Operations and Algebraic Thinking

GRADE	CONTENT	SKILLS	LESSON CORRELATION
Essential Question: How can simple math operations be used to explain God's creative power?		Big Idea: Addition and subtraction help us to understand God's desire to create and recreate.	
K	Addition	**K.OAT.1 Understand addition as putting together and adding to (K.OA.1,2)** • Solve problems using addition 3.0 Items include ALL of the following: • Solve problems using addition 2.0 items include at least one of the following: • Solve problems using addition • Solve problems by counting to tell the number of objects • Solve problems by being able to represent the number of objects as a written numeral **K.OAT.2 Represent and solve addition word problems within 10; fluently add within 5 (K.OA.3,4,5)** • Solve problems by representing addition word problems within 10 • Solve problems by solving addition word problems within 10 • Solve problems by fluently adding within 5 3.0 Items include ALL of the following: • Solve problems by representing addition word problems within 10 • Solve problems by solving addition word problems within 10 • Solve problems by fluently adding within 5 2.0 items include at least one of the following: • Solve problems by representing addition word problems within 10 • Solve problems by solving addition word problems within 10 • Solve problems by fluently adding within 5 • Solve problems by representing addition within 10 • Solve problems by solving addition within 10	5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8
	Subtraction	**K.OAT.3 Understand subtraction as taking apart and taking from (K.OA.1,2)** • Solve problems using subtraction 3.0 Items include ALL of the following: • Solve problems using subtraction 2.0 items include at least one of the following: • Solve problems using subtraction • Solve problems by counting to tell the number of objects • Solve problems by being able to represent counted objects as a written numeral **K.OAT.4 Represent and solve subtraction word problems within 10; fluently subtract within 5 (K.OA.3,4,5)** • Solve problems by representing subtraction word problems within 10 • Solve problems by solving subtraction word problems within 10 • Solve problems by fluently subtracting within 5 3.0 Items include ALL of the following: • Solve problems by representing subtraction word problems within 10 • Solve problems by solving subtraction word problems within 10 • Solve problems by fluently subtracting within 5 2.0 items include at least one of the following: • Solve problems by representing subtraction word problems within 10 • Solve problems by solving subtraction word problems within 10 • Solve problems by fluently subtracting within 5 • Solve problems by representing subtraction within 10 • Solve problems by solving subtraction within 10	7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7
1	Addition/Subtraction	**1.OAT.1 Understand, represent, compare, and apply addition and subtraction properties to word problems within 20; fluently add and subtract within 10 (1.OA.1,2,3,4,5,6); add up to three whole numbers within 20 (1.OA.2); add two-digit and one-digit numbers with regrouping within 100 using models or drawings (1.NBT.4)** • Solve problems by applying addition properties to word problems within 20 • Solve problems by applying subtraction properties to word problems within 20 • Solve problems by fluently adding within 10 • Solve problems by fluently subtracting within 10 • Solve problems by adding up to three whole numbers within 20 • Solve problems by adding two-digit and one-digit numbers with regrouping within 100 using models or drawings 3.0 Items include ALL of the following: • Solve problems by applying addition properties to word problems within 20 • Solve problems by applying subtraction properties to word problems within 20 • Solve problems by fluently adding within 10 • Solve problems by fluently subtracting within 10	1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 8.1, 8.2, 8.3, 8.4, 8.8, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 10.5, 11.1, 11.2, 11.3, 11.5

		• Solve problems by adding up to three whole numbers within 20 • Solve problems by adding two-digit and one-digit numbers with regrouping within 100 using models or drawings 2.0 items include at least one of the following: • Solve problems by applying addition properties to word problems within 20 • Solve problems by applying subtraction properties to word problems within 20 • Solve problems by fluently adding within 10 • Solve problems by fluently subtracting within 10 • Solve problems by adding up to three whole numbers within 20 • Solve problems by adding two-digit and one-digit numbers with regrouping within 100 using models or drawings • Solve problems by applying addition properties to word problems within 10 • Solve problems by applying subtraction properties to word problems within 10 • Solve problems by adding within 10 • Solving problems by subtracting within 10 • Solve problems by adding up to two whole numbers within 20 • Solve problems by adding two-digit and one-digit numbers without regrouping **1.OAT.2 Work with addition and subtraction equations including unknowns (1.OA.7,8)** • Solve problems using addition equations including unknowns • Solve problems using subtraction equations including unknowns 3.0 Items include ALL of the following: • Solve problems using addition equations including unknowns • Solve problems using subtraction equations including unknowns 2.0 items include at least one of the following: • Solve problems using addition equations including unknowns • Solve problems using subtraction equations including unknowns • Solve problems by adding up to two whole numbers within 20 • Solve problems by subtracting up to two whole numbers within 20	1.1, 1.2, 1.3, 1.5, 1.9, 2.2, 2.7, 2.9, 3.1, 3.2, 3.3, 3.4, 3.5, 3.8, 4.1, 4.2, 4.3, 5.2, 5.3, 5.4, 5.6
2	**Addition/Subtraction**	**2.OAT.1 Understand, represent, compare, and apply addition and subtraction properties within 100 to solve one- and two-step word problems (2.OA.1) (2.NBT.5); add up to four 2-digit numbers (2.NBT.6)** • Solve problems by applying addition within 100 to solve one-step word problems • Solve problems by applying subtraction within 100 to solve one-step word problems • Solve problems by applying addition within 100 to solve two-step word problems • Solve problems by applying subtraction within 100 to solve two-step word problems • Solve problems by adding up to four 2-digit numbers 3.0 Items include ALL of the following: • Solve problems by applying addition within 100 to solve one-step word problems • Solve problems by applying subtraction within 100 to solve one-step word problems • Solve problems by applying addition within 100 to solve two-step word problems • Solve problems by applying subtraction within 100 to solve two-step word problems • Solve problems by adding up to four 2-digit numbers 2.0 items include at least one of the following: • Solve problems by applying addition within 100 to solve one-step word problems • Solve problems by applying subtraction within 100 to solve one-step word problems • Solve problems by applying addition within 100 to solve two-step word problems • Solve problems by applying subtraction within 100 to solve two-step word problems • Solve problems by adding up to four 2-digit numbers • Solve problems by applying addition within 100 • Solve problems by applying subtraction within 100 • Solve problems by adding two 2-digit numbers **2.OAT.2 Memorize and fluently add and subtract within 20 (2.OA.2)** • Memorize addition facts within 20 • Memorize subtraction facts within 20 • Solve problems by fluently adding within 20 • Solve problems by fluently subtracting within 20 3.0 Items include ALL of the following: • Memorize addition facts within 20 • Memorize subtraction facts within 20 • Solve problems by fluently adding within 20 • Solve problems by fluently subtracting within 20 2.0 items include at least one of the following: • Memorize addition facts within 20 • Memorize subtraction facts within 20 • Solve problems by fluently adding within 20	2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 9.1, 9.7, 10.1, 10.5, 10.6, 14.1, 14.2, 14.3, 14.4, 14.5, 14.6, 14.7 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9

		• Solve problems by fluently subtracting within 20 • Memorize addition facts within 10 • Memorize subtraction facts within 10 • Solve problems by fluently adding within 10 • Solve problems by fluently subtracting within 10	
	Multiplication	**2.OAT.3 Determine if a group of objects within 20 represents an odd or even number (2.OA.3)** • Solve problems by determining if a group of objects within 20 represents an odd or even number 3.0 Items include ALL of the following: • Solve problems by determining if a group of objects within 20 represents an odd or even number 2.0 items include at least one of the following: • Solve problems by determining if a group of objects within 20 represents an odd or even number • Solve problems by determining odd and even numbered objects **2.OAT.4 Write an equation to represent the total as a sum of equal addends with up to 5 groups of 5 objects (2.OA.3,4)** • Solve problems by writing an equation to represent the total as a sum of equal addends with up to 5 groups of 5 objects 3.0 Items include ALL of the following: • Solve problems by writing an equation to represent the total as a sum of equal addends with up to 5 groups of 5 objects 2.0 items include at least one of the following: • Solve problems by writing an equation to represent the total as a sum of equal addends with up to 5 groups of 5 objects • Solve problems by completing an addition equation with up to five objects	1.1, 1.2 1.1, 1.2, 1.3, 1.4, 1.5
Assessments		Math Interviews; Checklists; Models and Drawings; Written Assessments	
Essential Question: How do mathematical operations connect us to an infinite God?		**Big Idea:** Solving problems through mathematical operations reveals numerical patterns that demonstrate God's unchanging order and constancy.	
3	**Multiplication/ Division**	**3.OAT.1 Understand the meaning and relationship of multiplication and division (3.OA.1,2,6)** • Solve problems by applying the concept of the inverse relationship of multiplication and division 3.0 Items include ALL of the following: • Solve problems by applying the concept of the inverse relationship of multiplication and division 2.0 items include at least one of the following: • Solve problems by applying the concept of the inverse relationship of multiplication and division • Solve problems by applying the concept of simple multiplication **3.OAT.2 Memorize and fluently multiply and divide using the multiplication facts through 10 (3.OA.3,7); mentally multiply by 10 and 100 (3.NBT.3)** • Memorize multiplication facts through 10 • Solve problems fluently using multiplication and division facts through 10 • Solve problems by mentally multiplying by 10 and 100 3.0 Items include ALL of the following: • Memorize multiplication facts through 10 • Solve problems fluently using multiplication and division facts through 10 • Solve problems by mentally multiplying by 10 and 100 2.0 items include at least one of the following: • Memorize multiplication facts through 10 • Solve problems fluently using multiplication and division facts through 10 • Solve problems by mentally multiplying by 10 and 100 • Memorize multiplication facts through 5 • Solve problems by fluently using multiplication facts through 5 **3.OAT.3 Represent and determine the unknown whole number in an equation (3.OA.4)** • Solve problems by representing the unknown whole number in an equation • Solve problems by determining the unknown whole number in an equation 3.0 Items include ALL of the following: • Solve problems by representing the unknown whole number in an equation • Solve problems by determining the unknown whole number in an equation 2.0 items include at least one of the following: • Solve problems by representing the unknown whole number in an equation • Solve problems by determining the unknown whole number in an equation • Solve problems by writing an equation to represent the total as a sum of addends **3.OAT.4 Apply properties of operations (commutative, associative, distributive) to multiply and divide (3.OA.5)** • Solve problems by using the commutative property to multiply • Solve problems by using the associative property to multiply • Solve problems by using the distributive property to multiply • Solve problems by using the commutative property to divide	1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 2.1, 2.2, 2.3, 2.4, 2.6, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.1, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 5.1, 5.2, 5.3, 5.4, 9.1, 9.2, 9.3 2.1, 2.2, 2.3, 2.4, 2.6, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 5.2, 5.4 1.4, 2.4, 2.5, 3.6, 3.7, 3.8, 3.9, 4.7, 9.3

		• Solve problems by using the associative property to divide • Solve problems by using the distributive property to divide 3.0 Items include ALL of the following: • Solve problems by using the commutative property to multiply • Solve problems by using the associative property to multiply • Solve problems by using the distributive property to multiply • Solve problems by using the commutative property to divide • Solve problems by using the associative property to divide • Solve problems by using the distributive property to divide 2.0 items include at least one of the following: • Solve problems by using the commutative property to multiply • Solve problems by using the associative property to multiply • Solve problems by using the distributive property to multiply • Solve problems by using the commutative property to divide • Solve problems by using the associative property to divide • Solve problems by using the distributive property to divide • Solve problems by using the commutative property to add and subtract • Solve problems by using the associative property to add and subtract	
	Problem Solving	**3.OAT.5 Solve two-step word problems using the four basic operations and estimate to check (3.OA.8)** • Solve two-step word problems by using any of the four basic operations • Solve two-step word problems using estimation to check answers 3.0 Items include ALL of the following: • Solve two-step word problems by using any of the four basic operations • Solve two-step word problems using estimation to check answers 2.0 items include at least one of the following: • Solve two-step word problems by using any of the four basic operations • Solve two-step word problems using estimation to check answers • Solve a one-step word problem using addition or subtraction • Solve a one-step word problem using estimation to check answers **3.OAT.6 Begin to understand and apply the standard order of operations (3.OA.8)** • Begin to solve problems by using the standard order of operations 3.0 Items include ALL of the following: • Begin to solve problems by using the standard order of operations 2.0 items include at least one of the following: • Begin to solve problems by using the standard order of operations • Solve problems involving two operations	5.4, 7.4, 7.5, 8.11, 9.4, 9.5 9.5
	Patterns	**3.OAT.7 Identify arithmetic patterns using properties of operations (3.OA.9)** • Solve problems by identifying arithmetic patterns using properties of operations 3.0 Items include ALL of the following: • Solve problems by identifying arithmetic patterns using properties of operations 2.0 items include at least one of the following: • Solve problems by identifying arithmetic patterns using properties of operations • Solve problems of addition using a property of operation • Solve problems of subtraction using a property of operation	2.1, 2.2, 2.3, 2.4, 5.1, 5.2
4	**Multiplication**	**4.OAT.1 Memorize and fluently multiply using the multiplication facts through 12** • Memorize multiplication facts through 12 • Solve problems fluently using multiplication facts through 12 3.0 Items include ALL of the following: • Memorize multiplication facts through 12 • Solve problems fluently using multiplication facts through 12 2.0 items include at least one of the following: • Memorize multiplication facts through 12 • Solve problems fluently using multiplication facts through 12 • Solve problems by fluently using multiplication facts through 10	Additional Topic: Multiply by 11 or 12. Also see *Big Ideas Math: Modeling Real Life, Grade 3*, © 2019 in Lessons 1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, and 3.9.
	Problem Solving	**4.OAT.2 Solve multi-step word problems including remainder interpretation and estimate to check; create equations with a letter for the unknown (4.OA.1,2,3)** • Solve multi-step word problems that include remainder interpretation • Solve multi-step word problems and use estimation to check • Solve problems by creating equations with a letter for the unknown 3.0 Items include ALL of the following: • Solve multi-step word problems that include remainder interpretation • Solve multi-step word problems and use estimation to check • Solve problems by creating equations with a letter for the unknown	2.5, 3.1,3.3, 3.10, 4.2, 4.8, 5.2, 5.9, 12.1, 12.2, 12.3, 12.4

		2.0 items include at least one of the following: • Solve multi-step word problems that include remainder interpretation • Solve multi-step word problems and use estimation to check • Solve problems by creating equations with a letter for the unknown • Solve two-step word problems using addition, subtraction, and/or multiplication • Solve problems by determining the unknown whole number in an equation	
	Factors	**4.OAT.3 Find all factor pairs for a whole number within 100; identify whole numbers as prime or composite (4.OA.4)** • Solve problems by finding all factor pairs for a whole number up to 100 • Solve problems by identifying whole numbers as prime or composite 3.0 Items include ALL of the following: • Solve problems by finding all factor pairs for a whole number up to 100 • Solve problems by identifying whole numbers as prime or composite 2.0 items include at least one of the following: • Solve problems by finding all factor pairs for a whole number up to 100 • Solve problems by identifying whole numbers as prime or composite • Solve problems by finding all factor pairs for a whole number up to 50 **4.OAT.4 Understand the basic concepts of least common multiple (LCM) and greatest common factor (GCF)** • Solve problems by using basic concepts of least common multiple (LCM) • Solve problems by using basic concepts of greatest common factor (GCF) 3.0 Items include ALL of the following: • Solve problems by using basic concepts of least common multiple (LCM) • Solve problems by using basic concepts of greatest common factor (GCF) 2.0 items include at least one of the following: • Solve problems by using basic concepts of least common multiple (LCM) • Solve problems by using basic concepts of greatest common factor (GCF) • Solve problems by skip counting numbers	6.1, 6.2, 6.3, 6.4 This standard is addressed in *Big Ideas Math: Modeling Real Life, Grade 6,* © 2019 in Lessons 1.4 and 1.5.
	Patterns	**4.OAT.5 Analyze and generate number and shape patterns (4.OA.5)** • Solve problems by analyzing and generating number patterns • Solve problems by analyzing and generating shape patterns 3.0 Items include ALL of the following: • Solve problems by analyzing and generating number patterns • Solve problems by analyzing and generating shape patterns 2.0 items include at least one of the following: • Solve problems by analyzing and generating number patterns • Solve problems by analyzing and generating shape patterns • Solve problems by identifying number and shape patterns	6.5, 6.6
5	**Numerical Expressions**	**5.OAT.1 Write and interpret simple numerical expressions using parentheses, brackets, and braces (5.OA.1,2)** • Solve problems by writing and interpreting simple numerical expressions using parentheses • Solve problems by writing and interpreting simple numerical expressions using parentheses and brackets • Solve problems by writing and interpreting simple numerical expressions using parentheses, brackets, and braces 3.0 Items include ALL of the following: • Solve problems by writing and interpreting simple numerical expressions using parentheses • Solve problems by writing and interpreting simple numerical expressions using parentheses and brackets • Solve problems by writing and interpreting simple numerical expressions using parentheses, brackets, and braces 2.0 items include at least one of the following: • Solve problems by writing and interpreting simple numerical expressions using parentheses • Solve problems by writing and interpreting simple numerical expressions using parentheses and brackets • Solve problems by writing and interpreting simple numerical expressions using parentheses, brackets, and braces • Solve problems using order of operations	2.1, 2.2, 2.3, 2.4
	Factors	**5.OAT.2 Determine the least common multiple (LCM) and greatest common factor (GCF) of two numbers** • Solve problems by determining the least common multiple (LCM) of two numbers • Solve problems by determining the greatest common factor (GCF) of two numbers 3.0 Items include ALL of the following: • Solve problems by determining the least common multiple (LCM) of two numbers • Solve problems by determining the greatest common factor (GCF) of two numbers 2.0 items include at least one of the following: • Solve problems by determining the least common multiple (LCM) of two numbers • Solve problems by determining the greatest common factor (GCF) of two numbers • Solve problems by finding factor pairs for whole numbers within 100	This standard is addressed in *Big Ideas Math: Modeling Real Life, Grade 6,* © 2019 in Lessons 1.4, 1.5

	Patterns	**5.OAT.3 Generate, identify the relationship, and graph ordered pairs using numerical patterns with two given rules (5.OA.3)** • Solve problems by generating ordered pairs using numerical patterns with two given rules • Solve problems by identifying the relationship of ordered pairs using numerical patterns with two given rules • Solve problems by graphing ordered pairs using numerical patterns with two given rules 3.0 Items include ALL of the following: • Solve problems by generating ordered pairs using numerical patterns with two given rules • Solve problems by identifying the relationship of ordered pairs using numerical patterns with two given rules • Solve problems by graphing ordered pairs using numerical patterns with two given rules 2.0 items include at least one of the following: • Solve problems by generating ordered pairs using numerical patterns with two given rules • Solve problems by identifying the relationship of ordered pairs using numerical patterns with two given rules • Solve problems by graphing ordered pairs using numerical patterns with two given rules • Solve problems by identifying number patterns	12.6, 12.7
Assessments		Written Assessments; Journal Entries; Class Discussions; Oral Reports; Visual and Virtual Models	
Essential Question: What do mathematical principles reveal about God's ordered universe?		**Big Idea:** The consistency of mathematical order of operations and principles demonstrate the orderliness and precision of God's creation and universe.	
6	**Expressions and Equations**	**6.OAT.1 Apply basic operations to algebraic expressions; solve and explain one-variable equations and inequalities; identify parts of an expression using mathematical terms (6.EE.1,2,3,4,5,6,7,8)** • Solve problems that apply basic operations (add, subtract, multiply, divide) to algebraic expressions • Solve and explain problems with one-variable equations • Solve and explain problems with one-variable inequalities • Solve problems by identifying parts of an algebraic expression 3.0 items include ALL of the following: • Solve problems that apply basic operations (add, subtract, multiply, divide) to algebraic expressions • Solve and explain problems with one-variable equations • Solve and explain problems with one-variable inequalities • Solve problems by identifying parts of an algebraic expression 2.0 items include at least one of the following: • Solve problems that apply basic operations (add, subtract, multiply, divide) to algebraic expressions • Solve and explain problems with one-variable equations • Solve and explain problems with one-variable inequalities • Solve problems by identifying parts of an algebraic expression • Solve problems by applying the rule of inverse relationships to solve for variables **6.OAT.2 Represent, graph, and analyze quantitative relationships between dependent and independent variables (6.EE.9)** • Solve problems by displaying and graphing quantitative relationships between dependent and independent variables • Solve problems by analyzing quantitative relationships between dependent and independent variables 3.0 items include ALL of the following: • Solve problems by displaying and graphing quantitative relationships between dependent and independent variables • Solve problems by analyzing quantitative relationships between dependent and independent variables 2.0 items include at least one of the following: • Solve problems by displaying and graphing quantitative relationships between dependent and independent variables • Solve problems by analyzing quantitative relationships between dependent and independent variables • Graph an ordered pair on the first quadrant of a coordinate plane	5.1, 5.2, 5.3, 5.4, 5.5, 6.1, 6.2, 6.3, 6.4, 8.7, 8.8 6.4
7	**Expressions/ Equations/ Inequalities**	**7.OAT.1 Use properties of operations to generate equivalent expressions (7.EE.1,2)** • Solve problems using properties of operations to generate equivalent expressions 3.0 items include ALL of the following: • Solve problems using properties of operations to generate equivalent expressions 2.0 items include at least one of the following: • Solve problems using properties of operations to generate equivalent expressions • Solve problems by applying basic operations to algebraic expressions • Solve problems containing two or more variables **7.OAT.2 Solve real-life and mathematical problems using numerical and algebraic expressions and Equations (7.EE.3,4)** • Solve problems using numerical expressions and equations • Solve problems using algebraic expressions and equations 3.0 items include ALL of the following: • Solve problems using numerical expressions and equations • Solve problems using algebraic expressions and equations 2.0 items include at least one of the following: • Solve problems using numerical expressions and equations	3.1, 3.2, 3.3, 3.4, 6.4, 6.5, 6.6, 9.2 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 7.1, 7.2, 7.3, 7.4

		• Solve problems using algebraic expressions and equations • Solve problems by representing and graphing quantitative relationship between dependent and independent variables **7.OAT.3 Represent, graph, analyze, and generalize patterns, ratios, and inequalities using symbolic rules** • Solve problems using symbolic rules to illustrate, graph, analyze, and generalize patterns • Solve problems using symbolic rules to illustrate, graph, analyze, and generalize ratios • Solve problems using symbolic rules to illustrate, graph, analyze, and generalize inequalities 3.0 items include ALL of the following: • Solve problems using symbolic rules to illustrate, graph, analyze, and generalize patterns • Solve problems using symbolic rules to illustrate, graph, analyze, and generalize ratios • Solve problems using symbolic rules to illustrate, graph, analyze, and generalize inequalities 2.0 items include at least one of the following: • Solve problems using symbolic rules to illustrate, graph, analyze, and generalize patterns • Solve problems using symbolic rules to illustrate, graph, analyze, and generalize ratios • Solve problems using symbolic rules to illustrate, graph, analyze, and generalize inequalities • Solve problems by applying identified rules to continue a pattern • Solve problems by analyzing and interpreting inequalities on a coordinate plane • Solve problems by graphing an inequality on a number line or coordinate plane	3.1, 3.2, 3.3, 3.4, 4.4, 4.5, 4.6, 4.7, 4.8, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6
8	**Expressions/ Equations/ Inequalities**	**8.OAT.1 Work with radicals and integer exponents (8.E.E.1,2,3,4)** • Solve problems containing radicals • Solve problems containing integer exponents 3.0 items include ALL of the following: • Solve problems containing radicals • Solve problems containing integer exponents 2.0 items include at least one of the following: • Solve problems containing radicals • Solve problems containing integer exponents • Solve problems using prime factorization **8.OAT.2 Understand the connections between proportional relationships, lines, slope, and linear equations; graph linear equations (8.EE.5,6)** • Solve problems by graphing linear equations • Solve problems by interpreting lines, slope, and intercepts on a graph 3.0 items include ALL of the following: • Solve problems by graphing linear equations • Solve problems by interpreting lines, slope, and intercepts on a graph 2.0 items include at least one of the following: • Solve problems by graphing linear equations • Solve problems by interpreting lines, slope, and intercepts on a graph • Solve problems by writing and graphing equations in slope-intercept form • Solve problems by writing and graphing equations from standard form • Solve problems by calculating slope from two points on a line **8.OAT.3 Analyze and solve linear equations and pairs of simultaneous linear equations (8.EE.7,8)** • Solve problems containing simultaneous linear equations (systems of equations) by solving for two variables using graphing, substituting, and elimination 3.0 items include ALL of the following: • Solve problems containing simultaneous linear equations (systems of equations) by solving for two variables using graphing, substitution, and elimination 2.0 items include at least one of the following: • Solve problems containing simultaneous linear equations (systems of equations) by solving for two variables using graphing, substitution, and elimination • Solve problems containing systems of equations by graphing • Solve problems containing systems of equations by substitution • Solve problems containing systems of equations by elimination	8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 9.1, 9.2, 9.3 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 7.2, 7.3, 7.5 1.1, 1.2, 1.3, 1.4, 5.1, 5.2, 5.3, 5.4
	Functions	**8.OAT.4 Define, evaluate, compare, and use functions to model relationships between quantities 8.F.1,2,3,4,5)** • Solve problems by using functions to model relationships between quantities 3.0 items include ALL of the following: • Solve problems by using functions to model relationships between quantities 2.0 items include at least one of the following: • Solve problems by using functions to model relationships between quantities • Solve problems by identifying domain and range of a function • Solve problems by identifying continuous and discrete domains • Solve problems by comparing linear and nonlinear functions	7.1, 7.2, 7.3, 7.4, 7.5
Assessments		Open-ended Projects and Problems; Written Assessments; Journal Entries; Class Discussions; Oral Reports; Visual and	

	Virtual Models