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4th Grade Math Curriculum Framework
Full Year Course

Big Idea(s) for 1st nine weeks	Concept(s) of 1st nine weeks	Competencies of 1st nine weeks	Essential Questions for 1st nine weeks
Place value is a starting point to blend various math skills to include multi-digit addition and subtraction. Multiplication can be applied to real-world situations and geometry can be found everywhere around us. Finding factors of a number helps to understand division.	Students will know… ● place value and whole numbers ● place value concepts and comparing values ● formal procedures for rounding ● estimation strategies ● solving number stories with addition and subtraction ● U.S. traditional addition ● U.S. traditional subtraction ● U.S. customary units of length ● points, lines, segments, rays ● properties angles, triangles, ● formulas for perimeter ● square numbers ● formulating for area ● factors and factor pairs ● multiples ● prime and composite numbers ● units of time ● statements and equations ● multiplicative comparison number stories ● classified triangles and	Students will be able to… ● identify place value and whole numbers ● formulate numbers based on place value clues ● solve place value concepts ● compare values ● differentiate different strategies for rounding ● examine estimation strategies ● demonstrate, analyze and solve addition and subtraction problems to include number stories using U.S. traditional addition and subtraction ● convert yard, feet, and inches ● identify the properties of points, lines, segments, and rays ● classify the properties of angles, triangles, and quadrilaterals ● develop formulas for finding the perimeter of a rectangle ● review rectangular rays and explain patterns in square numbers ● develop a formula for finding	What is the conversion from feet to yards? What is the formula for perimeter? What does the “5” represent in the number 34,578? How do you write a number (example: 756) in expanded form? What number is a factor of 16? What is the formula for area? How many minutes are in 10 hours?

	quads ● lines of symmetry ● pattern recognition ● equal sharing and equivalents ● fraction circles ● number lines and equivalents ● equivalent fraction rules ● fractions comparisons ● orders of fractions ● tenths with fraction circles ● decimals with base ten blocks ● decimals ● tenths and hundredths of a meter ● centimeters and millimeters ● decimal comparisons	the area of a rectangle ● examine factors and factor pairs of numbers up to 100 ● explain a whole number and each of its factors ● classify numbers as either prime or composite numbers ● convert units of time to smaller units of time ● solve number stories involving time ● create and interpret statements and questions for multiplicative comparison ● classify triangles and quads ● examine symmetry in nature, objects, and shapes ● analyze different patterns using the “What’s My Rule?” routine ● solve number stories involving equally shared quantities ● develop a model to recognize equivalent fractions ● utilize a number line model to generate equivalent fractions ● develop a universal rule for finding equivalent fractions ● compare and order fractions ● examine the relationship between fractions and decimals	

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		• model decimals with base ten blocks • examine and write decimals to the 100th place • distinguish and conclude upon tenths and hundredths of a meter • identify millimeters • convert centimeters and millimeters • compare decimals using greater than, less than, equal to	
Unit/Chapter/Selection of Study Unit 1: Place Value and Multi-Digit Addition and Subtraction	**Approx # of weeks - % of time** 4 weeks	**PA Core Standards** CC.2.1.4.B.1 Apply place-value concepts to show an understanding of multi-digit whole numbers. CC.2.1.4.B.2 Use place-value understanding and properties of operations to perform multi-digit arithmetic. CC.2.2.4.A.1 Represent and solve problems involving the four operations CC.2.3.4.A.1 Draw lines and angles and identify these in two-dimensional figures.	**Assessment Anchors & Eligible Content** M04.A-T.1.1.1 Demonstrate an understanding that in a multi-digit whole number (through 1,000,000), a digit in one place represents ten times what it represents in the place to its right. Example: Recognize that in the number 770, the 7 in the hundreds place is ten times the 7 in the tens place. M04.A-T.1.1.2 Read and write whole numbers in expanded, standard, and word form through 1,000,000. M04.A-T.1.1.3 Compare two multi-digit

		CC.2.3.4.A.2 Classify two dimensional figures by properties of their lines and angles. CC.2.4.4.A.1 Solve problems involving measurement and conversions from a larger unit to a smaller unit.	numbers through 1,000,000 based on meanings of the digits in each place, using >, =, and < symbols. M04.A-T.1.1.4 Round multi-digit whole numbers (through 1,000,000) to any place. M04.A-T.2.1.1 Add and subtract multi-digit whole numbers (limit sums and subtrahends up to and including 1,000,000). M04.A-T.2.1.4 Estimate the answer to addition, subtraction, and multiplication problems using whole numbers through six digits (for multiplication, no more than 2 digits × 1 digit, excluding powers of 10). M04.B-O.1.1.3 Solve multi-step word problems posed with whole numbers using the four operations. Answers will be either whole numbers or have remainders that must be interpreted yielding a final answer that is a whole number. Represent these problems using equations with a symbol or letter standing for the unknown quantity. M04.B-O.1.1.4 Identify the missing

			symbol (+, –, ×, ÷, =, <, and >) that makes a number sentence true (single-digit divisor only). M04.C-G.1.1.1 Draw points, lines, line segments, rays, angles (right, acute, and obtuse), and perpendicular and parallel lines. Identify these in two dimensional figures. M04.C-G.1.1.2 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. M04.D-M.1.1.1 Know relative sizes of measurement units within one system of units including standard units (in., ft, yd, mi; oz., lb; and c, pt, qt, gal), metric units (cm, m, km; g, kg; and mL, L), and time (sec, min, hr, day, wk, mo, and yr). Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. A table of equivalencies will be provided. Example 1: Know that 1 kg is 1,000 times as heavy as 1 g. Example 2: Express the length of a 4-foot snake as 48 in.

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			M04.D-M.1.1.2 Use the four operations to solve word problems involving distances, intervals of time (such as elapsed time), liquid volumes, masses of objects; 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. M04.D-M.1.1.3 Apply the area and perimeter formulas for rectangles in real-world and mathematical problems (may include finding a missing side length). Whole numbers only. The formulas will be provided.
Unit/Chapter/Selection of Study Unit 2: Multiplication and Geometry	**Approx # of weeks - % of time** 4 weeks	**PA Core Standards** CC.2.2.4.A.1 Represent and solve problems involving the four operations CC.2.2.4.A.2 Develop and/or apply number theory concepts to find factors and multiples. CC.2.2.4.A.4 Generate and analyze patterns using one rule. CC.2.3.4.A.3 Recognize symmetric	**Assessment Anchors & Eligible Content** M04.B-O.1.1.1 Interpret a multiplication equation as a comparison. Represent verbal statements of multiplicative comparisons as multiplication equations. Example 1: Interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Example 2: Know that the statement 24 is 3 times as many as 8

		shapes and draw lines of symmetry. CC.2.4.4.A.1 Solve problems involving measurement and conversions from a larger unit to a smaller unit.	can be represented by the equation 24 = 3 × 8 or 24 = 8 × 3. M04.B-O.1.1.2 Multiply or divide to solve word problems involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison. Example: Know that 3 × 4 can be used to represent that Student A has 4 objects and Student B has 3 times as many objects not just 3 more objects. M04.B-O.2.1.1 Find all factor pairs for a whole number in the interval 1 through 100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the interval 1 through 100 is a multiple of a given one digit number. Determine whether a given whole number in the interval 1 through 100 is prime or composite. M04.B-O.3.1.1 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. Example 1: Given the rule “add 3” and the starting number 1, generate terms in the resulting

			sequence and observe that the terms alternate between odd and even numbers. Example 2: Given the rule “increase the number of sides by 1” and starting with a triangle, observe that the tops of the shapes alternate between a side and a vertex. M04.B-O.3.1.2 Determine the missing elements in a function table (limit to +, –, or × and to whole numbers or money). M04.B-O.3.1.3 Determine the rule for a function given a table (limit to +, –, or × and to whole numbers). M04.C-G.1.1.3 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 mirroring parts. Identify line-symmetric figures and draw lines of symmetry (up to two lines of symmetry). M04.D-M.1.1.4 Identify time (analog or digital) as the amount of minutes before or after the hour. Example 1: 2:50 is the same as 10 minutes before 3:00. Example 2: Quarter past six is the same as 6:15.

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			M04.D-M.1.1.3 Apply the area and perimeter formulas for rectangles in real-world and mathematical problems (may include finding a missing side length). Whole numbers only. The formulas will be provided.
Unit/Chapter/Selection of Study Unit 3: Fractions and Decimals	**Approx # of weeks - % of time** 1 week (starts in 1st nine weeks and continues into 2nd nine weeks)	**PA Core Standards** CC.2.1.4.C.1 Extend the understanding of fractions to show equivalence and ordering CC.2.1.4.C.3 Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100). CC.2.4.4.A.1 Solve problems involving measurement and conversions from a larger unit to a smaller unit.	**Assessment Anchors & Eligible Content** M04.A-F.1.1.1 Recognize and generate equivalent fractions. M04.A-F.1.1.2 Compare two fractions with different numerators and different denominators (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100) using the symbols >, =, or < and justify the conclusions. M04.A-F.3.1.2 Use decimal notation for fractions with denominators 10 or 100. Example: Rewrite 0.62 as 62/100 and vice versa. M04.A-F.3.1.3 Compare two decimals to hundredths using the symbols >, =, or <, and justify the conclusions. M04.D-M.1.1.1 Know relative sizes of measurement units within one system of units including standard units (in.,

			ft, yd, mi; oz., lb; and c, pt, qt, gal), metric units (cm, m, km; g, kg; and mL, L), and time (sec, min, hr, day, wk, mo, and yr). Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. A table of equivalencies will be provided. Example 1: Know that 1 kg is 1,000 times as heavy as 1 g. Example 2: Express the length of a 4-foot snake as 48 in.

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Big Idea(s) for 2nd nine weeks	Concept(s) of 2nd nine weeks	Competencies of 2nd nine weeks	Essential Questions for 2nd nine weeks
The extension of multiplication facts builds basic understanding, expanding to larger numbers and recognizing/applying smaller facts into multi-digit multiplication solutions.	Students will know… ● equal sharing and equivalents ● fraction circles ● number lines and equivalents ● equivalent fraction rules ● fractions comparisons ● orders of fractions ● tenths with fraction circles ● decimals with base ten blocks ● decimals ● tenths and hundredths of a meter ● centimeters and millimeters ● decimal comparisons ● extended multiplication facts ● reasonable estimates for products ● partitioned rectangle multiplication strategies ● the conversion of liters to milliliters ● the partial products multiplication method ● metric units of mass ● multi-step number stories	Students will be able to… ● solve number stories involving equally shared quantities ● develop a model to recognize equivalent fractions ● utilize a number line model to generate equivalent fractions ● develop a universal rule for finding equivalent fractions ● compare and order fractions ● examine the relationship between fractions and decimals ● model decimals with base ten blocks ● examine and write decimals to the 100th place ● distinguish and conclude upon tenths and hundredths of a meter ● identify millimeters ● convert centimeters and millimeters ● compare decimals using greater than, less than, equal to ● develop a rule for solving extending multiplication facts	Is the number 29 a prime or composite number? How many minutes are in 4 hours? What is a property of a quadrilateral? How many lines of symmetry does a square have? How do you solve using either partial products, partition boxes or lattice on a whiteboard: 49 x 8 = ? How do you solve the following multi-step word problem? - *Mr. Hay, Mrs. Richards, and Mrs. O'Donnell drive together from their homes to the Steelers game. Mr. Hay drives for 45 miles, and Mrs. Richards drives two times as far as Mr. Hay. Then Mrs. O'Donnell drives twice as far as Mr. Hay and Mrs. Richards combined! How far did Mrs. O'Donnell drive?* How do you solve the following multi-step word problem? - *Mr. Hay is buying a new Xbox for $576. He paid*

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	involving money • the partial products multiplication method • areas models for rectangles • mutli-step multiplication number stories • the lattice multiplication method	• formulate estimates and evaluate reasonable estimates • develop the partitioning rectangles strategy to solve multiplication problems • convert liters to milliliters • solve multiplication problems using partial products multiplication methods • solve problems through conversion of the metric system • analyze multi-step number stories with money • examine rectilinear figures and apply the area formula to solve them • analyze multi-step multiplication number stories • solve multiplication problem using the lattice multiplication	*for the Xbox using four $100 bills, sixteen $10 bills, and thirty $1 bills. How much did Mr. Hay pay?*
Unit/Chapter/Selection of Study Unit 3: Factors and Decimals (continued)	**Approx # of weeks - % of time** 3 weeks (continues from 1st nine weeks)	**PA Core Standards** CC.2.1.4.C.1 Extend the understanding of fractions to show equivalence and ordering CC.2.1.4.C.3 Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).	**Assessment Anchors & Eligible Content** M04.A-F.1.1.1 Recognize and generate equivalent fractions. M04.A-F.1.1.2 Compare two fractions with different numerators and different denominators (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100) using

		CC.2.4.4.A.1 Solve problems involving measurement and conversions from a larger unit to a smaller unit.	the symbols >, =, or < and justify the conclusions. M04.A-F.3.1.2 Use decimal notation for fractions with denominators 10 or 100. Example: Rewrite 0.62 as 62/100 and vice versa. M04.A-F.3.1.3 Compare two decimals to hundredths using the symbols >, =, or <, and justify the conclusions. M04.D-M.1.1.1 Know relative sizes of measurement units within one system of units including standard units (in., ft, yd, mi; oz., lb; and c, pt, qt, gal), metric units (cm, m, km; g, kg; and mL, L), and time (sec, min, hr, day, wk, mo, and yr). Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. A table of equivalencies will be provided. Example 1: Know that 1 kg is 1,000 times as heavy as 1 g. Example 2: Express the length of a 4-foot snake as 48 in.

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Unit/Chapter/Selection of Study	**Approx # of weeks - % of time**	**PA Core Standards**	**Assessment Anchors & Eligible Content**
Unit 4: Multi-digit Multiplication Extending Multiplication Facts	6 weeks	CC.2.2.4.A.1 Represent and solve problems involving the four operations CC.2.4.4.A.1 Solve problems involving measurement and conversions from a larger unit to a smaller unit. CC.2.1.4.B.2 Use place-value understanding and properties of operations to perform multi-digit arithmetic.	M04.B-O.1.1.3 Solve multi-step word problems posed with whole numbers using the four operations. Answers will be either whole numbers or have remainders that must be interpreted yielding a final answer that is a whole number. Represent these problems using equations with a symbol or letter standing for the unknown quantity. M04.D-M.1.1.1 Know relative sizes of measurement units within one system of units including standard units (in., ft, yd, mi; oz., lb; and c, pt, qt, gal), metric units (cm, m, km; g, kg; and mL, L), and time (sec, min, hr, day, wk, mo, and yr). Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. A table of equivalencies will be provided. Example 1: Know that 1 kg is 1,000 times as heavy as 1 g. Example 2: Express the length of a 4-foot snake as 48 in. M04.D-M.1.1.2 Use the four operations to solve word problems involving distances, intervals of time

			(such as elapsed time), liquid volumes, masses of objects; 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. M04.A-T.2.1.2 Multiply a whole number of up to four digits by a one-digit whole number and multiply 2 two-digit numbers

Big Idea(s) for 3rd nine weeks	Concept(s) of 3rd nine weeks	Competencies of 3rd nine weeks	Essential Questions for 3rd nine weeks
Comparing and measuring fractions and mixed numbers are foundations to math skills and expand beyond real numbers. Fractions and mixed numbers serve as a key to understanding real-life measurements such as hours, tablespoons, etc. Division is essential to understanding equal sharing and breaking of a whole number into smaller parts.	Students will know… ● fraction decomposition ● fraction addition ● mixed number addition with the same denominator ● addition of unlike fractions with 10ths and 100ths ● subtraction of fractions with like denominators ● subtraction of mixed numbers ● line plots with fractions ● unit iteration for angles ● symmetric figures ● multi-step multiplication	Students will be able to… ● decompose or break down fractions into sums of fractions ● add fractions with like denominators ● solve mixed numbers with the same denominator ● convert and add unlike fractions with 10ths and 100ths ● subtract fractions with like denominators ● subtract mixed numbers with like denominators ● construct line plots and record data on line plots using	How do you write 4/5 as a sum of unit fractions? What is 4/10 + 40/100? Explain the process for dividing 7,456 / 6 = ? What is the process of multiplying two digit by two digit numbers? How do you determine if an angle is acute or obtuse? How do we make a mixed number an

	number stories ● extended division facts ● application of area formulas for finding missing sides ● strategies for division ● partial quotients ● U.S. customary weight conversions ● remainders ● angle measurements with protractors ● angle measures as additive ● fraction and mixed numbers stories ● whole number multiplication ● fractions as multiples of a unit fraction ● fraction multiplication by whole numbers ● multiplication of mixed numbers by whole numbers	fractional units ● apply the definition of a degree to measure angles ● create symmetric figures ● analyze multi-step multiplication number stories ● develop strategies for solving extending division facts ● relate the formula for area to a rectangle with a missing side ● solve division problems using multiples of a number ● examine and apply partial quotients ● convert U.S. customary units of weight ● examine how and when to express remainders using division ● measure angles ● demonstrate the use of a half circle protractor to measure angles ● demonstrate addition and substation methods to measure angles without the use of a protractor ● analyze fraction and mixed number stories ● demonstrate and apply understanding of whole number multiplication to	improper fraction? How many cups are in 6 pints?

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		multiply fractions by whole numbers	
Unit/Chapter/Selection of Study Unit 5: Fraction and Mixed Numbers Comparison and Measurement	**Approx # of weeks - % of time** 4 weeks	**PA Core Standards** CC.2.1.4.C.2 Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. CC.2.1.4.C.3 Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100). CC.2.2.4.A.1 Represent and solve problems involving the four operations CC.2.3.4.A.3 Recognize symmetric shapes and draw lines of symmetry. CC.2.4.4.A.2 Translate information from one type of data display to another. CC.2.4.4.A.4 Represent and interpret data involving fractions using information provided in a line plot.	**Assessment Anchors & Eligible Content** M04.A-F.2.1.1 Add and subtract fractions with a common denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; answers do not need to be simplified; and no improper fractions as the final answer). M04.A-F.2.1.2 Decompose a fraction or a mixed number into a sum of fractions with the same denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100), recording the decomposition by an equation. Justify decompositions (e.g., by using a visual fraction model). Example 1: 3/8 = 1/8 + 1/8 + 1/8 OR 3/8 = 1/8 + 2/8 Example 2: 2 1/12 = 1 + 1 + 1/12 = 12/12 + 12/12 + 1/12 M04.A-F.2.1.3 Add and subtract mixed numbers with a common denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; no regrouping with subtraction; fractions do not need to be simplified; and no improper fractions as the final answers).

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			M04.A-F.2.1.4 Solve word problems involving addition and subtraction of fractions referring to the same whole or set and having like denominators (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100). M04.A-F.3.1.1 Add two fractions with respective denominators 10 and 100. Example: Express 3/10 as 30/100, and add 3/10 + 4/100 = 30/100 + 4/100 = 34/100. M04.B-O.1.1.3 Solve multi-step word problems posed with whole numbers using the four operations. Answers will be either whole numbers or have remainders that must be interpreted yielding a final answer that is a whole number. Represent these problems using equations with a symbol or letter standing for the unknown quantity. M04.C-G.1.1.3 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 mirroring parts. Identify line-symmetric figures and draw lines of symmetry (up to two lines of symmetry).

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			M04.D-M.2.1.3 Translate information from one type of display to another (table, chart, bar graph, or pictograph). M04.D-M.2.1.1 Make a line plot to display a data set of measurements in fractions of a unit (e.g., intervals of 1/2, 1/4, or 1/8). M04.D-M.2.1.2 Solve problems involving addition and subtraction of fractions by using information presented in line plots (line plots must be labeled with common denominators, such as 1/4, 2/4, 3/4).
Unit/Chapter/Selection of Study Unit 6: Division and Angles	**Approx # of weeks - % of time** 5 weeks (starts in the 3rd nine weeks and continues into the 4th nine weeks)	**PA Core Standards** CC.2.1.4.C.2 Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. CC.2.2.4.A.1 Represent and solve problems involving the four operations CC.2.4.4.A.1 Solve problems involving measurement and conversions from a larger unit to a smaller unit.	**Assessment Anchors & Eligible Content** M04.A-F.2.1.5 Multiply a whole number by a unit fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100 and final answers do not need to be simplified or written as a mixed number). Example: 5 × (1/4) = 5/4 M04.A-F.2.1.6 Multiply a whole number by a non-unit fraction

		CC.2.4.4.A.6 Measure angles and use properties of adjacent angles to solve problems. CC.2.1.4.B.2 Use place-value understanding and properties of operations to perform multi-digit arithmetic.	(denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100 and final answers do not need to be simplified or written as a mixed number). Example: 3 × (5/6) = 15/6 M04.A-F.2.1.7 Solve word problems involving multiplication of a whole number by a fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100). M04.B-O.1.1.3 Solve multi-step word problems posed with whole numbers using the four operations. Answers will be either whole numbers or have remainders that must be interpreted yielding a final answer that is a whole number. Represent these problems using equations with a symbol or letter standing for the unknown quantity. M04.D-M.1.1.1 Know relative sizes of measurement units within one system of units including standard units (in., ft, yd, mi; oz., lb; and c, pt, qt, gal), metric units (cm, m, km; g, kg; and mL, L), and time (sec, min, hr, day, wk, mo, and yr). Within a single system of measurement, express measurements in a larger unit in

			terms of a smaller unit. A table of equivalencies will be provided. Example 1: Know that 1 kg is 1,000 times as heavy as 1 g. Example 2: Express the length of a 4-foot snake as 48 in. M04.D-M.1.1.2 Use the four operations to solve word problems involving distances, intervals of time (such as elapsed time), liquid volumes, masses of objects; 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. M04.D-M.1.1.3 Apply the area and perimeter formulas for rectangles in real-world and mathematical problems (may include finding a missing side length). Whole numbers only. The formulas will be provided. M04.D-M.3.1.1 Measure angles in whole-number degrees using a protractor. With the aid of a protractor, sketch angles of specified measure. M04.D-M.3.1.2 Solve addition and subtraction problems to find unknown

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			angles on a diagram in real-world and mathematical problems. (Angles must be adjacent and non-overlapping.) M04.A-T.2.1.3 Divide up to four-digit dividends by one-digit divisors with answers written as whole-number quotients and remainders.

Big Idea(s) for 4th nine weeks	Concept(s) of 4th nine weeks	Competencies of 4th nine weeks	Essential Questions for 4th nine weeks
Angles are the highest level of understanding fractions and shapes. Studying angles allows for spatial understanding. Angles illustrate the relationship between numbers and measurements.	Students will know… ● strategies for division ● partial quotients ● U.S. customary weight conversions ● remainders ● angle measurements with protractors ● angle measures as additive ● fraction and mixed numbers stories ● whole number multiplication ● fractions as multiples of a unit fraction ● fraction multiplication by whole numbers ● multiplication of mixed	Students will be able to… ● develop strategies for solving extending division facts ● relate the formula for area to a rectangle with a missing side ● solve division problems using multiples of a number ● examine and apply partial quotients ● convert U.S. customary units of weight ● examine how and when to express remainders using division ● measure angles ● demonstrate the use of a half circle protractor to measure	Solve for the following equation: 5 x 1/6 How do you use a protractor to measure the following angle? (see image) How would you interpret the remainder in this number story? - *Mr. Chew has a box of 250 pens. He asks Maurice to divide the pens into boxes of 8. How many boxes will Maurice make?* How do you calculate the missing angle from a supplementary angle? (see image)

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	numbers by whole numbers ● U.S. customary liquid measure conversions ● the application of state standards and math skills	angles ● demonstrate addition and subtraction methods to measure angles without the use of a protractor ● analyze fraction and mixed number stories ● demonstrate and apply understanding of whole number multiplication to multiply fractions by whole numbers ● convert U.S.customary liquid measures ● review, remediation and application of math skills	Explain how to solve the following mixed number equation: 5,600 / 8,000 = ?
Unit/Chapter/Selection of Study Unit 6 and Unit 7A: Division and Angles	**Approx # of weeks - % of time** 2 weeks (continues from 3rd nine weeks)	**PA Core Standards** CC.2.1.4.C.2 Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. CC.2.2.4.A.1 Represent and solve problems involving the four operations CC.2.4.4.A.1 Solve problems involving measurement and conversions from a larger unit to a smaller unit. CC.2.4.4.A.6 Measure angles and use	**Assessment Anchors & Eligible Content** M04.A-F.2.1.5 Multiply a whole number by a unit fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100 and final answers do not need to be simplified or written as a mixed number). Example: 5 × (1/4) = 5/4 M04.A-F.2.1.6 Multiply a whole number by a non-unit fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100 and final answers

		properties of adjacent angles to solve problems. CC.2.1.4.B.2 Use place-value understanding and properties of operations to perform multi-digit arithmetic.	do not need to be simplified or written as a mixed number). Example: 3 × (5/6) = 15/6 M04.A-F.2.1.7 Solve word problems involving multiplication of a whole number by a fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100). M04.B-O.1.1.3 Solve multi-step word problems posed with whole numbers using the four operations. Answers will be either whole numbers or have remainders that must be interpreted yielding a final answer that is a whole number. Represent these problems using equations with a symbol or letter standing for the unknown quantity. M04.D-M.1.1.1 Know relative sizes of measurement units within one system of units including standard units (in., ft, yd, mi; oz., lb; and c, pt, qt, gal), metric units (cm, m, km; g, kg; and mL, L), and time (sec, min, hr, day, wk, mo, and yr). Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. A table of equivalencies will be provided. Example 1: Know that 1 kg is 1,000

			times as heavy as 1 g. Example 2: Express the length of a 4-foot snake as 48 in. M04.D-M.1.1.2 Use the four operations to solve word problems involving distances, intervals of time (such as elapsed time), liquid volumes, masses of objects; 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. M04.D-M.1.1.3 Apply the area and perimeter formulas for rectangles in real-world and mathematical problems (may include finding a missing side length). Whole numbers only. The formulas will be provided. M04.D-M.3.1.1 Measure angles in whole-number degrees using a protractor. With the aid of a protractor, sketch angles of specified measure. M04.D-M.3.1.2 Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems. (Angles must be adjacent and non-overlapping.)

			M04.A-T.2.1.3 Divide up to four-digit dividends by one-digit divisors with answers written as whole-number quotients and remainders. M04.D-M.1.1.1 Know relative sizes of measurement units within one system of units including standard units (in., ft, yd, mi; oz., lb; and c, pt, qt, gal), metric units (cm, m, km; g, kg; and mL, L), and time (sec, min, hr, day, wk, mo, and yr). Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. A table of equivalencies will be provided. Example 1: Know that 1 kg is 1,000 times as heavy as 1 g. Example 2: Express the length of a 4-foot snake as 48 in. M04.D-M.1.1.2 Use the four operations to solve word problems involving distances, intervals of time (such as elapsed time), liquid volumes, masses of objects; 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.

Berlin Brothersvalley School District
Berlin Brothersvalley Elementary School
4th Grade Math Curriculum Framework
Full Year Course

Unit/Chapter/Selection of Study	**Approx # of weeks - % of time**	**PA Core Standards**	**Assessment Anchors & Eligible Content**
Application and Review of Math Skills	7 weeks	All standards listed above are included in this unit.	All eligible content listed above are included in this unit.

Standards Legend: Essential Important Supplementary

Revised 5/14/24