BCIU Berks County Intermediate Unit 14 an educational service agency

Grade 3		
PA Common Core Standard	**PA Eligible Content**	**Common Core State Standard**
2.1.3.B.1 Apply place value understanding and properties of operations to perform multi-digit arithmetic.	**M03.A-T.1.1.1** Round two- and three-digit whole numbers to the nearest ten or hundred, respectively.	**3.NBT.1.** Use place value understanding to round whole numbers to the nearest 10 or 100.
	M03.A-T.1.1.2 Add two- and three-digit whole numbers (limit sums from 100 through 1,000), and subtract two-and three-digit numbers from three-digit whole numbers.	**3.NBT.2.** Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
	M03.A-T.1.1.3 Multiply one-digit whole numbers by two-digit multiples of 10 (from 10 through 90).	**3.NBT.3.** Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.
	M03.A-T.1.1.4 Order a set of whole numbers from least to greatest or greatest to least (up through 9,999; limit sets to no more than four numbers).	**NO MATCH**
2.1.3.C.1 Explore and develop an understanding of fractions as numbers.	**M03.A-F.1.1.1** Demonstrate that when a whole or set is partitioned into y equal parts, the fraction $1/y$ represents 1 part of the whole and the fraction x/y represents x equal parts of the whole (limit the denominators to 2, 3, 4, 6, and 8; limit numerators to whole numbers less than the denominator; no simplification necessary).	**3.NF.1**. Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.
	M03.A-F.1.1.2 Represent fractions on a number line diagram (limit the denominators to 2, 3, 4, 6, and 8; limit numerators to whole numbers less than the denominator; no simplification necessary).	**3.NF.2.** Understand a fraction as a number on the number line; represent fractions on a number line diagram. **a.** Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. b. Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.

Grade 3		
PA Common Core Standard	**PA Eligible Content**	**Common Core State Standard**
	M03.A-F.1.1.3 Recognize and generate simple equivalent fractions (limit the denominators to 1, 2, 3, 4, 6, and 8; limit numerators to whole numbers less than the denominator). *Example 1: 1/2 = 2/4; Example 2: 4/6 = 2/3*	**3.NF.3.** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. **a.** Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. **b.** Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model.
	M03.A-F.1.1.4 Express whole numbers as fractions, and generate fractions that are equivalent to whole numbers (limit the denominators to 1, 2, 3, 4, 6, and 8). *Example 1: Express 3 in the form 3 = 3/1 Example 2: Recognize that 6/1 = 6*	**3.NF.3.** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. **c.** Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.*
	M03.A-F.1.1.5 Compare two fractions with the same denominator (limit the denominators to 1, 2, 3, 4, 6, and 8),using the symbols >, =, or <, and/or justify the conclusions.	**3.NF.3.** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. **d.** Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

Grade 3		
PA Common Core Standard	**PA Eligible Content**	**Common Core State Standard**
2.2.3.A.1 Represent and solve problems involving multiplication and division.	**M03.B-O.1.1.1** Interpret and/or describe products of whole numbers (up to and including 10 × 10). *Example 1: Interpret 35 as the total number of objects in 5 groups, each containing 7 objects. Example 2: Describe a context in which a total number of objects can be expressed as 5 × 7.*	**3.OA.1.** Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5 × 7.
	M03.B-O.1.1.2 Interpret and/or describe whole-number quotients of whole numbers (limit dividends through 50, and limit divisors and quotients through 10). *Example 1: Interpret 48 ÷ 8 as the number of objects in each share when 48 objects are partitioned equally into 8 shares, or as a number of shares when 48 objects are partitioned into equal shares of 8 objects each. Example 2: Describe a context in which a number of shares or a number of groups can be expressed as 48 ÷ 8.*	**3.OA.2**. Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.*
	M03.B-O.1.2.1 Use multiplication (up to and including 10 × 10) and/or division (limit dividends through 50, and limit divisors and quotients through 10) to solve word problems in situations involving equal groups, arrays, and/or measurement quantities.	**3.OA.3.** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
	M03.B-O.1.2.2 Determine the unknown whole number in a multiplication (up to and including 10 × 10) or division (limit dividends through 50, and limit divisors and quotients through 10) equation relating three whole numbers. *Example: Determine the unknown number that makes an equation true.*	**3.OA.4.** Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = _ ÷ 3, 6 × 6 = ?*

Grade 3		
PA Common Core Standard	**PA Eligible Content**	**Common Core State Standard**
2.2.3.A.2 Understand properties of multiplication and the relationship between multiplication and division.	**M03.B-O.2.1.1** Apply the commutative property of multiplication (not identification or definition of the property).	**3.OA.5**. Apply properties of operations as strategies to multiply and divide. *Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)*
	M03.B-O.2.1.2 Apply the associative property of multiplication (not identification or definition of the property).	
	M03.B-O.2.2.1 Interpret and/or model division as a multiplication equation with an unknown-factor. *Example: Find 32 ÷ 8 by solving 8 × ? = 32.*	**3.OA.6.** Understand division as an unknown-factor problem. For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.
2.2.3.A.3 Demonstrate multiplication and division fluency.	**NO MATCH**	**3.OA.7.** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
2.2.3.A.4 Solve problems involving the four operations, and identify and explain patterns in arithmetic.	**M03.B-O.3.1.1** Solve two-step word problems using the four operations (expressions are not explicitly stated). Limit to problems with whole numbers and having whole-number answers.	**3.OA.8.** Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
	M03.B-O.3.1.2 Represent two-step word problems using equations with a symbol standing for the unknown quantity. Limit to problems with whole numbers and having whole-number answers.	
	M03.B-O.3.1.3 Assess the reasonableness of answers. Limit problems posed with whole numbers and having whole-number answers.	**NO MATCH**
	M03.B-O.3.1.4 Solve two-step equations using order of operations (equation is explicitly stated with no grouping symbols).	**NO MATCH**

Grade 3		
PA Common Core Standard	**PA Eligible Content**	**Common Core State Standard**
	M03.B-O.3.1.5 Identify arithmetic patterns (including patterns in the addition table or multiplication table) and/or explain them using properties of operations. *Example 1: Observe that 4 times a number is always even. Example 2: Explain why 6 times a number can be decomposed into three equal addends.*	**3.OA.9.** Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*
	M03.B-O.3.1.6 Create or match a story to a given combination of symbols (+, –, ×, ÷, <, >, =) and numbers.	**NO MATCH**
	M03.B-O.3.1.7 Identify the missing symbol (+, –, =, <, >) that makes a number sentence true.	**NO MATCH**
2.3.3.A.1 Identify, compare, and classify shapes and their attributes.	**M03.C-G.1.1.1** Explain that shapes in different categories may share attributes, and that the shared attributes can define a larger category. *Example 1: A rhombus and a rectangle are both quadrilaterals since they both have exactly four sides. Example 2: A triangle and a pentagon are both polygons since they are both multi-sided plane figures.*	**3.G.1.** Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
	M03.C-G.1.1.2 Recognize rhombi, rectangles, and squares as examples of quadrilaterals, and/or draw examples of quadrilaterals that do not belong to any of these subcategories.	
2.3.3.A.2 Use the understanding of fractions to partition shapes into parts with equal areas and express the area of each part as a unit fraction of the whole.	**M03.C-G.1.1.3** Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *Example 1: Partition a shape into 4 parts with equal areas. Example 2: Describe the area of each of 8 equal parts as 1/8 of the area of the shape.*	**3.G.2.** Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.

Grade 3		
PA Common Core Standard	**PA Eligible Content**	**Common Core State Standard**
2.4.3.A.1 Solve problems involving measurement and estimation of temperature, liquid volume, mass or length.	**M03.D-M.1.2.1** Measure and estimate liquid volumes and masses of objects using standard units (cups [c], pints [pt], quarts [qt], gallons [gal], ounces [oz.], and pounds [lb]) and metric units (liters [l], grams [g], and kilograms [kg]).	**3.MD.2.** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).1 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.
	M03.D-M.1.2.2 Add, subtract, multiply, and divide to solve one-step word problems involving masses or liquid volumes that are given in the same units.	
	M03.D-M.1.2.3 Use a ruler to measure lengths to the nearest quarter inch or centimeter.	**NO MATCH**
2.4.3.A.2 Tell and write time to the nearest minute and solve problems by calculating time intervals.	**M03.D-M.1.1.1** Tell, show, and/or write time (analog) to the nearest minute.	**3.MD.1.** Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.
	M03.D-M.1.1.2 Calculate the elapsed time to the minute in a given situation (total elapsed time limited to 60 minutes or less).	
2.4.3.A.3 Solve problems and make change using a combination of coins and bills.	**M03.D-M.1.3.1** Compare total values of combinations of coins (penny, nickel, dime, quarter) and or dollar bills less than $5.00.	**NO MATCH**
	M03.D-M.1.3.2 Make change for an amount up to $5.00 with no more than $2.00 change given (penny, nickel, dime, quarter, and dollar).	**NO MATCH**
	M03.D-M.1.3.3 Round amounts of money to the nearest dollar.	**NO MATCH**

Grade 3		
PA Common Core Standard	**PA Eligible Content**	**Common Core State Standard**
2.4.3.A.4 Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs.	**M03.D-M.2.1.1** Complete a scaled pictograph and a scaled bar graph to represent a data set with several categories (scales limited to 1, 2, 5, and 10).	**3.MD.3.** Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*
	M03.D-M.2.1.2 Solve one- and two-step problems using information to interpret data presented in scaled pictographs and scaled bar graphs (scales limited to 1, 2, 5, and 10). *Example 1: (One-step) "Which category is the largest?" Example 2: (Two-step) "How many more is in category A than in category B?"*	
	M03.D-M.2.1.3 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Display the data by making a line plot, where the horizontal scale is marked in appropriate units—whole numbers, halves, or quarters.	**3.MD.4.** Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.
	M03.D-M.2.1.4 Translate information from one type of display to another. Limit to pictographs, tally charts, bar graphs, and tables. *Example: Convert tally chart to bar graph.*	**NO MATCH**
2.4.3.A.5 Determine the area of a rectangle and apply the concept to multiplication and to addition.	**M03.D-M.3.1.1** Measure areas by counting unit squares (square cm, square m, square in., square ft, and non-standard square units).	**3.MD.6.** Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
	M03.D-M.3.1.2 Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.	**3.MD.7.** Relate area to the operations of multiplication and addition. **b.** Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.

Grade 3		
PA Common Core Standard	**PA Eligible Content**	**Common Core State Standard**
2.4.3.A.6 Solve problems involving perimeters of polygons and distinguish between linear and area measures.	**M03.D-M.4.1.1** Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas, and exhibiting rectangles with the same area and different perimeters. Use the same units throughout the problem.	**3.MD.8.** Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.
	NO MATCH	**3.MD.5.** Recognize area as an attribute of plane figures and understand concepts of area measurement. **a.** A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. **b**. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.
	NO MATCH	**3.MD.7.** Relate area to the operations of multiplication and addition. **a.** Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. **c.** Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning. **d.** Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.