6th Grade Math

Course Syllabus

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1. INTRODUCTION

Primary Resource: Ohio Department of Education Academic Standards and Learning Targets and Youngstown City Schools Pacing Guides

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The following document provides a detailed layout of how a 6th grade math class can be taught. The pacing guide table provides information on each lesson, when a lesson should be taught, and the length of time each lesson will take.

2. PACING GUIDE

The intent of this course pacing guide is to provide a practical guide that educators can follow for a yearlong 6th grade math class. The pacing guide is based on Ohio Content Standards and Learning Targets. The content pacing guide provides the Domain from which the content comes. The percentage of questions from each Domain that will appear on the Ohio AIR State Test is also included as well as the Ohio Content Standard(s) and the Ohio Learning Target that each lesson covers. The title of each lesson, the order in which each lesson should be taught, and the amount of time each lesson should take is also given. Finally, a column is provided to allow for teacher notes regarding the effectiveness of changes a lesson might need, offering each teacher the opportunity to edit the document to fit their individual classroom needs.

2.1. PACING GUIDE KEYS

Table 1 provides a Key so teachers can gain a better understanding of the pacing guide that follow.

Table 1: Pacing Guide Format

Font Style	Description
Green	Critical Areas of Focus on State Testing
Black	Minor Areas of Focus on State Testing
Bold	Standard(s) covered
Underline	Identifying Areas of Critical and Minor Areas

Table 2 provides a Key so teachers understand what percentage of questions are on the state test, what domain each unit falls into, as well as what standard is in each lesson and if it is a major or minor area for state testing.

Table 2: Pacing Guide Key

Percentage of Questions on State Test	Unit & Domain	Major Areas	Minor Areas
20% - 25%	***Unit 1*** The Number System	6.NS.1 / 6.EE.1	6.NS.4 / 6.NS.2 / 6.NS.3
24% - 33%	***Unit 2*** Proportional Relationships	6.RP.1 / 6.RP.2 / 6.RP.3.c / 6.RP.3.a / 6.RP.3.b / 6.RP.3.d	
20% - 25%	***Unit 3*** The Number System	6.NS.5 / 6.NS.6.a / 6.NS.6.c / 6.NS.7.b / 6.NS.7.c / 6.NS.7.d	
31% - 44%	***Unit 4*** Expressions & Equations	6.NS.6.c / 6.EE.1 / 6.EE.2.a / 6.EE.2.b 6.EE.2.c / 6.EE.3 / 6.EE.4 / 6.EE.6	6.NS.3
20% - 25%	***Unit 5*** The Number System / Expressions & Equations	6.NS.5 / 6.NS.7.a / 6.NS.7.c / 6.EE.2.a / 6.EE.2.b / 6.EE.2.c / 6.EE.1 / 6.EE.5 / 6.EE.8 / 6.RP.3.b / 6.EE.4 / 6.EE.9 / 6.EE.3 / 6.EE.6 / 6.EE.7 / 6.NS.6.c / 6.NS.8 / 6.NS.6.b	6.G.3
20% - 25%	***Unit 6*** Statistics & Probability		6.SP.1 / 6.SP.5.a / 6.SP.5.b / 6.SP.2 / 6.SP.5.c / 6.SP.5.d / 6.SP.3 / 6.SP.4
20% - 25%	***Unit 7*** Proportional Relationships / Geometry	6.RP.1 / 6.RP.3.b / 6.RP.3.d / 6.EE.9	6.G.2 / 6.G.1 / 6.G.4

2.2. SEMESTER 1

Domain	Standards	Learning Target	Lesson	Pacing	Teacher Notes
Unit 1: The Number System 40 Days	**6.NS.4** **6.NS.1** **6.NS.2** **6.NS.3** **6.EE.1**		**Pre-Test**	1 Day	
The Number System 40 Days Minor Area	**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).	• I can find the greatest common factor (GCF) of two whole numbers. • I can find the least common multiple (LCM) of two whole numbers less than or equal to 12. • I can express the sum of two whole numbers using the distributive property.	**Domain 2: Lesson 1 -** Least Common Multiple	3 Days	
The Number System 40 Days Minor Area	**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).	• I can find the greatest common factor (GCF) of two whole numbers. • I can find the least common multiple (LCM) of two whole numbers less than or equal to 12. • I can express the sum of two whole numbers using the distributive property.	**Domain 2: Lesson 2 -** Greatest Common Factor	3 Days	
The Number System 40 Days	**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	• I know that a fraction can represent a quotient and I can find that quotient using models and equations.	**Domain 2: Lesson 3 -** Fraction Representation	6 Days	

Critical Area	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 ½?				
The Number System 40 Days Minor Area	**6. NS-2.** Fluently divide multi-digit numbers using the standard algorithm.	• I can EASILY (quickly) and ACCURATELY divide multi digit numbers.	**Domain 2: Lesson 4 -** Mixed Numbers & Improper Fractions	5 Days	
The Number System 40 Days Minor Area	**6. NS-2.** Fluently divide multi-digit numbers using the standard algorithm.	• I can EASILY (quickly) and ACCURATELY divide multi digit numbers.	**Domain 2: Lesson 5 -** Mixed Number Addition & Subtraction	5 Days	
The Number System 40 Days Minor Area	**6. NS-2.** Fluently divide multi-digit numbers using the standard algorithm.	• I can EASILY (quickly) and ACCURATELY divide multi digit numbers.	**Domain 2: Lesson 6 -** Fraction Multiplication & Division	5 Days	
The Number System 40 Days Minor Area	**6. NS-3.** Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	• I can EASILY (quickly?) and ACCURATELY add, subtract, multiply, and divide multi-digit decimal numbers.	**Domain 2: Lesson 7 -** Decimal Addition & Subtraction	5 Days	

The Number System 40 Days <u>Critical Area</u>	**6. NS-3.** Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. **6. EE-1.** Write and evaluate numerical expressions involving whole-number exponents.	• I can EASILY (quickly?) and ACCURATELY add, subtract, multiply, and divide multi-digit decimal numbers. • I can simplify numeric expressions with exponents.	**Domain 2: Lesson 8 -** Decimal Multiplication & Division	5 Days	
Unit 1: The Number System 40 Days	**6.NS.4** **6.NS.1** **6.NS.2** **6.NS.3** **6.EE.1**		**Post-Test & Summative Assessment**	2 Days	
Unit 2: Proportional Relationship 24 Days	**6.RP.1** **6.RP.2** **6.RP.3.c** **6.RP.3.a** **6.RP.3.b** **6.RP.3.d**		**Pre-Test**	1 Day	
Proportional Relationship 24 Days <u>Critical Area</u>	**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."	• I can explain how a ratio is comparing two quantities.	**Domain 1: Lesson 9 -** Equivalent Ratios and Rates	5 Days	
Proportional Relationship 24 Days <u>Critical Area</u>	**6. RP-2.** Understand the concept of a unit rate a/b associated with a ratio a: b with b ≠ 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."	• I can explain the concept of a unit rate and how it relates to a ratio. • I can change a ratio to a unit rate.	**Domain 1: Lesson 10 -** Unit Rates	5 Days	
Proportional Relationship	**6. RP-3.c.** Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams,	• I can solve problems involving percent's when a part is given and the percent.	**Domain 1: Lesson 11 -** Simple Percent	5 Days	

24 Days <u>Critical Area</u>	double number line diagrams, or equations. - 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.		Conversions		
Proportional Relationship 24 Days <u>Critical Area</u>	**6. RP-3.a.** 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. - 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. **6. RP-3.b.** 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. - 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? **6. RP-3.d.** 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. - Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	• I can make a table of equivalent fractions. • I can fill in the missing values from a table of equivalent ratios. • I can plot pairs of numbers (from ratios) on a coordinate plane. • I can solve problems involving rates like unit pricing and constant speed. • I can convert units of measurement using ratios.	**Domain 1: Lesson 12 -** Problem Solving with Equivalent Ratios and Rates	6 Days	
Unit 2: Proportional Relationship 24 Days	**6.RP.1** **6.RP.2** **6.RP.3.c** **6.RP.3.a** **6.RP.3.b** **6.RP.3.d**		**Post-Test & Summative Assessment**	2 Days	

Unit 3: The Number System 8 Days	**6.NS.5** **6.NS.6.a** **6.NS.6.c** **6.NS.7.b** **6.NS.7.c** **6.NS.7.d**		**Pre-Test**	1 Day	
The Number System 8 Days <u>Critical Area</u>	**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. **6. NS-6.a.** 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. - 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. **6. NS-6.c.** 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. - 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.	• I can explain how positive and negative numbers relate to real world examples and the meaning of zero in each case. • I can explain how each rational number has an opposite value. • I can locate a rational number on the number line. • I can plot an ordered pair of rational numbers on the coordinate plane.	**Domain 2: Lesson 13 -** Negative Numbers & Number Lines	3 Days	
The Number System 8 Days	**6. NS-7.b.** Understand ordering and absolute value of rational numbers. - Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write –3o C > –7o C to express the fact that –3o C is warmer than –7o C.	• I can explain the meaning of ordering rational numbers in a real world situation. • I can explain how the absolute value of a number relates to its	**Domain 2: Lesson 14 -** Absolute Value		

Critical Area	**6. NS-7.c.** Understand ordering and absolute value of rational numbers. - 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. **6. NS-7.d.** Understand ordering and absolute value of rational numbers. - 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.	distance from zero. • I can explain how the absolute value of a number is used in real world situations to show magnitude. • I can compare how the absolute value of a number relates to value of the number on the number line.		2 Days	
Unit 3: The Number System 8 Days	**6.NS.5** **6.NS.6.a** **6.NS.6.c** **6.NS.7.b** **6.NS.7.c** **6.NS.7.d**		**Post-Test & Summative Assessment**	2 Days	
Unit 4: Expressions & Equations 24 Days	**6.NS.3** **6.EE.1** **6.EE.2.a** **6.EE.2.b** **6.EE.2.c** **6.NS.6.c** **6.EE.3** **6.EE.4** **6.EE.6**		**Pre-Test**	1 Day	
Expressions & Equations 24 Days Minor Area	**6. NS-3.** Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	• I can EASILY (quickly?) and ACCURATELY add, subtract, multiply, and divide multi-digit decimal numbers.	**Domain 3: Lesson 15 -** Number Properties	2 Days	

Expressions & Equations 24 Days <u>Critical Area</u>	**6. EE-1.** Write and evaluate numerical expressions involving whole-number exponents.	• I can simplify number expressions with exponents.	**Domain 3: Lesson 16 -** Squares & Cubes	2 Days	
Expressions & Equations 24 Days <u>Critical Area</u>	**6. EE-2.a.** 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. **6. EE-2.b.** Write, read, and evaluate expressions in which letters stand for numbers. - 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	• I can translate a written mathematical expression into a symbolic expression. • I can identify the parts of an expression that mean sum, term, product, factor, quotient, and coefficient. • I can view a "chunk" of the expression as a single "thing".	**Domain 3: Lesson 17 -** Picture Algebra & Equations	2 Days	
Expressions & Equations 24 Days <u>Critical Area</u>	**6. EE-2.c.** Write, read, and evaluate expressions in which letters stand for numbers. - 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 = 6s2 to find the volume and surface area of a cube with sides of length s = 1/2.	• I can substitute numbers for variables in a number sentence and simplify. • I can solve a real-world problem given the formula. • I can apply the order of operations to simplify a number sentence with no parentheses.	**Domain 3: Lesson 18 -** Patterns & One-Step Expressions	2 Days	
Expressions & Equations 24 Days <u>Critical Area</u>	**6. NS-6.c.** 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. - Find and position integers and other rational numbers on a horizontal or	• I can plot an ordered pair of rational numbers on the coordinate plane.	**Domain 3: Lesson 19 -** Point Plotting n First Quadrant	2 Days	

	vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.				
Expressions & Equations 24 Days <u>Critical Area</u>	**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.	• I can apply the properties of operations to make equivalent expressions.	**Domain 3: Lesson 20 -** Expression Evaluation Using Integers	1 Day	
Expressions & Equations 24 Days <u>Critical Area</u>	**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.	• I can apply the properties of operations to make equivalent expressions.	**Domain 3: Lesson 21 -** Distributive Property	2 Days	
Expressions & Equations 24 Days <u>Critical Area</u>	**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. - 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. **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.	• I can plot an ordered pair of rational numbers on the coordinate plane. • I can apply the properties of operations to make equivalent expressions.	**Domain 3: Lesson 22 -** One Quadrant Graphs & One-Step Expressions	2 Days	

Expressions & Equations 24 Days <u>Critical Area</u>	**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. **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.	• I can identify and explain when two expressions are equivalent. • I can write an expression with variables to represent a real-world problem. • I understand that a variable can represent an unknown number or set of numbers.	**Domain 3: Lesson 23 -** Variable Expression & Simplification	2 Days	
Expressions & Equations 24 Days <u>Critical Area</u>	**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. **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.	• I can identify and explain when two expressions are equivalent. • I can write an expression with variables to represent a real-world problem. • I understand that a variable can represent an unknown number or set of numbers.	**Domain 3: Lesson 24 -** Expression Evaluation Using Fractions & Decimals	2 Days	
Expressions & Equations 24 Days <u>Critical Area</u>	**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. **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.	• I can identify and explain when two expressions are equivalent. • I can write an expression with variables to represent a real-world problem. • I understand that a variable can represent an unknown number or set of numbers.	**Domain 3: Lesson 25 -** Expression Evaluation with Multiple Variables	2 Days	
Unit 4: Expressions & Equations	**6.NS.3** **6.NS.6.c** **6.EE.1**		**Post-Test & Summative**		

24 Days	**6.EE.2.a** **6.EE.2.b** **6.EE.2.c** **6.EE.3** **6.EE.4** **6.EE.6**		**Assessment**	2 Days	

2.3. SEMESTER 2

Domain	Standards	Learning Target	Lesson	Pacing	Teacher Notes
Unit 5: Number System / Expressions & Equations 24 Days	**6.NS.5** **6.NS.7.a** **6.NS.7.c** **6.EE.2.a** **6.EE.2.b** **6.EE.2.c** **6.EE.1** **6.EE.5** **6.EE.8** **6.RP.3.b** **6.EE.4** **6.EE.9** **6.EE.3** **6.EE.6** **6.EE.7** **6.NS.6.c** **6.NS.8** **6.NS.6.b** **6.G.3**		**Pre-Test**	1 Day	
Number System / Expressions & Equations 24 Days <u>Critical Area</u>	**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. **6. NS-7.a.** Understand ordering and absolute value of rational numbers. - 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	I can explain how positive and negative numbers relate to real world examples and the meaning of zero in each case. I can translate a written mathematical expression into a symbolic expression.	**Domain 2 & 3: Lesson 26 -** Pan Balances and One-Step Equations	3 Days	

	right. I can compare two rational numbers on a number line and in an inequality. Explain in words and demonstrate on a number line what -3 > -7 means. Write an inequality comparing the two numbers shown on the number line. **6. NS-7.c.** Understand ordering and absolute value of rational numbers. - 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. **6. EE-2.a.** Write, read, and evaluate expressions in which letters stand for numbers. - 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.				
Number System / Expressions & Equations 24 Days <u>Critical Area</u>	**6. EE-2.b.** 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, and 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. **6. EE-2.c.** Write, read, and evaluate expressions in which letters stand for numbers. - 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 = 6s2 to find the volume and surface area of a cube with sides of length s = ½.	I can identify the parts of an expression that mean sum, term, product, factor, quotient, and coefficient. I can view a "chunk" of the expression as a single "thing". I can substitute numbers for variables in a number sentence and simplify. I can solve a real-world problem given the formula. I can apply the order of operations to simplify a number sentence with no parentheses. I can simplify number expressions with exponents.	**Domain 2 & 3: Lesson 27 -** Solving One-Step Linear Equations	3 Days	

	6. EE-1. Write and evaluate numerical expressions involving whole-number exponents				
Number System / Expressions & Equations 24 Days <u>Critical Area</u>	**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. **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.	I understand that solving an equation or inequality means to find the values that make it true. I can determine whether a value makes an equation/inequality true or false. I can write an inequality to represent a condition in a real-world situation. I can identify when an inequality has an infinitely many solutions. I can graph solution sets of an inequality on a number line.	**Domain 2 & 3: Lesson 28 -** One-Step Linear Inequalities	3 Days	
Number System / Expressions & Equations 24 Days <u>Critical Area</u>	**6. RP-3.b.** 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. - 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? **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. **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	I can solve problems involving rates like unit pricing and constant speed. I can identify and explain when two expressions are equivalent. I can explain the difference between independent and dependent variables. I can write an expression from a real-world problem that relates independent and dependent quantities. I can explain the relationship between dependent and independent variables using graphs and tables.	**Domain 2 & 3: Lesson 29 -** Patterns and One-Step Equations	3 Days	

	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.				
Number System / Expressions & Equations 24 Days <u>Critical Area</u>	**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. **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. **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.	I can apply the properties of operations to make equivalent expressions. I can write an expression with variables to represent a real-world problem. I understand that a variable can represent an unknown number or set of numbers. I can solve real-world problems by writing and solving equations involving non negative rational numbers.	**Domain 2 & 3: Lesson 30 -** Problem Solving with One-Step Equations	3 Days	
Number System / Expressions & Equations 24 Days <u>Critical Area</u>	**6. NS-6.c.** 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. - 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. **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.	I can locate a rational number on the number line. I can plot an ordered pair of rational numbers on the coordinate plane. I can use the coordinate plane to solve real-world problems. I can find the vertical or horizontal distance between two points on the coordinate plane.	**Domain 2 & 3: Lesson 31 -** Point Pointing in Four Quadrants	3 Days	

Number System / Expressions & Equations 24 Days <u>Critical Area</u>	**6. NS-6.b.** 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. - 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. **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.	I can explain how the signs of any ordered pair change in each quadrant of the coordinate graph. I can explain how changing the sign of the numbers in an ordered pair causes it to reflect on one or both axes. I can draw polygons in the coordinate plane given coordinates for the vertices. I can find the vertical or horizontal distance of a side of the polygon. I can apply these strategies to solve real-world problems.	**Domain 2 & 3: Lesson 32 -** Four Quadrant Graphs and One-Step Equations	3 Days	
Unit 5: Number System / Expressions & Equations 24 Days	**6.NS.5** **6.NS.7.a** **6.NS.7.c** **6.EE.2.a** **6.EE.2.b** **6.EE.2.c** **6.EE.1** **6.EE.5** **6.EE.8** **6.RP.3.b** **6.EE.4** **6.EE.9** **6.EE.3** **6.EE.6** **6.EE.7** **6.NS.6.c** **6.NS.8** **6.NS.6.b** **6.G.3**		**Post-Test & Summative Assessment**	2 Days	
Unit 6: Statistics &	**6.SP.1** **6.SP.5.a**				

Probability 24 Days <u>Minor Area</u>	**6.SP.5.b** **6.SP.2** **6.SP.5.c** **6.SP.5.d** **6.SP.3** **6.SP.4**		**Pre-Test**	1 Day	
Statistics & Probability 24 Days <u>Minor Area</u>	**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.	I can explain what type of questions can be answered using statistics.	**Domain 4:** **Lesson 33 -** Displays of Categorical Data	4 Days	
Statistics & Probability 24 Days <u>Minor Area</u>	**6. SP-5.a.** Summarize numerical data sets in relation to their context. - Reporting the number of observations. **6. SP-5.b.** Summarize numerical data sets in relation to their context. - Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.	I can report the number of observations from a data set. I can explain how the statistical investigation was measured and the units of measurement used.	**Domain 4:** **Lesson 34 -** Displays of Numerical Data	4 Days	
Statistics & Probability 24 Days <u>Minor Area</u>	**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. **6. SP-5.c.** Summarize numerical data sets in relation to their context. - 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. **6. SP-5.d.** Summarize numerical data sets in relation to their context. - Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were	I can explain that a set of data has a distribution. I can describe the center, spread, and shape of a distribution. I can calculate the measures of center and measures of variability. I can explain the patterns and any striking deviations being described by the measures of center and measures of variability. I can explain why a particular measure of center or measure of variability may be used based on the context of the data gathered.	**Domain 4:** **Lesson 35 -** Measures of Central Tendency	4 Days	

	gathered.				
Statistics & Probability 24 Days <u>Minor Area</u>	**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.	I can explain the difference between the measure of center and the measure variation of a distribution.	**Domain 4: Lesson 36 -** Mean Absolute Deviation	5 Days	
Statistics & Probability 24 Days <u>Minor Area</u>	**6. SP-4.** Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	I can create a dot plot, histogram, and a box plot.	**Domain 4: Lesson 37 -** Box and Whisker Plots	4 Days	
Unit 6: Statistics & Probability 24 Days	**6.SP.1** **6.SP.5.a** **6.SP.5.b** **6.SP.2** **6.SP.5.c** **6.SP.5.d** **6.SP.3** **6.SP.4**		**Post Test & Summative Assessment**	2 Days	
Unit 7: Proportional Relationship / Geometry 16 Days	**6.RP.1** **6.RP.3.b** **6.RP.3.d** **6.EE.9** **6.G.2** **6.G.1** **6.G.4**		**Pre-Test**	1 Day	
Proportional Relationship / Geometry 16 Days	**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	I can explain how a ratio is comparing two quantities. I can solve problems involving rates like unit pricing and constant speed. I can convert units of measurement using ratios.	**Domain 1 & 5: Lesson 38 -** One-Step Unit Conversions		

Critical Area	three votes." **6. RP-3.b.** 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. - 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? **6. RP-3.d.** 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. - Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. **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	I can explain the difference between independent and dependent variables. I can write an expression from a real-world problem that relates an independent and dependent quantities. I can explain the relationship between dependent and independent variables using graphs and tables.		3 Days	
Proportional Relationship / Geometry 16 Days Minor Area	**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.	I can find the volume of a right rectangular prism using unit cubes. I can calculate the volume of the right rectangular prism. I can explain the relationship between the formula of a right rectangular prism and the number of unit cubes it holds.	**Domain 1 & 5: Lesson 39 -** Area, Volume, and Surface Area	4 Days	

Proportional Relationship / Geometry 16 Days <u>Minor Area</u>	**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.	I can find the area of any triangle. I can find the area of other polygons by dividing them into triangles and/or rectangles. I can use techniques to find areas in real-world problems.	**Domain 1 & 5: Lesson 40 -** Perimeter and Area of Triangles and Quadrilaterals	3 Days	
Proportional Relationship / Geometry - 16 Days <u>Minor Area</u>	**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. **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	I can find the volume of a right rectangular prism using unit cubes. I can calculate the volume of the right rectangular prism. I can explain the relationship between the formula of a right rectangular prism and the number of unit cubes it holds. I can represent 3-dimensional figures with nets. I can use nets to find the surface areas of 3-dimensional figures. I can apply these strategies to solve real-world problems.	**Domain 1 & 5: Lesson 41 -** Volume and Surface Area of Right Prisms	3 Days	
Unit 7: Proportional Relationship / Geometry - 16 Days	**6.RP.1** **6.RP.3.b** **6.RP.3.d** **6.EE.9** **6.G.2** **6.G.1** **6.G.4**		**Post-Test & Summative Assessment**	2 Days	