Data (4.MD)**
**Common Core – Geometry (4.G)**

| State Standard | Objectives | Action Plan | Resources |
|---|---|---|---|
| **CC:  Number and Operations in Base Ten²**<br><br>**Generalize place value understanding for multi-digit whole numbers.**<br><br>**Use place value understanding and properties of operations to perform multi-digit arithmetic**<br><br>**CC:  Operations and Algebraic Thinking**<br><br>**Use the four operations with whole numbers to solve problems.** | **The student will be able to:**<br>• 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.  (4.NBT.1)<br>• 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.  (4.NBT.5)<br>• 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.  (4.NBT.6)<br>• 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.  (4.OA.2)<br>• 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.  (4.OA.3)<br>• Find all factor pairs for a whole number in the range 1-100.  (4.OA.4)<br>• Generate a number or shape pattern that follows a given rule.  (4.OA.5) | Solve problems with three digit dividends and one digit divisors.<br><br>Substitute compatible numbers to estimate quotients.<br><br>Solve problems by completing a number sentence or equation.<br><br>Apply the standard algorithm to divide three digits by one divisor<br><br>Apply multiplication, division, and estimation to determine the place value of the largest digit in a quotient. | *enVision Math*<br><br>**Topic 9- Numbers Sense: Dividing by 1-Digit Divisors**<br><br>**Topic 10-Developing Fluency: Dividing by 1-Digit Divisors**<br><br>Two colored counters – TT12<br><br>Place Value Blocks – TT8 |

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| CC: Number and Operations - Fractions[3]<br><br>**Extend understanding of fraction equivalence and ordering.**<br><br>**Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.** | **The student will be able to:**<br>• Explain why a fraction a/b is equivalent to a fraction (n × a)(n × b) 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. (4.NF.1)<br>• 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 ½. (4.NF.2)<br>• Understand a fraction a/b with a>1 as a sum of fractions 1/b. (4.NF.3)<br>   o Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. (4.NF.3a)<br>   o Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. (4.NF.3b)<br>   o Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. (4.NF.3c)<br>   o 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. (4.NF.3d) | Identify prime and composite numbers.<br><br>Write to explain how a composite number is different from a prime number.<br><br>Determine multiples of a number.<br><br>Explore with fraction strips to determine equivalent amounts.<br><br>Recognize equivalent fractions name equivalent parts of a region.<br><br>Compare fractions with unlike denominators.<br><br>Use fraction strip models to add and subtract fractions/mixed fractions with like denominators. | **Topic 11-Fraction Evidence and Ordering**<br><br>**Topic 12-Adding and Subtracting Fractions and Mixed Numbers With Like Denominators**<br><br>Centimeter Grid Paper – TT4<br><br>Color Tiles<br><br>Fraction Models: Strips – TT15<br><br>Strips of Paper<br><br>Number Lines - TT14<br><br>Colored Pencils/Scissors<br><br>Fraction Models: Circles – TT16<br><br>ENO Board<br>Visual Bridge – Interactive component enVision<br><br>AIMSweb – M-CAP<br><br>AIMSweb – M-COMP |
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# Danville District No. 118
## Mathematics – Fourth Grade
## Curriculum and Scope and Sequence
## Fourth Quarter

**Common Core – Operations and Algebraic Thinking (4.OA)**
**Common Core – Number and Operations in Base Ten² (4.NBT)**
**Common Core – Number and Operations - Fractions³ (4.NF)**
**Common Core – Measurement and Data (4.MD)**
**Common Core – Geometry (4.G)**

| State Standard | Objectives | Action Plan | Resources |
|---|---|---|---|
| **CC:  Number and Operations - Fractions³**<br><br>**Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.**<br><br>**Understand decimal notation for fractions, and compare decimal fractions.** | The student will be able to:<br>• Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. (4.NF.4)<br>　o Understand a fraction a/b as a multiple of 1/b. (4.NF.4a)<br>　o Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number.  (4.NF.4b)<br>　o 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.  (4.NF.4c)<br>• 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.  (4.NF.5)<br>• Use decimal notation for fractions with denominators 10 or 100.  (4.NF.6)<br>• Compare two decimals to hundredths by reasoning about their size.  (4.NF.7) | Use physical representations to demonstrate an understanding of fractions<br><br>Represent a whole number as a multiple of a fractional amount<br><br>Demonstrate how to correctly multiply a fraction by a whole number<br><br>Compare fractions to decimals and fluently move from one to the other to show equivalence<br><br>Location and compare fractions, mixed numbers, and decimals on a number line<br><br>Recognize that every | *enVision Math*<br><br>**Topic 13- Extending Fraction Concepts**<br><br>Paper Strips<br><br>Scissors<br><br>Fraction Strips – TT15<br><br>Decimal Models – TT17<br><br>Number Lines – TT14<br><br>Recording Sheet – TT31 and TT32<br><br>Bills and Coins – TT19<br><br>Place Value Charts – TT10<br><br>Rulers – TT20 AND TT21 |

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| | | fraction has infinite number of equivalent fractions but only one decimal form<br><br>Move fluently from grids to place value charts to express pictorial representations as decimals<br><br>Connect the use of money to the representation of decimal numeration | |
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| **CC:  Measurement and Data**<br><br>**Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.**<br><br>**Represent and interpret data.**<br><br>**Geometric measurement:  understand concepts of angle and measure angles.** | **The student will be able to:**<br>• Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb., oz.; l, ml; hr., min, sec.  (4.MD.1)<br>• 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.  (4.MD.2)<br>• Apply the area and perimeter formulas for rectangles in real world and mathematical problems.  (4.MD.3)<br>• Make a line plot to display a data set of measurements in fractions of a unit (1/2, ¼, 1/8).  (4.MD.4)<br>• Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:  (4.MD.5)<br>    o 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.  (4.MD.5a)<br>    o An angle that turns through n one-degree angles | Convert fluently between various customary units of the same attribute while showing equivalence<br><br>Demonstrate the differences between length, capacity, weight, and mass using real life examples<br><br>Provide complete, correct, and simple mathematical explanations using words, pictures, numbers, and/or symbols<br><br>Convert fluently between various metric units of the same attribute while showing | **Topic 14- Measurement Units and Conversions**<br><br>Masking Tape, Examples of Cup, Pint, Quart, Gallon<br><br>Place Value Blocks – TT8<br><br>Tagboard, Eye Dropper, Empty 1-Liter Bottle<br><br>Rulers – TT21<br><br>**Topic 15- Solving Measurement Problems**<br><br>Bills and Coins – TT19<br><br>Recording Sheet:  Line Plot Data – TT33 |

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| | is said to have an angle measure of n degrees. (4.MD.5b)<br>• Measure angles in whole-number degrees using a protractor. (4.MD.6)<br>• Recognize angle measure as additive. (4.MD.7) | equivalence<br><br>Compare units of time<br><br>Work backward to problem solve<br><br>Apply the formula for perimeter and area of a rectangle to solve real-world problems.<br><br>Represent measurement problems using models<br><br>Make change by counting up<br><br>Represent data using a line plot and use it to answer questions regarding the data<br><br>Record information in a table to solve problems | |
| **CC: Geometry**<br><br>**Draw and identify lines and angles, and classify shapes by properties of their lines and angles.** | **The student will be able to:**<br>• Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. (4.G.1)<br>• 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. (4.G.2)<br>• 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. (4.G.3) | Identify pairs of lines as parallel, intersecting, and perpendicular<br><br>Identify angles as right, acute, obtuse, and straight<br><br>Find angle measures by describing an arc as a fraction of a circle<br><br>Incorporate protractors | **Topic 16- Lines, Angles, & Shapes**<br><br>Centimeter Grid Paper – TT4<br><br>Dot Paper – TT7<br><br>Clock Face – TT23<br><br>Pattern Blocks – TT25<br><br>Rulers – TT21<br><br>Protractors – TT22 |

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| | | to draw angles and solidify the understanding that an angle is one degree | Polygons – TT25

Scissors |
| | | Use the additive property of angle measure to find unknown angle measures by adding and subtracting | ENO Board
Visual Bridge – Interactive component enVision

AIMSweb – M-CAP |
| | | Sort and classify polygons by their sides and angles | AIMSweb – M-COMP |
| | | Sort and classify triangles by using sides and angles | |

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