PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
	Grade K	
CC.2.1.K.A.1 Know number names and write and recite the count sequence.	K.CC.1 Count to 100 by ones and by tens.	2.1.K.A Demonstrate the relationship between numbers and quantities, including rote counting, one-to-one correspondence, and counting by tens, and comparing values of whole numbers up to 20.
CC.2.1.K.A.1 Know number names and write and recite the count sequence.	K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	2.1.K.A Demonstrate the relationship between numbers and quantities, including rote counting, one-to-one correspondence, and counting by tens, and comparing values of whole numbers up to 20.
CC.2.1.K.A.1 Know number names and write and recite the count sequence.	K.CC.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	2.1.K.A Demonstrate the relationship between numbers and quantities, including rote counting, one-to-one correspondence, and counting by tens, and comparing values of whole numbers up to 20.
CC.2.1.K.A.2 Apply one-to one correspondence to count the number of objects.	K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality.	2.1.K.A Demonstrate the relationship between numbers and quantities, including rote counting, one-to-one correspondence, and counting by tens, and comparing values of whole numbers up to 20.
CC.2.1.K.A.2 Apply one-to one correspondence to count the number of objects.	K.CC.4a When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.	2.1.K.A Demonstrate the relationship between numbers and quantities, including rote counting, one-to-one correspondence, and counting by tens, and comparing values of whole numbers up to 20.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.K.A.2 Apply one-to one correspondence to count the number of objects.	K.CC.4b Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	2.1.K.A Demonstrate the relationship between numbers and quantities, including rote counting, one-to-one correspondence, and counting by tens, and comparing values of whole numbers up to 20.
CC.2.1.K.A.2 Apply one-to one correspondence to count the number of objects.	K.CC.4c Understand that each successive number name refers to a quantity that is one larger.	2.1.K.A Demonstrate the relationship between numbers and quantities, including rote counting, one-to-one correspondence, and counting by tens, and comparing values of whole numbers up to 20.
CC.2.1.K.A.2 Apply one-to one correspondence to count the number of objects.	K.CC.5 Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.	2.1.K.A Demonstrate the relationship between numbers and quantities, including rote counting, one-to-one correspondence, and counting by tens, and comparing values of whole numbers up to 20.
CC.2.1.K.A.3 Apply the concept of magnitude to compare numbers and quantities.	K.CC.6 Compare numbers. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. (Include groups with up to ten objects.)	2.1.K.A Demonstrate the relationship between numbers and quantities, including rote counting, one-to-one correspondence, and counting by tens, and comparing values of whole numbers up to 20.
CC.2.1.K.A.3 Apply the concept of magnitude to compare numbers and quantities.	K.CC.7 Compare numbers. Compare two numbers between 1 and 10 presented as written numerals	2.1.K.A Demonstrate the relationship between numbers and quantities, including rote counting, one-to-one correspondence, and counting by tens, and comparing values of whole numbers up to 20.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.2.K.A.1 Extend the concepts of putting together and taking apart to add and subtract within 10.	K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings (drawings need not show details, but should show the mathematics in the problem), sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	2.1.K.F Use concrete objects to solve addition and subtraction word problems.
CC.2.2.K.A.1 Extend the concepts of putting together and taking apart to add and subtract within 10.	K.OA.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	2.1.K.F Use concrete objects to solve addition and subtraction word problems.
CC.2.2.K.A.1 Extend the concepts of putting together and taking apart to add and subtract within 10.	K.OA.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	2.1.K.F Use concrete objects to solve addition and subtraction word problems.
CC.2.2.K.A.1 Extend the concepts of putting together and taking apart to add and subtract within 10.	K.OA.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.	2.1.K.F Use concrete objects to solve addition and subtraction word problems.
CC.2.2.K.A.1 Extend the concepts of putting together and taking apart to add and subtract within 10.	K.OA.5 Fluently add and subtract within 5.	2.2.K.B Represent and explain the results of adding and subtracting sets of objects up to and including ten, using math vocabulary
CC.2.1.K.B.1 Use place value to compose and decompose numbers within 19.	K.NBT.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (such as 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	2.1.K.C Use concrete objects, drawings, diagrams or models to group objects into sets of ten; separate objects into equal parts.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.K.B.1 Use place value to compose and decompose numbers within 19.	K.NBT.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (such as 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	2.1.K.D Use concrete objects to demonstrate regrouping ones to tens, with adult assistance.
CC.2.4.K.A.1 Describe and compare attributes of length, area, weight, and capacity of everyday objects.	K.MD.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	2.3.K.A Identify similarities and differences in measurement of objects.
CC.2.4.K.A.1 Describe and compare attributes of length, area, weight, and capacity of everyday objects.	K.MD.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.	2.3.K.B Use concrete objects as nonstandard units to estimate and measure.
CC.2.4.K.A.1 Describe and compare attributes of length, area, weight, and capacity of everyday objects.	K.MD.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.	2.3.K.F Compare concrete objects to determine greater or lesser attributes (length, weight).

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.4.K.A.4 Classify objects and count the number of objects in each category.	K.MD.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Limit category counts to be less than or equal to 10.)	Intentionally Blank
CC.2.3.K.A.1 Identify and describe two- and three-dimensional shapes.	K.G.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.	2.9.K.A Identify and describe common 2-dimensional shapes.
CC.2.3.K.A.1 Identify and describe two- and three-dimensional shapes.	K.G.2 Correctly name shapes regardless of their orientations or overall size.	2.9.K.A Identify and describe common 2-dimensional shapes.
CC.2.3.K.A.1 Identify and describe two- and three-dimensional shapes.	K.G.3 Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).	2.9.K.A Identify and describe common 2-dimensional shapes.
CC.2.3.K.A.2 Analyze, compare, create, and compose two- and three-dimensional shapes.	K.G.4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).	Intentionally Blank
CC.2.3.K.A.2 Analyze, compare, create, and compose two- and three-dimensional shapes.	K.G.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	Intentionally Blank
CC.2.3.K.A.2 Analyze, compare, create, and compose two- and three-dimensional shapes.	K.G.6 Compose simple shapes to form larger shapes. For example, "can you join these two triangles with full sides touching to make a rectangle?”	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
	Grade 1	
CC.2.2.1.A.1 Represent and solve problems involving addition and subtraction within 20.	1.OA.1 Use Addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	2.2.1.A Apply concepts of addition and subtraction to solve problems up to ten.
CC.2.2.1.A.1 Represent and solve problems involving addition and subtraction within 20.	1.OA.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	2.1.1.F Select the appropriate operation (addition or subtraction) to solve problems.
CC.2.2.1.A.2 Understand and apply properties of operations and the relationship between addition and subtraction.	1.OA.3 Apply properties of operations as strategies to add and subtract. (Note: Students need not use formal terms for these properties.) Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)	2.8.1.A Use the concept of equality and concrete objects to demonstrate understanding of the commutative and associative properties.
CC.2.2.1.A.2 Understand and apply properties of operations and the relationship between addition and subtraction.	1.OA.4 Understand subtraction as an unknown-addend problem. For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.	2.8.1.A Use the concept of equality and concrete objects to demonstrate understanding of the commutative and associative properties.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.2.1.A.1 Represent and solve problems involving addition and subtraction within 20.	1.OA.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).	2.2.1.A Apply concepts of addition and subtraction to solve problems up to ten.
CC.2.2.1.A.1 Represent and solve problems involving addition and subtraction within 20.	1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).	2.2.1.A Apply concepts of addition and subtraction to solve problems up to ten.
CC.2.2.1.A.2 Understand and apply properties of operations and the relationship between addition and subtraction.	1.OA.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.*	Intentionally Blank
CC.2.2.1.A.2 Understand and apply properties of operations and the relationship between addition and subtraction.	1.OA.8 Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = □ – 3, 6 + 6 = □.	2.8.1.B Use concrete objects and trial and error to solve number sentences.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.1.B.1 Extend the counting sequence to read and write numerals to represent objects.	1.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	2.1.1.A Demonstrate the relationship between numbers and quantities, including place value, one-to-one correspondence, rote counting, counting by twos to 20, counting by tens and fives, and comparing values of whole numbers up to 100.
CC.2.1.1.B.1 Extend the counting sequence to read and write numerals to represent objects.	1.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	2.1.1.B Represent equivalent forms of the same number through the use of pictures and concrete objects (including penny, nickel, dime, and quarter), up to 100.
CC.2.1.1.B.2 Use place value concepts to represent amounts of tens and ones and to compare two digit numbers.	1.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: a. 10 can be thought of as a bundle of ten ones — called a “ten.”b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).	2.1.1.D Apply place value concepts and base-ten numeration to order and compare whole numbers up to 100.
CC.2.1.1.B.2 Use place value concepts to represent amounts of tens and ones and to compare two digit numbers.	1.NBT.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.	2.1.1.D Apply place value concepts and base-ten numeration to order and compare whole numbers up to 100.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.1.B.3 Use place value concepts and properties of operations to add and subtract within 100.	1.NBT.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, 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. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.	2.2.1.B Demonstrate strategies for addition and subtraction in order to solve single- and double-digit addition and subtraction problems.
CC.2.1.1.B.3 Use place value concepts and properties of operations to add and subtract within 100.	1.NBT.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	2.2.1.B Demonstrate strategies for addition and subtraction in order to solve single- and double-digit addition and subtraction problems.
CC.2.1.1.B.3 Use place value concepts and properties of operations to add and subtract within 100.	1.NBT.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), 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.	2.2.1.B Demonstrate strategies for addition and subtraction in order to solve single- and double-digit addition and subtraction problems.
CC.2.4.1.A.1 Order lengths and measure them both indirectly and by repeating length units.	1.MD.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.	2.3.1.B Use concrete objects to measure length by repeating the number of nonstandard or standard units.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.4.1.A.1 Order lengths and measure them both indirectly and by repeating length units.	1.MD.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*	2.3.1.F Compare concrete objects to determine greater or lesser attributes (length, weight, capacity).
CC.2.4.1.A.2 Tell and write time to the nearest half hour using both analog and digital clocks.	1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks.	2.3.1.C. Tell time on an analog and digital clock to the nearest hour and half hour.
CC.2.4.1.A.4 Represent and interpret data using tables/charts.	1.MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	2.6.1.B Organize and display data using pictures, tallies, charts, bar graphs and pictographs.
CC.2.4.1.A.4 Represent and interpret data using tables/charts.	1.MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	2.6.1.C Describe data displayed in a diagram, graph or table.
CC.2.4.1.A.4 Represent and interpret data using tables/charts.	1.MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	2.6.1.D Answer comparative questions based on representations of data.
CC.2.3.1.A.1 Compose and distinguish between two- and three-dimensional shapes based on their attributes.	1.G.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.	2.9.1.A Name, describe and draw/build 2-dimensional shapes

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.3.1.A.1 Compose and distinguish between two- and three-dimensional shapes based on their attributes.	1.G.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. (Note: Students do not need to learn formal names such as "right rectangular prism.")	2.9.1.A Name, describe and draw/build 2-dimensional shapes
CC.2.3.1.A.2 Use the understanding of fractions to partition shapes into halves and quarters.	1.G.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves* , *fourths* , and *quarters* , and use the phrases *half of* , *fourth of* , and *quarter of* . Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.	Intentionally Blank
	Grade 2	
CC.2.2.2.A.1Represent and solve problems involving addition and subtraction within 100.CC.2.2.2.A.1 Represent and solve problems involving addition and subtraction within 100.	2.OA.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. (also aligns to PA Standard 2.8.2.E)	2.8.2.E. Use concrete objects, symbols and numbers to represent mathematical situations.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.2.2.A.2 Use mental strategies to add and subtract within 20.	2.OA.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	2.8.2.E Use concrete objects, symbols and numbers to represent mathematical situations.
CC.2.2.2.A.2 Use mental strategies to add and subtract within 20.	2.OA.2 Add and subtract within 20. Fluently add and subtract with 20 using mental strategies. By the end of Grade 2 know from memory all sums of two one-digit numbers.	2.2.2.A Develop fluency in the use of basic facts for addition and subtraction
CC.2.2.2.A.3 Work with equal groups of objects to gain foundations for multiplication.	2.OA.3 Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.	Intentionally Blank
CC.2.2.2.A.3 Work with equal groups of objects to gain foundations for multiplication.	2.OA.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.2.B.1 Use place value concepts to represent amounts of tens and ones and to compare three digit numbers.	2.NBT.1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: -- a. 100 can be thought of as a bundle of ten tens — called a "hundred." -- b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).	2.1.2.D Apply place value concepts and base-ten numeration to order and compare whole numbers up to 500.
CC.2.1.2.B.2 Use place value concepts to read, write and skip count to 1000.	2.NBT.2 Count within 1000; skip-count by 5s, 10s, and 100s.	2.1.2.A Demonstrate the relationship between numbers and quantities, including place value; one-to-one correspondence; rote counting; counting by twos, fives and tens; and comparing values of whole numbers up to 500.
CC.2.1.2.B.2 Use place value concepts to read, write and skip count to 1000.	2.NBT.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.	2.1.2.E Apply number patterns to represent numbers in various ways (skip counting , repeated addition/subtraction).
CC.2.1.2.B.3 Use place value understanding and properties of operations to add and subtract within 1000.	2.NBT.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	2.2.2.B Add and subtract single and double-digit numbers with and without regrouping, to include problems with money.
CC.2.1.2.B.3 Use place value understanding and properties of operations to add and subtract within 1000.	2.NBT.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.	2.2.2.B Add and subtract single and double-digit numbers with and without regrouping, to include problems with money.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.2.B.3 Use place value understanding and properties of operations to add and subtract within 1000.	2.NBT.7 Add and subtract within 1000, 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. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. (also aligns to PA Standard 2.8.2.E)	2.2.2.B Add and subtract single and double-digit numbers with and without regrouping, to include problems with money.
CC.2.1.2.B.3 Use place value understanding and properties of operations to add and subtract within 1000.	2.NBT.8 Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.	2.2.2.B Add and subtract single and double-digit numbers with and without regrouping, to include problems with money.
CC.2.1.2.B.3 Use place value understanding and properties of operations to add and subtract within 1000.	2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanations may be supported by drawings or objects.)	2.2.2.B Add and subtract single and double-digit numbers with and without regrouping, to include problems with money.
CC.2.4.2.A.1 Measure and estimate lengths in standard units using appropriate tools.	2.MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	2.3.2.B Use tools to estimate and measure in standard units.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.4.2.A.1 Measure and estimate lengths in standard units using appropriate tools.	2.MD.2. Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.	2.3.2.B. Use tools to estimate and measure in standard units.
CC.2.4.2.A.1 Measure and estimate lengths in standard units using appropriate tools.	2.MD.3 Estimate lengths using units of inches, feet, centimeters, and meters.	2.3.2.B. Use tools to estimate and measure in standard units.
CC.2.4.2.A.1 Measure and estimate lengths in standard units using appropriate tools.	2.MD.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.	2.3.2.F Estimate and verify measurements of length, weight, and capacity.
CC.2.4.2.A.6 Extend the concepts of addition and subtraction to problems involving length.	2.MD.5 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.	Intentionally Blank
CC.2.4.2.A.6 Extend the concepts of addition and subtraction to problems involving length.	2.MD.6 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, … and represent whole-number sums and differences within 100 on a number line diagram.	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.4.2.A.2 Tell and write time to the nearest five minutes using both analog and digital clocks.	2.MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	2.3.2.C Tell time on an analog and digital clock to the nearest minute.
CC.2.4.2.A.3 Solve problems using coins and paper currency with appropriate symbols.	2.MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ (dollars) and ¢ (cents) symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?	2.3.2.C Tell time on an analog and digital clock to the nearest minute.
CC.2.4.2.A.4 Represent and interpret data using line plots, picture graphs, and bar graphs.	2.MD.9 Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.	2.6.2.A Gather data from surveys and observations within the classroom or homes.
CC.2.4.2.A.4 Represent and interpret data using line plots, picture graphs, and bar graphs.	2.MD.9 Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.	2.6.2.B Organize and display data using pictures, tallies, charts, bar graphs and pictographs.
CC.2.4.2.A.4 Represent and interpret data using line plots, picture graphs, and bar graphs.	2.MD.9 Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.	2.6.2.C Describe data displayed in a diagram, graph or table.
CC.2.4.2.A.4 Represent and interpret data using line plots, picture graphs, and bar graphs.	2.MD.9 Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.	2.6.2.D Analyze representations of data and compare the data from two categories.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.3.2.A.1 Analyze and draw two- and three-dimensional shapes having specified attributes.	2.G.1 Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. (Sizes are compared directly or visually, not compared by measuring.)	2.9.2.A Name, describe and draw/build 2- and 3-dimensional shapes
CC.2.3.2.A.1 Analyze and draw two- and three-dimensional shapes having specified attributes.	2.G.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	2.9.2.A Name, describe and draw/build 2- and 3-dimensional shapes
CC.2.3.2.A.2 Use the understanding of fractions to partition shapes into halves, quarters, and thirds.	2.G.3 Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.	Intentionally Blank
	Grade 3	
CC.2.1.3.B.1 Apply place value understanding and properties of operations to perform multi-digit arithmetic.	3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.	2.2.3.D Estimate values, sums, and differences of quantities and conclude the reasonableness of those estimates.
CC.2.1.3.B.1 Apply place value understanding and properties of operations to perform multi-digit arithmetic.	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.	2.2.3.B Add and subtract single- and double digit numbers with regrouping and triple-digit numbers, without regrouping including problems with money.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.3.B.1 Apply place value understanding and properties of operations to perform multi-digit arithmetic.	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.	Intentionally Blank
CC.2.1.3.C.1 Explore and develop an understanding of fractions as numbers.	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.	2.1.3.C Use drawings, diagrams or models to show the concept of fraction as part of a whole.
CC.2.1.3.C.1 Explore and develop an understanding of fractions as numbers.	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.	2.1.3.C Use drawings, diagrams or models to show the concept of fraction as part of a whole.
CC.2.1.3.C.1 Explore and develop an understanding of fractions as numbers.	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.	2.1.3.C. Use drawings, diagrams or models to show the concept of fraction as part of a whole.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.3.C.1 Explore and develop an understanding of fractions as numbers.	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.*	2.1.3.C Use drawings, diagrams or models to show the concept of fraction as part of a whole.
CC.2.1.3.C.1 Explore and develop an understanding of fractions as numbers.	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.	2.1.3.C Use drawings, diagrams or models to show the concept of fraction as part of a whole.
CC.2.2.3.A.1 Represent and solve problems involving multiplication and division.	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.	Intentionally Blank
CC.2.2.3.A.1 Represent and solve problems involving multiplication and division.	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.*	Intentionally Blank
CC.2.2.3.A.1 Represent and solve problems involving multiplication and division.	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.	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.2.3.A.1 Represent and solve problems involving multiplication and division.	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 = ?*	Intentionally Blank
CC.2.2.3.A.2 Understand properties of multiplication and the relationship between multiplication and division.	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.)*	Intentionally Blank
CC.2.2.3.A.2 Understand properties of multiplication and the relationship between multiplication and division.	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.	Intentionally Blank
CC.2.2.3.A.3 Demonstrate multiplication and division fluency.	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.	Intentionally Blank
CC.2.2.3.A.4 Solve problems involving the four operations, and identify and explain patterns in arithmetic.	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.3	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.2.3.A.4 Solve problems involving the four operations, and identify and explain patterns in arithmetic.	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.*	2.8.3.C Recognize, describe, extend, create, and replicate a variety of patterns including attribute, activity, number, and geometric patterns.
CC.2.3.3.A.1 Identify, compare, and classify shapes and their attributes	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.	Intentionally Blank
CC.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.	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.	Intentionally Blank
CC.2.4.3.A.1 Solve problems involving measurement and estimation of temperature, liquid volume, mass or length.	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	2.3.3.F Estimate and verify measurements of length, area, weight, and capacity.
CC.2.4.3.A.2 Tell and write time to the nearest minute and solve problems by calculating time intervals.	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.	2.3.3.C Tell time on an analog and digital clock, identify times of day and night as a.m. and p.m., and calculate elapsed time.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.4.3.A.3 Solve problems involving money using a combination of coins and bills.	Intentionally Blank	Intentionally Blank
CC.2.4.3.A.4 Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs.	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.	2.6.3.B Organize and display data using pictures, tallies, charts, bar graphs and pictographs.
CC.2.4.3.A.4 Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs.	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.	2.6.3.E Determine the reasonableness of a statement based on a comparison to data displayed in a graph.
CC.2.4.3.A.4 Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs.	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.	2.6.3.B Organize and display data using pictures, tallies, charts, bar graphs and pictographs.
CC.2.4.3.A.4 Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs.	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.	2.6.3.E Determine the reasonableness of a statement based on a comparison to data displayed in a graph.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.4.3.A.5 Determine the area of a rectangle and apply the concept to multiplication and to addition.	3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft., and improvised units).	Intentionally Blank
CC.2.4.3.A.5 Determine the area of a rectangle and apply the concept to multiplication and to addition.	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.	Intentionally Blank
CC.2.4.3.A.6 Solve problems involving perimeters of polygons and distinguish between linear and area measures.	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.	Intentionally Blank
CC.2.4.3.A.6 Solve problems involving perimeters of polygons and distinguish between linear and area measures.	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.	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.4.3.A.6 Solve problems involving perimeters of polygons and distinguish between linear and area measures.	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.	Intentionally Blank
	Grade 4	
CC.2.1.4.B.1 Apply place value concepts to show an understanding of multi-digit whole numbers.	4.NBT.1 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. *For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.*	2.11.4.A Make comparisons of whole numbers and of unit fractions (e.g., more, less, same, least, most, greater than, less than).
CC.2.1.4.B.1 Apply place value concepts to show an understanding of multi-digit whole numbers.	4.NBT.1 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. *For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.*	2.1.4.D Apply place value concepts and base-ten numeration to order and compare larger whole numbers.
CC.2.1.4.B.1 Apply place value concepts to show an understanding of multi-digit whole numbers.	4.NBT.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	2.11.4.A Make comparisons of whole numbers and of unit fractions (e.g., more, less, same, least, most, greater than, less than).
CC.2.1.4.B.1 Apply place value concepts to show an understanding of multi-digit whole numbers.	4.NBT.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	2.1.4.D Apply place value concepts and base-ten numeration to order and compare larger whole numbers.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.4.B.1 Apply place value concepts to show an understanding of multi-digit whole numbers.	4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place.	Intentionally Blank
CC.2.1.4.B.2 Use place value understanding and properties of operations to perform multi-digit arithmetic.	4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.	2.1.4.F Understand the concepts of addition and subtraction and their inverse relationships; understand the concepts of multiplication and division; use the four basic operations to solve problems, including word problems and equations.
CC.2.1.4.B.2 Use place value understanding and properties of operations to perform multi-digit arithmetic.	4.NBT.5 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. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	2.2.4.B. Multiply single- and double-digit numbers and divide by single digit numbers, add and subtract fractions with like denominators, and add and subtract decimals.
CC.2.1.4.B.2 Use place value understanding and properties of operations to perform multi-digit arithmetic.	4.NBT.6. 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. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.4.C.1 Extend the understanding of fractions to show equivalence and ordering.	4.NF.1 Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × b) by 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. Use this principle to recognize and generate equivalent fractions.	2.1.4.B Represent equivalent forms of the same whole number, the same fraction, or the same decimal through the use of concrete objects, drawings, word names, and symbols.
CC.2.1.4.C.1 Extend the understanding of fractions to show equivalence and ordering.	4.NF.2 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 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.	2.1.4.B Represent equivalent forms of the same whole number, the same fraction, or the same decimal through the use of concrete objects, drawings, word names, and symbols.
CC.2.1.4.C.1 Extend the understanding of fractions to show equivalence and ordering.	4.NF.3 Understand a fraction a/b with a > 1 as a sum of fractions 1/b. b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.*	2.2.4.B Multiply single- and double-digit numbers and divide by single digit numbers, add and subtract fractions with like denominators, and add and subtract decimals.
CC.2.1.4.C.2 Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.3 Understand a fraction a/b with a > 1 as a sum of fractions 1/b. c. 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.	2.2.4.B Multiply single- and double-digit numbers and divide by single digit numbers, add and subtract fractions with like denominators, and add and subtract decimals.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.4.C.2 Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.3 Understand a fraction a/b with a > 1 as a sum of fractions 1/b. d. 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.	2.2.4.B Multiply single- and double-digit numbers and divide by single digit numbers, add and subtract fractions with like denominators, and add and subtract decimals.
CC.2.1.4.C.2 Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. b. Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. *For example, use a visual fraction model to express 3 × (2/5) as 6 × (1/5), recognizing this product as 6/5. (In general, n × (a/b) = (n × a)/b.)*	Intentionally Blank
CC.2.1.4.C.2 Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. c. 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. *For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?*	Intentionally Blank
CC.2.1.4.C.2 Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.3 Understand a fraction a/b with a > 1 as a sum of fractions 1/b. a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	2.2.4.B. Multiply single- and double-digit numbers and divide by single digit numbers, add and subtract fractions with like denominators, and add and subtract decimals.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.4.C.2 Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. a. Understand a fraction a/b as a multiple of 1/b. *For example, use a visual fraction model to represent 5/4 as the product 5 × (1/4), recording the conclusion by the equation 5/4 = 5 × (1/4).*	Intentionally Blank
CC.2.1.4.C.3 Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g. ,19/100).	4.NF.5 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. *For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.*	Intentionally Blank
CC.2.1.4.C.3 Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g. ,19/100).	4.NF.6 Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.*	Intentionally Blank
CC.2.1.4.C.3 Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g. ,19/100).	4.NF.7 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.	Intentionally Blank
CC.2.2.4.A.1 Represent and solve problems involving the four operations.	4.OA.1 Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.	Intentionally Blank
CC.2.2.4.A.1 Represent and solve problems involving the four operations.	4.OA.2 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.	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.2.4.A.1 Represent and solve problems involving the four operations.	4.OA.3 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. 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.	2.1.4.F Understand the concepts of addition and subtraction and their inverse relationships; understand the concepts of multiplication and division; use the four basic operations to solve problems, including word problems and equations.
CC.2.2.4.A.2 Develop and/or apply number theory concepts to find factors and multiples.	4.OA.4 Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	2.1.4.E Apply factors and multiples to represent larger numbers in various ways.
CC.2.2.4.A.4 Generate and analyze patterns using one rule.	4.OA.5 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. *For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.*	2.8.4.C Recognize, describe, extend, create, replicate, and make generalizations for a variety of patterns, sequences, and relationships verbally and numerically.
CC.2.3.4.A.1 Draw lines and angles and identify these in two-dimensional figures.	4.G.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	2.9.4.A Identify, describe, and define 1-, 2-, and 3-dimensional shapes and their related parts; compare 2-dimensional shapes; compare 3-dimensional shapes.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.3.4.A.1 Draw lines and angles and identify these in two-dimensional figures.	4.G.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures	2.10.4.A Identify right angles in geometric figures
CC.2.3.4.A.2 Classify two-dimensional figures by properties of their lines and angles.	4.G.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.	2.9.4.A Identify, describe, and define 1-, 2-, and 3-dimensional shapes and their related parts; compare 2-dimensional shapes; compare 3-dimensional shapes.
CC.2.3.4.A.2 Classify two-dimensional figures by properties of their lines and angles.	4.G.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.	2.10.4.A Identify right angles in geometric figures
CC.2.3.4.A.3 Recognize symmetric shapes and draw lines of symmetry.	4.G.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 matching parts. Identify line-symmetric figures and draw lines of symmetry.	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.4.4.A.1 Solve problems involving measurement and conversions from a larger unit to a smaller unit.	4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb., oz.; l, ml; hr., min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example, know that 1 ft. is 12 times as long as 1 in. Express the length of a 4 ft. snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...*	2.3.4.D Perform basic conversions within the same system to the unit immediately above or below the given unit.
CC.2.4.4.A.1 Solve problems involving measurement and conversions from a larger unit to a smaller unit.	4.MD.2 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. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	2.3.4.D Perform basic conversions within the same system to the unit immediately above or below the given unit.
CC.2.4.4.A.1 Solve problems involving measurement and conversions from a larger unit to a smaller unit.	4.MD.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.*	2.3.4.D Perform basic conversions within the same system to the unit immediately above or below the given unit.
CC.2.4.4.A.2 Translate information from one type of data display to another.	Intentionally Blank	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.4.4.A.4 Represent and interpret data involving fractions using information provided in a line plot	4.MD.4 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.*	2.6.4.B Organize and display data using tables, pictures, tallies, bar graphs, line graphs, or pictographs.
CC.2.4.4.A.6 Measure angles and use properties of adjacent angles to solve problems.	4.MD.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	2.6.4.B Organize and display data using tables, pictures, tallies, bar graphs, line graphs, or pictographs.
CC.2.4.4.A.6 Measure angles and use properties of adjacent angles to solve problems.	4.MD.7 Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	Intentionally Blank
CC.2.4.4.A.6 Measure angles and use properties of adjacent angles to solve problems.	4.MD.5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: a. 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. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles. b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees.	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
	Grade 5	
CC.2.1.5.B.1 Apply place value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	2.1.5.A Apply number patterns to count and compare values of whole numbers, fractions, and decimals.
CC.2.1.5.B.1 Apply place value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	2.1.5.E Develop and apply number theory concepts (e.g., primes, factors, multiples, composites) to represent numbers in various ways.
CC.2.1.5.B.1 Apply place value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	2.1.5.F Understand the concepts of multiplication and division and use the inverse relationships between multiplication and division, to determine unknown quantities in equations
CC.2.1.5.B.1 Apply place value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	2.1.5.A Apply number patterns to count and compare values of whole numbers, fractions, and decimals.
CC.2.1.5.B.1 Apply place value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	2.1.5.E Develop and apply number theory concepts (e.g., primes, factors, multiples, composites) to represent numbers in various ways.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.5.B.1 Apply place value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	2.1.5.F Understand the concepts of multiplication and division and use the inverse relationships between multiplication and division, to determine unknown quantities in equations.
CC.2.1.5.B.1 Apply place value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	5.NBT.3 Read, write, and compare decimals to thousandths. a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).	2.1.5.A Apply number patterns to count and compare values of whole numbers, fractions, and decimals.
CC.2.1.5.B.1 Apply place value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	5.NBT.3 Read, write, and compare decimals to thousandths. a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).	2.1.5.E Develop and apply number theory concepts (e.g., primes, factors, multiples, composites) to represent numbers in various ways.
CC.2.1.5.B.1 Apply place value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	5.NBT.3 Read, write, and compare decimals to thousandths. a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).	2.1.5.F Understand the concepts of multiplication and division and use the inverse relationships between multiplication and division, to determine unknown quantities in equations.
CC.2.1.5.B.1 Apply place value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	5.NBT.3 Read, write, and compare decimals to thousandths. b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.5.B.1 Apply place value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	5.NBT.4 Use place value understanding to round decimals to any place.	2.1.5.A Apply number patterns to count and compare values of whole numbers, fractions, and decimals.
CC.2.1.5.B.1 Apply place value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	5.NBT.4 Use place value understanding to round decimals to any place.	2.1.5.E Develop and apply number theory concepts (e.g., primes, factors, multiples, composites) to represent numbers in various ways.
CC.2.1.5.B.1 Apply place value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	5.NBT.4 Use place value understanding to round decimals to any place.	2.1.5.F Understand the concepts of multiplication and division and use the inverse relationships between multiplication and division, to determine unknown quantities in equations.
CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.	5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	2.1.5.B Use number theory concepts and models to represent or rename whole numbers, fractions, and decimals.
CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.	5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	2.1.5.D Apply place value concepts to order and compare decimals and to express whole numbers and decimals in expanded notation.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.	5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	2.1.5.E Develop and apply number theory concepts (e.g., primes, factors, multiples, composites) to represent numbers in various ways.
CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.	5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	2.1.5.F Understand the concepts of multiplication and division and use the inverse relationships between multiplication and division, to determine unknown quantities
CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.	5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	2.2.5.B Multiply and divide single- and double digit numbers; add and subtract fractions and mixed numbers; add, subtract, multiply and divide decimals
CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.	5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	2.1.5.E Develop and apply number theory concepts (e.g., primes, factors, multiples, composites) to represent numbers in various ways.
CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.	5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	2.1.5.F Understand the concepts of multiplication and division and use the inverse relationships between multiplication and division, to determine unknown quantities in equations
CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.	5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	2.2.5.B Multiply and divide single- and double digit numbers; add and subtract fractions and mixed numbers; add, subtract, multiply and divide decimals.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.	5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	2.1.5.B Use number theory concepts and models to represent or rename whole numbers, fractions, and decimals.
CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.	5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	2.1.5.D Apply place value concepts to order and compare decimals and to express whole numbers and decimals in expanded notation.
CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.	5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	2.1.5.E Develop and apply number theory concepts (e.g., primes, factors, multiples, composites) to represent numbers in various ways.
CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.	5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	2.1.5.F Understand the concepts of multiplication and division and use the inverse relationships between multiplication and division, to determine unknown quantities in equations.
CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.	5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	2.2.5.B Multiply and divide single- and double digit numbers; add and subtract fractions and mixed numbers; add, subtract, multiply and divide decimals

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.5.C.1 Use the understanding of equivalency to add and subtract fractions.	5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)*	2.2.5.B Multiply and divide single-and double digit numbers; add and subtract fractions and mixed numbers; add, subtract, multiply and divide decimals.
CC.2.1.5.C.1 Use the understanding of equivalency to add and subtract fractions.	5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.*	2.2.5.B Multiply and divide single-and double digit numbers; add and subtract fractions and mixed numbers; add, subtract, multiply and divide decimals.
CC.2.1.5.C.2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	5.NF.3 Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. *For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?*	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.5.C.2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	5.NF.6. Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	Intentionally Blank
CC.2.1.5.C.2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	5.NF.5. Interpret multiplication as scaling (resizing), by: a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.5.C.2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	5.NF.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.1 a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3.* b. Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4.* c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, how much chocolate will each person get if 3 people share 1/2 lb. of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins?*	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.5.C.2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	5.NF.4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. a. Interpret the product (a/b) × q as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations a × q ÷ b. For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.) b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	Intentionally Blank
CC.2.2.5.A.1 Interpret and evaluate numerical expressions using order of operations.	5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	2.8.5.A Use the concept of equality to demonstrate understanding of the distributive property.
CC.2.2.5.A.1 Interpret and evaluate numerical expressions using order of operations.	5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	2.8.5.B Select and use strategies, including concrete objects, to solve number sentences (equations and inequalities) and explain the method of solution.
CC.2.2.5.A.1 Interpret and evaluate numerical expressions using order of operations.	5.OA.2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. *For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.*	2.8.5.A Use the concept of equality to demonstrate understanding of the distributive property.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.2.5.A.1 Interpret and evaluate numerical expressions using order of operations.	5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. *For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.*	2.8.5.B Select and use strategies, including concrete objects, to solve number sentences (equations and inequalities) and explain the method of solution.
CC.2.2.5.A.4 Analyze patterns and relationships using two rules.	5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. *For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.*	2.8.5.C Recognize, describe, extend, create, replicate, and form a rule for a variety of patterns, sequences, and relationships verbally, numerically, symbolically, and graphically.
CC.2.3.5.A.1 Graph points in the first quadrant on the coordinate plane and interpret these points when solving real world and mathematical problems.	5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).	2.9.5.C Identify location of points with fractional or decimal coordinates on a number line or on a 2- dimensional coordinate system.
CC.2.3.5.A.1 Graph points in the first quadrant on the coordinate plane and interpret these points when solving real world and mathematical problems.	5.G.2 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.	2.9.5.C Identify location of points with fractional or decimal coordinates on a number line or on a 2- dimensional coordinate system.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.3.5.A.2 Classify two-dimensional figures into categories based on an understanding of their properties.	5.G.4 Classify two-dimensional figures in a hierarchy based on properties.	2.9.5.A Identify, describe, and define 1-, 2-, and 3-dimensional shapes and their related parts, and classify and compare 2- and 3-dimensional shapes on the basis of their properties.
CC.2.3.5.A.2 Classify two-dimensional figures into categories based on an understanding of their properties.	5.G.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.	2.9.5.A Identify, describe, and define 1-, 2-, and 3-dimensional shapes and their related parts, and classify and compare 2- and 3-dimensional shapes on the basis of their properties.
CC.2.4.5.A.1 Solve problems using conversions within a given measurement system.	5.MD.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	2.3.5.A Use concrete objects to demonstrate the meaning of measurement quantities (e.g., perimeter, area, weight, capacity)
CC.2.4.5.A.1 Solve problems using conversions within a given measurement system.	5.MD.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	2.3.5.D Perform basic conversions within a system.
CC.2.4.5.A.1 Solve problems using conversions within a given measurement system.	5.MD.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	2.3.5.C Calculate perimeter and area, and sums and differences of measurements.
CC.2.4.5.A.2 Represent and interpret data using appropriate scale.	Intentionally Blank	Intenionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.4.5.A.4 Solve problems involving computation of fractions using information provided in a line plot.	5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*	2.6.5.A Gather data from surveys and observations from sources outside the classroom or home.
CC.2.4.5.A.4 Solve problems involving computation of fractions using information provided in a line plot.	5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*	2.6.5.B Use pictures, tallies, tables, charts, bar graphs, line graphs, diagrams, and graphs to organize, display, and analyze data.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.4.5.A.6 Apply concepts of volume to solve problems and relate volume to multiplication and to addition.	5.MD5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. b. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems. c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.	Intentionally Blank
CC.2.4.5.A.6 Apply concepts of volume to solve problems and relate volume to multiplication and to addition.	5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement. a. A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.	Intentionally Blank
CC.2.4.5.A.6 Apply concepts of volume to solve problems and relate volume to multiplication and to addition.	5.MD.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft., and improvised units.	Intentionally Blank
	Grade 6	

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.6.D.1 Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*	Intentionally Blank
CC.2.1.6.D.1 Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.2 Understand the concept of a unit rate a/b associated with a ratio a:b with $b \neq 0$, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."1*	Intentionally Blank
CC.2.1.6.D.1 Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.	Intentionally Blank
CC.2.1.6.D.1 Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. b. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.6.D.1 Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.	Intentionally Blank
CC.2.1.6.D.1 Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	Intentionally Blank
CC.2.1.6.E.1 Apply and extend previous understandings of multiplication and division to divide fractions by fractions.	6.NS.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc.) How much chocolate will each person get if 3 people share 1/2 lb. of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?*	2.2.6.B. Add, subtract, multiply, and divide whole numbers, decimals, fractions, and mixed numbers.
CC.2.1.6.E.2 Identify and choose appropriate processes to compute fluently with multi-digit numbers.	6.NS.2 Fluently divide multi-digit numbers using the standard algorithm.	2.2.6.B. Add, subtract, multiply, and divide whole numbers, decimals, fractions, and mixed numbers.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.6.E.2 Identify and choose appropriate processes to compute fluently with multi-digit numbers.	6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	2.2.6.B. Add, subtract, multiply, and divide whole numbers, decimals, fractions, and mixed numbers.
CC.2.1.6.E.3 Develop and/or apply number theory concepts to find common factors and multiples.	6.NS.4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express 36 + 8 as 4 (9 + 2).*	2.1.6.E. Apply number theory concepts to calculate the GCF (Greatest Common Factor) and/or LCM (Least Common Multiple) of two numbers. pply the associative, commutative, distributive and/or identity properties to write equivalent forms of expressions
CC.2.1.6.E.3 Develop and/or apply number theory concepts to find common factors and multiples.	6.NS.4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express 36 + 8 as 4 (9 + 2).	2.1.6.F. Apply the associative, commutative, distributive and/or identity properties to write equivalent forms of expressions.
CC.2.1.6.E.4 Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.6.E.4 Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite.	Intentionally Blank
CC.2.1.6.E.4 Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.	Intentionally Blank
CC.2.1.6.E.4 Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.6.E.4 Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.7 Understand ordering and absolute value of rational numbers. b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write –3 $^0C > –7\ ^0C$ to express the fact that –3 ^0C is warmer than –7 ^0C.*	Intentionally Blank
CC.2.1.6.E.4 Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.7 Understand ordering and absolute value of rational numbers. c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of –30 dollars, write |–30| = 30 to describe the size of the debt in dollars.*	Intentionally Blank
CC.2.1.6.E.4 Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	Intentionally Blank
CC.2.1.6.E.4 Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.7 Understand ordering and absolute value of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *For example, interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right.* d. Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars.*	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.2.6.B.1 Apply and extend previous understandings of arithmetic to algebraic expressions.	6.EE.1 Write and evaluate numerical expressions involving whole-number exponents.	2.8.6.E Use combinations of symbols and numbers to create expressions, equations, and inequalities that model mathematical situations.
CC.2.2.6.B.1 Apply and extend previous understandings of arithmetic to algebraic expressions.	6.EE.2 Write, read, and evaluate expressions in which letters stand for numbers. a. Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as 5 – y.*	2.8.6.E Use combinations of symbols and numbers to create expressions, equations, and inequalities that model mathematical situations.
CC.2.2.6.B.1 Apply and extend previous understandings of arithmetic to algebraic expressions.	6.EE.2 Write, read, and evaluate expressions in which letters stand for numbers. b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.*	2.8.6.E Use combinations of symbols and numbers to create expressions, equations, and inequalities that model mathematical situations.
CC.2.2.6.B.1 Apply and extend previous understandings of arithmetic to algebraic expressions.	6.EE.2 Write, read, and evaluate expressions in which letters stand for numbers. c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas V = s3 and A = 6 s2 to find the volume and surface area of a cube with sides of length s = 1/2.*	2.8.6.E Use combinations of symbols and numbers to create expressions, equations, and inequalities that model mathematical situations.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.2.6.B.1 Apply and extend previous understandings of arithmetic to algebraic expressions.	6.EE.3 Apply the properties of operations to generate equivalent expressions. *For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y.*	2.8.6.A Use the concept of equality to demonstrate understanding of the distributive property
CC.2.2.6.B.1 Apply and extend previous understandings of arithmetic to algebraic expressions.	6.EE.4 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*	Intentionally Blank
CC.2.2.6.B.2 Understand the process of solving a one-variable equation or inequality and apply to real-world and mathematical problems.	6.EE.5 Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	2.8.6.E Use combinations of symbols and numbers to create expressions, equations, and inequalities that model mathematical situations.
CC.2.2.6.B.2 Understand the process of solving a one-variable equation or inequality and apply to real-world and mathematical problems.	6.EE.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	2.8.6.E Use combinations of symbols and numbers to create expressions, equations, and inequalities that model mathematical situations.
CC.2.2.6.B.2 Understand the process of solving a one-variable equation or inequality and apply to real-world and mathematical problems.	6.EE.7 Solve real-world and mathematical problems by writing and solving equations of the form x + p = q and px = q for cases in which p, q and x are all nonnegative rational numbers.	2.8.6.F Interpret the results of solving equations in one variable in the context of the situation that motivated the model.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.2.6.B.2 Understand the process of solving a one-variable equation or inequality and apply to real-world and mathematical problems.	6.EE.8 Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form x > c or x < c have infinitely many solutions; represent solutions of such inequalities on number line diagrams.	Intentionally Blank
CC.2.2.6.B.3 Represent and analyze quantitative relationships between dependent and independent variables.	6.EE.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. *For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.*	Intentionally Blank
CC.2.3.6.A.1 Apply appropriate tools to solve real-world and mathematical problems involving area, surface area, and volume.	6.G.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.	Intentionally Blank
CC.2.3.6.A.1 Apply appropriate tools to solve real-world and mathematical problems involving area, surface area, and volume.	6.G.2 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = l w h and V = b h to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.3.6.A.1 Apply appropriate tools to solve real-world and mathematical problems involving area, surface area, and volume.	6.G.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.	Intentionally Blank
CC.2.3.6.A.1 Apply appropriate tools to solve real-world and mathematical problems involving area, surface area, and volume.	6.G.4 Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.	Intentionally Blank
CC.2.3.6.A.2 Graph points in all four quadrants on the coordinate plane to solve real world and mathematical problems.	Intentionally Blank	Intentionally Blank
CC.2.4.6.B.1 Use a set of numerical data to develop an understanding of and recognize statistical variability.	6.SP.1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.*	Intentionally Blank
CC.2.4.6.B.1 Use a set of numerical data to develop an understanding of and recognize statistical variability.	6.SP.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.	2.6.6.C Select and use, as appropriate, the mean, median, mode, and/or range to describe sets of data.
CC.2.4.6.B.1 Use a set of numerical data to develop an understanding of and recognize statistical variability.	6.SP.3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	2.6.6.C Select and use, as appropriate, the mean, median, mode, and/or range to describe sets of data.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.4.6.B.2 Use numerical data and apply statistical properties to summarize and describe a distribution.	6.SP.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	2.6.6.E Interpret data displayed in a table, histogram, graph, or data summarized by numerical measures.
CC.2.4.6.B.2 Use numerical data and apply statistical properties to summarize and describe a distribution.	6.SP.5 Summarize numerical data sets in relation to their context, such as by: c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.	Intentionally Blank
CC.2.4.6.B.2 Use numerical data and apply statistical properties to summarize and describe a distribution.	6.SP.5 Summarize numerical data sets in relation to their context, such as by: d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.	Intentionally Blank
CC.2.4.6.B.2 Use numerical data and apply statistical properties to summarize and describe a distribution.	6.SP.5 Summarize numerical data sets in relation to their context, such as by: a. Reporting the number of observations. b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.	Intentionally Blank
	Grade 7	

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.7.D.1 Analyze proportional relationships and use them to model and solve real-world and mathematical problems.	7.RP.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour.*	2.1.7.C Use ratio and proportion to model relationships between quantities
CC.2.1.7.D.1 Analyze proportional relationships and use them to model and solve real-world and mathematical problems.	7.RP.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour.*	2.1.7.F Understand the concepts of ratio, proportion, percents, and rates to determine unknown quantities in equations.
CC.2.1.7.D.1 Analyze proportional relationships and use them to model and solve real-world and mathematical problems.	7.RP.2 Recognize and represent proportional relationships between quantities. a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.	2.1.7.C Use ratio and proportion to model relationships between quantities
CC.2.1.7.D.1 Analyze proportional relationships and use them to model and solve real-world and mathematical problems.	7.RP.2 Recognize and represent proportional relationships between quantities. b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	2.1.7.F Understand the concepts of ratio, proportion, percents, and rates to determine unknown quantities in equations.
CC.2.1.7.D.1 Analyze proportional relationships and use them to model and solve real-world and mathematical problems.	7.RP.2 Recognize and represent proportional relationships between quantities. c. Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn.	2.1.7.C Use ratio and proportion to model relationships between quantities

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.7.D.1 Analyze proportional relationships and use them to model and solve real-world and mathematical problems.	7.RP.2 Recognize and represent proportional relationships between quantities. d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.	2.1.7.F. Understand the concepts of ratio, proportion, percents, and rates to determine unknown quantities in equations.
CC.2.1.7.D.1 Analyze proportional relationships and use them to model and solve real-world and mathematical problems.	7.RP.3 Use proportional relationships to solve multistep ratio and percent problems. *Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.*	2.1.7.F. Understand the concepts of ratio, proportion, percents, and rates to determine unknown quantities in equations.
CC.2.1.7.E.1 Apply and extend previous understandings of operations with fractions to operations with rational numbers.	7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. d. Apply properties of operations as strategies to add and subtract rational numbers.	2.2.7.B. Add, subtract, multiply, and divide whole numbers, decimals, fractions, mixed numbers, or integers.
CC.2.1.7.E.1 Apply and extend previous understandings of operations with fractions to operations with rational numbers.	7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers.	2.2.7.B Add, subtract, multiply, and divide whole numbers, decimals, fractions, mixed numbers, or integers.
CC.2.1.7.E.1 Apply and extend previous understandings of operations with fractions to operations with rational numbers.	7.NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. c. Apply properties of operations as strategies to multiply and divide rational numbers. d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.	2.2.7.B. Add, subtract, multiply, and divide whole numbers, decimals, fractions, mixed numbers, or integers.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
Intentionally Blank	7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. a. Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged. b. Understand p + q as the number located a distance |q| from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. c. Understand subtraction of rational numbers as adding the additive inverse, p – q = p + (–q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.	2.2.7.B. Add, subtract, multiply, and divide whole numbers, decimals, fractions, mixed numbers, or integers.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
Intentionally Blank	7.NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then –(p/q) = (–p)/q = p/(–q). Interpret quotients of rational numbers by describing real-world contexts.	2.2.7.B. Add, subtract, multiply, and divide whole numbers, decimals, fractions, mixed numbers, or integers.
CC.2.2.7.B.1 Apply properties of operations to generate equivalent expressions.	7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.2.7.B.3 Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.	7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.*	Intentionally Blank
CC.2.2.7.B.3 Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.	7.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?*	2.8.7.B Evaluate and simplify algebraic expressions and solve and graph linear equations and inequalities. 2.8.7.E. Use combinations of symbols and numbers to create expressions, equations, and inequalities in one variable that model problem situations.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
Intentionally Blank	7.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. b. Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.	2.8.7.B Evaluate and simplify algebraic expressions and solve and graph linear equations and inequalities. 2.8.7.E. Use combinations of symbols and numbers to create expressions, equations, and inequalities in one variable that model problem situations.
Intentionally Blank	7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.*	Intentionally Blank
Intentionally Blank	7.EE.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."*	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.3.7.A.1 Visualize and represent geometric figures and describe the relationships between them.	7.G.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	Intentionally Blank
CC.2.3.7.A.1 Visualize and represent geometric figures and describe the relationships between them.	7.EE.3 Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	Intentionally Blank
Intentionally Blank	7.EE.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	Intentionally Blank
CC.2.3.7.A.3 Solve real-world and mathematical problems involving angle measure, area, surface area, circumference, and volume.	7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	Intentionally Blank
CC.2.3.7.A.3 Solve real-world and mathematical problems involving angle measure, area, surface area, circumference, and volume.	7.G.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	2.3.7.C Use measurement formulas to calculate volume, area, and perimeter and to calculate circumference and area of circles.
CC.2.3.7.A.3 Solve real-world and mathematical problems involving angle measure, area, surface area, circumference, and volume.	7.G.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	2.3.7.B Develop strategies for and use appropriate units to determine lengths, areas, and perimeters of compound shapes.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.4.7.B.1 Draw inferences about populations based on random sampling concepts.	7.SP.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.	2.6.7.A Identify different ways of selecting a sample and choosing an appropriate sampling technique for a given situation.
CC.2.4.7.B.1 Draw inferences about populations based on random sampling concepts.	7.SP.2 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.*	2.6.7.A Identify different ways of selecting a sample and choosing an appropriate sampling technique for a given situation.
CC.2.4.7.B.2 Draw informal comparative inferences about two populations.	7.SP.3 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. *For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.*	2.6.7.D Use measures of central tendency and spread to compare data sets.
CC.2.4.7.B.2 Draw informal comparative inferences about two populations.	7.SP.4 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.	2.6.7.D Use measures of central tendency and spread to compare data sets.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.4.7.B.2 Draw informal comparative inferences about two populations.	7.SP.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	2.7.7.E Find and interpret the experimental or theoretical probability of an outcome of a simple event.
CC.2.4.7.B.3 Investigate chance processes and develop, use, and evaluate probability models.	7.SP.6 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. *For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.*	2.7.7.A Predict the outcome of a grade- level appropriate probability experiment
CC.2.4.7.B.3 Investigate chance processes and develop, use, and evaluate probability models.	7.SP.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.	2.7.7.C Express the probability of a compound or complimentary event as a fraction, decimal, or percent.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.4.7.B.3 Investigate chance processes and develop, use, and evaluate probability models.	7.SP.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event.	2.7.7.D. List the possible outcomes for two or more independent events and compare the outcomes.
CC.2.4.7.B.3 Investigate chance processes and develop, use, and evaluate probability models.	7.SP.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. c. Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
Intentionally Blank	7.SP.7. Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected. b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?	Intentionally Blank
	Grade 8	
CC.2.1.8.E.1 Distinguish between rational and irrational numbers using their properties.	8.NS.1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.	2.2.8.D Estimate the values of irrational numbers and the results from calculations with basic operations of fractions and percents and check the reasonableness of those estimates.
CC.2.1.8.E.4 Estimate irrational numbers by comparing them to rational numbers.	8.NS.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π2). *For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*	2.2.8.D Estimate the values of irrational numbers and the results from calculations with basic operations of fractions and percents and check the reasonableness of those estimates.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.2.8.B.1 Apply concepts of radicals and integer exponents to generate equivalent expressions.	8.EE.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example, 32 × 3–5 = 3–3 = 1/33 = 1/27.*	2.1.8.B Represent and use numbers in equivalent forms (e.g., integers, fractions, decimals, percents, exponents, scientific notation, square roots, absolute values).
CC.2.2.8.B.1 Apply concepts of radicals and integer exponents to generate equivalent expressions.	8.EE.2 Use square root and cube root symbols to represent solutions to equations of the form x2 = p and x3 = p, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that √2 is irrational.	2.1.8.F Understand the concepts of exponents and roots and use the inverse relationships between exponents and roots to determine unknown quantities in equations.
CC.2.2.8.B.1 Apply concepts of radicals and integer exponents to generate equivalent expressions.	8.EE.3 Use numbers expressed in the form of a single digit times a whole-number power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as 3 times 108 and the population of the world as 7 times 109, and determine that the world population is more than 20 times larger.*	2.1.8.D Extend place value concepts to represent large numbers using exponential, scientific, and calculator notation.
CC.2.2.8.B.1 Apply concepts of radicals and integer exponents to generate equivalent expressions.	8.EE.4 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific	2.1.8.D Extend place value concepts to represent large numbers using exponential, scientific, and calculator notation.
CC.2.2.8.B.2 Understand the connections between proportional relationships, lines, and linear equations.	8.EE.5 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. *For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.*	2.11.8.B Describe the concept of unit rate, ratio, and slope in the context of rate of change.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.2.8.B.2 Understand the connections between proportional relationships, lines, and linear equations.	8.EE.6 Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.	2.11.8.B Describe the concept of unit rate, ratio, and slope in the context of rate of change.
CC.2.2.8.B.3 Analyze and solve linear equations and pairs of simultaneous linear equations.	8.EE.7 Solve linear equations in one variable. a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).	2.8.8.B Evaluate and simplify algebraic expressions and solve and graph linear equations and inequalities.
CC.2.2.8.B.3 Analyze and solve linear equations and pairs of simultaneous linear equations.	8.EE.7 Solve linear equations in one variable. b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	2.8.8.B Evaluate and simplify algebraic expressions and solve and graph linear equations and inequalities.
CC.2.2.8.B.3 Analyze and solve linear equations and pairs of simultaneous linear equations.	8.EE.8 Analyze and solve pairs of simultaneous linear equations. a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.	Intentionally Blank
CC.2.2.8.B.3 Analyze and solve linear equations and pairs of simultaneous linear equations.	8.EE.8 Analyze and solve pairs of simultaneous linear equations. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. *For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.*	Intentionally Blank

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.2.8.B.3 Analyze and solve linear equations and pairs of simultaneous linear equations.	8.EE.8 Analyze and solve pairs of simultaneous linear equations. c. Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.*	2.9.8.C Plot ordered pairs and 2-dimensional shapes that satisfy given conditions on a 2-dimensional coordinate system.
CC.2.1.8.C.1 Define, evaluate, and compare functions.	8.F.1 Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.	2.8.8.D Create a table or graph from a functional rule.
CC.2.1.8.C.1 Define, evaluate, and compare functions.	8.F.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.*	Intentionally Blank
CC.2.1.8.C.1 Define, evaluate, and compare functions.	8.F.3 Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *For example, the function A = s2 giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.*	2.8.8.B Evaluate and simplify algebraic expressions and solve and graph linear equations and inequalities.
CC.2.1.8.C.2 Use concepts of functions to model relationships between quantities.	8.F.4 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	2.8.8.E Use combinations of symbols and numbers to create expressions and equations in one or two variables, and inequalities in one variable that model problem situations.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.1.8.C.2 Use concepts of functions to model relationships between quantities.	8.F.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	2.8.8.F Interpret the results of solving equations in one or two variables and inequalities in one variable in the context of the situation that motivated the model.
CC.2.3.8.A.1 Understand and apply congruence and similarity using various tools.	8.G.1 Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines.	2.9.8.A Name, describe and apply geometric relations for 1- dimensional shapes and 2-dimensional shapes and 3- dimensional solids.
CC.2.3.8.A.1 Understand and apply congruence and similarity using various tools.	8.G.1 Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines.	2.9.8.B Predict and describe the result of a translation (slide), rotation (turn), or reflection (flip) of a 3- dimensional shape.
CC.2.3.8.A.1 Understand and apply congruence and similarity using various tools.	8.G.2 Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.	2.9.8.A Name, describe and apply geometric relations for 1- dimensional shapes and 2-dimensional shapes and 3- dimensional solids.
CC.2.3.8.A.1 Understand and apply congruence and similarity using various tools.	8.G.2 Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.	2.9.8.B Predict and describe the result of a translation (slide), rotation (turn), or reflection (flip) of a 3- dimensional shape.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.3.8.A.1 Understand and apply congruence and similarity using various tools.	8.G.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	2.9.8.C Plot ordered pairs and 2-dimensional shapes that satisfy given conditions on a 2-dimensional coordinate system.
CC.2.3.8.A.1 Understand and apply congruence and similarity using various tools.	8.G.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	2.9.8.A Name, describe and apply geometric relations for 1- dimensional shapes and 2-dimensional shapes and 3- dimensional solids.
CC.2.3.8.A.1 Understand and apply congruence and similarity using various tools.	8.G.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	2.9.8.B Predict and describe the result of a translation (slide), rotation (turn), or reflection (flip) of a 3- dimensional shape.
CC.2.3.8.A.1 Understand and apply congruence and similarity using various tools.	8.G.5 Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. *For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.*	Intentionally Blank
CC.2.3.8.A.2 Understand and apply the Pythagorean Theorem to solve problems.	8.G.6 Explain a proof of the Pythagorean Theorem and its converse.	2.10.8.A Compute measures of sides and angles using proportions, the Pythagorean Theorem, and right triangle relationships.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.3.8.A.2 Understand and apply the Pythagorean Theorem to solve problems.	8.G.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	2.10.8.A Compute measures of sides and angles using proportions, the Pythagorean Theorem, and right triangle relationships.
CC.2.3.8.A.2 Understand and apply the Pythagorean Theorem to solve problems.	8.G.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	2.10.8.A Compute measures of sides and angles using proportions, the Pythagorean Theorem, and right triangle relationships.
CC.2.3.8.A.3 Apply the concepts of volume of cylinders, cones, and spheres to solve real-world and mathematical problems.	8.G.9 Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	2.9.8.A Name, describe and apply geometric relations for 1- dimensional shapes and 2-dimensional shapes and 3- dimensional solids.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.3.8.A.3 Apply the concepts of volume of cylinders, cones, and spheres to solve real-world and mathematical problems.	8.G.9 Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	2.9.8.B Predict and describe the result of a translation (slide), rotation (turn), or reflection (flip) of a 3- dimensional shape.
CC.2.4.8.B.1 Analyze and/or interpret bivariate data displayed in multiple representations.	8.SP.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	2.6.8.B Organize and display one-variable data using appropriate data display, such as stem and- leaf and box-and-whisker plots, and two variable data with scatterplots.
CC.2.4.8.B.1 Analyze and/or interpret bivariate data displayed in multiple representations.	8.SP.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	2.6.8.C Calculate quartiles for one-variable data and describe the correlation coefficient for two-variable data displayed in a scatterplot.

PA Common Core - Common Core - PA Academic Standards Crosswalk Grades K-8		
PA Common Core Standard	**Common Core State Standard**	**PA Academic Standards**
CC.2.4.8.B.1 Analyze and/or interpret bivariate data displayed in multiple representations.	8.SP.2 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	2.6.8.B Organize and display one-variable data using appropriate data display, such as stem and- leaf and box-and-whisker plots, and two variable data with scatterplots.
CC.2.4.8.B.1 Analyze and/or interpret bivariate data displayed in multiple representations.	8.SP.2 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	2.6.8.C Calculate quartiles for one-variable data and describe the correlation coefficient for two-variable data displayed in a scatterplot.
CC.2.4.8.B.1 Analyze and/or interpret bivariate data displayed in multiple representations.	8.SP.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.*	Intentionally Blank
CC.2.4.8.B.2 Understand that patterns of association can be seen in bivariate data utilizing frequencies.	8.SP.4. Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?*	Intentionally Blank