WA-NEE Community Schools

Grade Level: 6 Subject: Math

Topic #: 1 Use Positive Rational Numbers		Duration: Quarter 1 August-September		
Standard(s)	**Envision Lesson**	**Objective**	**Vocabulary**	**Materials**
6.C.2 Compute with positive fractions and positive decimals fluently using a standard algorithmic approach) **(Tested in 5th Grade)**	1-1 Frequently Add, Subtract, and Multiply Decimals	SWBAT • Add and subtract decimals with precision. • Multiply decimals. • Add, subtract, and multiply decimals to solve real-world problems.		• 99math multiplication
6.C.1 Divide multi-digit whole numbers fluently using a standard algorithmic approach. **(Tested in 5th Grade)**	1-2 Fluently Divide Whole Numbers and Decimals	SWBAT • Use place-value structure to divide whole numbers and decimals. • Divide whole numbers and decimals to solve real-world problems.		• 99math division • Edulastic: Decimal Computation
6.C.2 Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. **(Tested in 5th Grade)** 6.NS.4 Solve real-world problems with positive fractions and decimals by using one or two operations. (E)	1-3 Multiply Fractions	SWBAT • Use models to multiply fractions. • Multiply the numerators and then the denominators to find the product of two fractions. • Multiply mixed numbers.		• Groups: p. 28
6.C.2 Compute with positive fractions and positive decimals fluently using a standard algorithmic approach.	3- Act Mathematical Modeling	SWBAT • Use mathematical modeling to represent a		•

(Tested in 5th Grade)	Lesson (Supplement)	problem situation and to propose a solution. • Test and verify the appropr iateness of their math models. • Explain why the results from their mathematical models may not align exactly to the problem situation.		
6.C.2 Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. **(Tested in 5th Grade)** 6.NS.4 Solve real-world problems with positive fractions and decimals by using one or two operations. (E)	1-4 Understand Division with Fractions	SWBAT • Use models to divide with fractions. • Use equations to divide with fractions.	• reciprocal	• Groups p. 38
6.C.2 Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. **(Tested in 5th Grade)** 6.NS.4 Solve real-world problems with positive fractions and decimals by using one or two operations. (E)	1-5 Divide Fractions by Fractions	SWBAT • Use models to divide fractions by fractions. • Use an algorithm to divide fractions by fractions.		• Groups p. 44

6.C.2 Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. **(Tested in 5th Grade)** 6.NS.4 Solve real-world problems with positive fractions and decimals by using one or two operations. (E)	1-6 Divide Mixed Numbers	SWBAT • Divide with mixed numbers. • Estimate the quotient of mixed numbers.		• Edulastic: Compute Decimals & Fractions
6.C.2 Compute with positive fractions and positive decimals fluently using a standard algorithmic approach. **(Tested in 5th Grade)** 6.NS.4 Solve real-world problems with positive fractions and decimals by using one or two operations. (E)	1-7 Solve Problems with Rational Numbers	SWBAT • Solve multistep problems with fractions and decimals.		• Groups p. 56 • Topic 1 Test: Edulastic

Topic #: 2 Integers and Rational Numbers		**Duration: Quarter 1 September-October**		
Standard(s)	**Envision Lesson**	**Objective**	**Vocabulary**	**Materials**
6.NS.1 Use positive and negative numbers to represent and compare quantities in real-world contexts,	2-1 Understand Integers	SWBAT • Identify opposites of integers.	• integers • opposites	• 2-1: Math XL: Practice & Problem Solving

explaining the meaning of 0 in each situation. (E) 6.NS.2 Explain how opposite signs of numbers indicate locations on opposite sides of 0 on the number line; identify the opposite of the opposite of a number. 6.NS.3 Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts.		• Compare and order integers. • Use integers to represent real-world quantities and explain the meaning of 0 in each context.		**Small Group:** Worksheet: Integer Word Problems • Card Sort
6.NS.3 Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts. 6.RP.1 Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator. (E)	2-2 Represent Rational Numbers on the Number Line	SWBAT • Plot rational numbers on a number line. • Compare and order rational numbers. • Use rational numbers to represent real-world quantities. • Convert between fractions, decimals, and percents.	• rational number	• Quizizz 1. Compare & order rational numbers on a number line. 2. Ordering rational numbers. • 2.2; Math XL: Practice & Problem Solving Small Group:
6.NS.3 Compare and order rational numbers and plot them on a number line. Write, interpret, and explain	2-3 Absolute Values of	SWBAT • Use absolute value to represent	• absolute value	• Blooket Live

statements of order for rational numbers in real-world contexts.	Rational Numbers	a number's distance from 0. • Interpret absolute value in real-world situations.		• Edulastic: Absolute Value and Ordering Integers and Rational Numbers Small Group: Page 87
6.AF.5 Solve real-world and other mathematical problems by graphing points with rational number coordinates on a coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. (E)	2-4 Represent Rational Numbers on the Coordinate Plane	SWBAT • Identify and graph points with rational coordinates on the coordinate plane. • Reflect points with rational coordinates across both axes.	• coordinate plane • ordered pair • origin • quadrant • *x*- and *y*-axes	• XL 2.4 • Performance Task (Pg. 88) • Cuethink: Feeding Mack's Animals Small Group: Page 94
6.NS.3 Compare and order rational numbers and plot them on a number line. Write, interpret, and explain statements of order for rational numbers in real-world contexts.	3-Act Mathematical Modeling: The Ultimate Throw	SWBAT • Use mathematical modeling to represent a problem situation and to propose a situation. • Test and verify the appropriateness of their math models. • Explain why the results from their mathematical models may not align		• Small Group:

		exactly with the problem situation.		
6.NS.2 Explain how opposite signs of numbers indicate locations on opposite sides of 0 on the number line; identify the opposite of the opposite of a number. 6.AF.5 Solve real-world and other mathematical problems by graphing points with rational number coordinates on a coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. (E)	2-5 Find Distances on the Coordinate Plane	SWBAT • Use absolute value to find the distance between two points that lie on the same horizontal or vertical line on a coordinate plane. • Solve real-world and mathematical problems involving distances on the coordinate plane.		• Solve and Discuss It • XL 2.5 • Partner Task: Problem Solving - Distance Small Group: Page 104
6.AF.5 Solve real-world and other mathematical problems by graphing points with rational number coordinates on a coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. (E)	2-6 Represent Polygons on the Coordinate Plane	SWBAT • Find side lengths of polygons on the coordinate plane. • Find the perimeter of polygons on the coordinate plane.		• Partner Task: Problem Solving - Distance • XL 2.6 Small Group: Page 110

Topic #: 3 Numeric and Algebraic Expressions Duration: Quarter 2 October-November				
Standard(s)	**Envision Lesson**	**Objective**	**Vocabulary**	**Materials**

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6.NS.8 Evaluate positive rational numbers with whole number exponents.	3-1 Understand and Represent Exponents	SWBAT • Write expressions using whole-number exponents to represent real-world and mathematical problems. • Evaluate expressions with whole-number exponents.	• base • evaluate • exponent • power	• Quizizz: Exponents • XL 3.1 Small Group: Pg. 128: 34, 35, 37, 38, 39
6.NS.6 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 from1 to 100, with a common factor as a multiple of a sum of two whole numbers with no common factor.	3-2 Find Greatest Common Factor and Least Common Multiple	SWBAT • Find the prime factorization of a whole number. • Find the greatest common factor(GCF) and the least common multiple (LCM) of two whole numbers. • Use the GCF and the Distributive Property to add. • Use the GCF and the LCM to solve problems.	• composite number • factor tree • greatest common factor (GCF) • least common multiple (LCM) • prime factorization • prime number	• Factor Trees • Ladder Method • XL 3.2 • Edulastic: LCM and GCF Small Group: Page 135: 37,38, 39, 41, 42
6.NS.8 Evaluate positive rational numbers with whole number exponents. 6.NS.5 Apply the order of operations and properties of operations (identity, inverse, commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property) to evaluate	3-3 Write and Evaluate Numerical Expressions	SWBAT • Evaluate expressions using the order of operations. • Insert grouping symbols in a numerical expression to affect the value of the expression.	• numerical expression	• PEMDAS: Sequence Sort • Mr. Neusbaum online game • Quizizz

numerical expressions with nonnegative rational numbers, including those using grouping symbols, such as parentheses, and involving whole number exponents. (E)				Small Group: Pg. 144
Checkpoint 1				
6.AF.1 Define and use multiple variables when writing expressions to represent real-world and other mathematical problems, and evaluate them for given values. (E)	3-4 Write Algebraic Expressions	SWBAT • Write an algebraic expression to model a pattern. • Write an algebraic expression from a word phrase. • Use precise mathematical language when identifying parts of an expression.	• algebraic expression • coefficient • term • variable	• PowerPoint • XL 3.4 Small Group: Page 150
6.AF.1 Define and use multiple variables when writing expressions to represent real-world and other mathematical problems, and evaluate them for given values. (E)	3-5 Evaluate Algebraic Expressions	SWBAT • Evaluate algebraic expressions, including those with whole numbers, decimals, and fractions.	• substitution	• XL 3.5 • Quizizz Expressions vocabulary / Using substitution to evaluate expressions Small Group: Pg. 156
6.AF.1 Define and use multiple variables when writing expressions to represent real-world and other mathematical	3-Act Mathematical Modeling	SWBAT • Use mathematical modeling to represent a		•

problems, and evaluate them for given values. (E) 6.AF.3 Solve equations of the form x + p = q, x − p = q, px = q, and xp = q fluently for cases in which p, q and x are all nonnegative rational numbers. Represent real-world problems using equations of these forms and solve such problems. (E)	Lesson (Supplement)	problem situation and to propose a solution. • Test and verify the appropr iateness of their math models. • Explain why the results fro m theirmathematical model s may not alignexactly to th e problem situation.		Small Group:
6.AF.1 Define and use multiple variables when writing expressions to represent real-world and other mathematical problems, and evaluate them for given values. (E) 6.NS.7 Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions and to justify whether two linear expressions are equivalent when the two expressions name the same number regardless of which value is substituted into them.	3-6 Generate Equivalent Expressions	SWBAT • Write equivalent algebraic expressions. • Identify equivalent algebraic expressions. • Justify whether two expressions are equivalent.	• equivalent expressions	• XL 3.6 • Small Group: Pg. 166 25-27, 28, 34, 35
6.NS.7 Apply the properties of operations (e.g., identity, inverse, commutative, associative, distributive properties) to create equivalent linear expressions and to justify whether two linear expressions are equivalent when the two expressions name the same	3-7 Simplify Algebraic Expressions	SWBAT • Use properties of operations to simplify algebraic expressions by combining like terms.	• like terms • simplify	• XL 3.7 • Quizizz: 6th Grade – Simplifying Expressions

number regardless of which value is substituted into them.				Small Group: Pg. 172 27-29, 33, 35

Topic #: 4 Represent and Solve Equations and Inequalities Duration: Quarter 2/3 November-January				
Standard(s)	**Envision Lesson**	**Objective**	**Vocabulary**	**Materials**
6.AF.2 Demonstrate 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. (E)	4-1 Understand Equations and Solutions	SWBAT • Identify equations and variables. • Use substitution to find solutions to equations.	• equation • solution of an equation	• Tile Math Small Group: Hands on Equations Activity
6.AF.3 Solve equations of the form x + p = q, x − p = q, px = q, and xp = q fluently for cases in which p, q and x are all nonnegative rational numbers. Represent real-world problems using equations of these forms and solve such problems. (E)	4-2 Apply Properties of Equality	SWBAT • Use the properties of equality to keep both sides of an equation equal. • Identify which properties of equality are used to write equivalent expressions.	• Addition Property of Equality • Subtraction Property of Equality • Multiplication Property of Equality • Division Property of Equality	• Tile Math Small Group: Hands on Equations Activity
6.AF.3 Solve equations of the form x + p = q, x − p = q, px = q, and xp = q fluently for cases in which p, q and x are all nonnegative rational numbers. Represent real-world problems using	4-3 Write and Solve Addition and Subtraction Equations	SWBAT • Write one-variable addition and subtraction equations. • Use inverse relationships and properties of equality	• inverse relationship	• Solveme.org • XL 4.3

equations of these forms and solve such problems. (E)		to solve one-step addition and subtraction equations.		Small Group: Page 202
6.AF.3 Solve equations of the form x + p = q, x − p = q, px = q, and xp = q fluently for cases in which p, q and x are all nonnegative rational numbers. Represent real-world problems using equations of these forms and solve such problems. (E)	4-4 Write and Solve Multiplication and Division Equations	SWBAT • Write one-variable multiplication and division equations. • Use inverse relationships and properties of equality to solve one-step multiplication and division equations.		• Quizizz: one-step equations • XL 4.4 • Edulastic Quiz Topic 4: lessons 3 & 4 Small Group: Page 208
6.AF.3 Solve equations of the form x + p = q, x − p = q, px = q, and xp = q fluently for cases in which p, q and x are all nonnegative rational numbers. Represent real-world problems using equations of these forms and solve such problems. (E)	4-5 Write and Solve Equations with Rational Numbers	SWBAT • Write and solve equations that involve fractions, decimals, and mixed numbers.		• Triangle puzzle • Word Problems Small Group: Pgs. 215 and 216
6.AF.2 Demonstrate 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. (E) 6.AF.4 Write an inequality of the form x > c, x ≥ c, x < c, or x ≤ c, where c is a rational number, to represent a constraint or condition in a real-world or	4-6 Understand and Write Inequalities	SWBAT • Understand the symbols required to write an inequality. • Write inequalities to describe mathematical or real-world situations.	inequality	• **Inequality Sort:** Understanding Vocabulary of Inequalities • Quizizz QUIZ inequalities

other mathematical problem. Explain that inequalities have infinitely many solutions and how to represent solutions on a number line diagram.				Small Group:
6.AF.2 Demonstrate 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. (E) 6.AF.4 Write an inequality of the form $x > c$, $x \geq c$, $x < c$, or $x \leq c$, where c is a rational number, to represent a constraint or condition in a real-world or other mathematical problem. Explain that inequalities have infinitely many solutions and how to represent solutions on a number line diagram.	4-7 Solve Inequalities	SWBAT • Describe solutions to an inequality. • Represent solutions to an inequality on a number line.		• Understanding Inequalities WS • Dominoes…in equality set Small Group: WB page 230 or back of Inequality WS
6.AF.2 Demonstrate 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. (E) 6.AF.4 Write an inequality of the form $x > c$, $x \geq c$, $x < c$, or $x \leq c$, where c is a rational number, to represent a constraint or condition in a real-world or other mathematical problem. Explain that inequalities have infinitely many	3-Act Mathematical Modeling Lesson (Supplement)	SWBAT • Use mathematical modeling to represent a problem situation and to propose a solution. • Test and verify the appropriateness of math models. • Explain why the results from mathematical models may not align exactly to the problem situation.		• Small Group:

solutions and how to represent solutions on a number line diagram.				
6.RP.5 Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. (E)	4-8 Understand Dependent and Independent Variables	SWBAT • Identify dependent variables. • Identify independent variables.	• dependent variable • independent variable	• Visual models (boxes) • Variable Maze • Quizlet.live
6.RP.3 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. 6.RP.5 Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. (E)	4-9 Use Patterns to Write and Solve Equations	SWBAT • Analyze the relationships between variables by using tables. • Write equations to represent the relationships between variables.		• Examples & Try Its • Do You Know How? Small Group: Page 246
6.RP.3 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.	4-10 Relate Tables, Graphs, and Equations	SWBAT • Analyze the relationship between dependent and independent variables using		• One Step Inequality Sort (3-colored set)

6.RP.5 Use variables to represent two quantities in a proportional relationship in a real-world problem; write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. (E)		tables, graphs, and equations.		• Examples & Try Its. • Do You Know How? Small Group: Page 252

Topic #: 8 Display, Describe, and Summarize Data Duration: Quarter 4 April				
Standard(s)	**Envision Lesson**	**Objective**	**Vocabulary**	**Materials**
6.DS.3 Summarize numerical data sets in relation to their context in multiple ways, such as: A. report the number of observations B. describe the nature of the attribute under investigation, including how it was measured and its units of measurement C. determine quantitative measures of center (mean and/or median) and spread(range and interquartile range) D. d. describe any overall pattern and any striking deviations from the overall pattern with reference	8-2 Summarize Data Using Mean, Median, Mode, and Range	SWBAT determine the mean, median, mode, and range of a data set.	• mean • median • mode • range	• XL 8.2 • Day 2: Use data collected day 1 to create line plots. (Measures of Center) Small Group: Pg. 482 (24-29)

to the context in which the data were gathered relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered (E)				
6.DS.1 Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots. 6.DS.3 Summarize numerical data sets in relation to their context in multiple ways, such as: A. report the number of observations B. describe the nature of the attribute under investigation, including how it was measured and its units of measurement C. determine quantitative measures of center (mean and/or median) and spread(range and interquartile range) D. d. describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered (E)	8-3 Display Data in Box Plots	SWBAT • display data in a box plot. • interpret and analyze a box plot.	• box plot • quartiles	• XL 8.3 • Partner Practice: Pg. 487 (9-16) • Human Box Plots Small Group: Pg. 488 (17-22)

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6.DS.1 Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots. 6.DS.3 Summarize numerical data sets in relation to their context in multiple ways, such as: A. report the number of observations B. describe the nature of the attribute under investigation, including how it was measured and its units of measurement C. determine quantitative measures of center (mean and/or median) and spread(range and interquartile range) D. d. describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered (E)	8-4 Display Data in Frequency Tables and Histograms	SWBAT • Organize data into equal intervals and display data in a frequency table or histogram. • Interpret and analyze a histogram.	• frequency table • histogram	• Edulastic – Histograms • Quiz 8.4 Small Group: Page 494 (15-18) Mid-Topic Checkpoint: Page 495
Checkpoint 2				

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Topic #: 5 Understand and Use Ratio and Rate		Duration: Quarter 3 January-February		
Standard(s)	**Envision Lesson**	**Objective**	**Vocabulary**	**Materials**
6.RP.4 Solve real-world and other mathematical problems involving rates and ratios using models and strategies such as reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. (E)	5-1 Understand Ratios	SWBAT • Use ratios to describe the relationship between two quantities. • Use bar diagrams and double number line diagrams to model ratio relationships.	• ratio • terms	• Blooket • Quizlet Live • XL 5.1 Small Group: Page 272
6.RP.4 Solve real-world and other mathematical problems involving rates and ratios using models and strategies such as reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. (E) 6.RP.3 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.	5-2 Generate Equivalent Ratios	SWBAT • Use multiplication and division to find equivalent ratios. • Solve problems by finding equivalent ratios.	• circumference • diameter • equivalent ratios • Pi	• XL 5.2 • Edulastic Small Group: Page 278
6.RP.4 Solve real-world and other mathematical problems involving rates and ratios using models and strategies such as reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. (E)	5-3 Compare Ratios	SWBAT • Use ratio tables to compare ratios. • Compare ratios to solve problems.		• XL 5.3 • Edulastic Small Group: Page 284 (13-15)

6.RP.3 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.				
6.RP.4 Solve real-world and other mathematical problems involving rates and ratios using models and strategies such as reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. (E) 6.RP.3 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.	5-4 Represent and Graph Ratios	SWBAT • Represent equivalent ratios on graphs. • Use ratio tables and graphs to solve problems.		• XL 5.4 Small Group:
6.RP.2 Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship. 6.RP.4 Solve real-world and other mathematical problems involving rates and ratios using models and strategies such as reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. (E) 6.RP.3 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.	5-5 Understand Rates and Unit Rates	SWBAT • Use rates to describe ratios in which the terms have different units. • Use rates and unit rates to solve problems.	• rate • unit rate	• XL 5.5 • Mid-Topic Assessment Small Group: Page 298

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6.RP.2 Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship. 6.RP.4 Solve real-world and other mathematical problems involving rates and ratios using models and strategies such as reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. (E)	5-6 Compare Unit Rates	SWBAT • Use ratio reasoning to compare rates and solve problems.	• unit price	• PowerPoint Slides • XL 5.6 Small Group: Page 304
6.RP.2 Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship. 6.RP.4 Solve real-world and other mathematical problems involving rates and ratios using models and strategies such as reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. (E)	5-7 Solve Unit Rate Problems	SWBAT • Use unit rates to solve problems involving constant speed. • Use unit rates to solve problems involving unit price. • Solve unit rate problems using an equation.	• constant speed	• XL 5.7 • Pages 334-338 Small Group: Page 310
6.RP.2 Understand the concept of a unit rate and use terms related to rate in the context of a ratio relationship. 6.RP.4 Solve real-world and other mathematical problems involving rates and ratios using models and strategies such as reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. (E)	3-Act Mathematical Modeling (Supplement)	SWBAT • Use mathematical modelin g torepresent a problem sit uationand to propose a sol ution. • Test and verify the appropr iateness of their math models. • Explain why the results fro mtheir mathematical model		

		s maynot align exactly to th e problem situation.		
6.RP.4 Solve real-world and other mathematical problems involving rates and ratios using models and strategies such as reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. (E) 6.GM.1 Convert between measurement systems (English to metric and metric to English) given conversion factors, and use these conversions in solving real-world problems.	5-8 Ratio Reasoning: Convert Customary Units	SWBAT • Use ratio reasoning and conversion factors to convert customary units of measure.	• conversion factor • dimensional analysis	• Conversion Charts Small Group: Pg. 320
6.RP.4 Use reasoning involving rates and ratios to model real-world and other mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations). 6.GM.1 Convert between measurement systems (Customary to metric and metric to Customary) given conversion factors, and use these conversions in solving real-world problems.	5-9 Ratio Reasoning: Convert Metric Units	SWBAT • Use ratio reasoning and conversion factors to convert metric units of measure.		• Conversion Charts Small Group: Pg. 326
6.RP.4 Solve real-world and other mathematical problems involving rates and ratios using models and strategies such as reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. (E)	5-10 Relate Customary and Metric Units	SWBAT • Use ratio reasoning and conversion factors to convert between customary and metric units of measure.		• Conversion Charts Small Group: Pg. 332

6.GM.1 Convert between measurement systems (Customary to metric and metric to Customary) given conversion factors, and use these conversions in solving real-world problems.				

Topic #: 6 Understand and Use Percent		Duration: Quarter 3 February		
Standard(s)	**Envision Lesson**	**Objective**	**Vocabulary**	**Materials**
6.RP.1 Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator. (E)	6-1 Understand Percent	SWBAT • Represent the percent of a whole. • Find the percent of a whole.	• percent	• Quizlet Live: Fractions, Decimals & % Small Group: Page 352
6.RP.1 Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator. (E)	6-2 Relate Fractions, Decimals, and Percents	SWBAT: • Write equivalent values as fractions, decimals, and percents. • Write fractions as decimals and percents when the denominator of the fraction is not 100.		• XL 6.2 • Practice Slides Small Group: Page 358
6.RP.1 Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator. (E)	6-3 Represent Percents Greater Than 100 or Less Than 1	SWBAT • Write percents that are greater than 100. • Write percents that are less than 1.		• Quizizz • Practice Slides Small Group: Page 364

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6.RP.1 Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator. (E) 6.RP.4 Solve real-world and other mathematical problems involving rates and ratios using models and strategies such as reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. (E)	6-4 Estimate to Find Percent	SWBAT estimate the percent of a number.		• XL 6.4 Small Group: Page 372
6.RP.1 Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator. (E) 6.RP.4 Solve real-world and other mathematical problems involving rates and ratios using models and strategies such as reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. (E)	6-5 Find the Percent of a Number	SWBAT • Use the decimal form of a percent to find the percent of a number. • Write an equation to solve a percent problem.		• XL 6.5 Small Group: Page 378
6.RP.1 Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator. (E) 6.RP.4 Solve real-world and other mathematical problems involving rates and ratios using models and strategies such as reasoning about tables of	6-6 Find the Whole Given a Part and the Percent	SWBAT find the whole amount when given a part and the percent.		• Topics 1-6 Review Small Group: Pg. 384

equivalent ratios, tape diagrams, double number line diagrams, or equations. (E)				
6.RP.1 Convert between any two representations (fractions, decimals, percents) of positive rational numbers without the use of a calculator. (E) 6.RP.4 Solve real-world and other mathematical problems involving rates and ratios using models and strategies such as reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. (E)	3-Act Mathematical Modeling Lesson (Supplement)	SWBAT • Use mathematical modeling to represent a problem situation and to propose a solution. • Test and verify the appropr iateness of their math models. • Explain why the results from their mathematical models may not align exactly to the problem situation.		• Small Group:

Topic #: 7 Solve Area, Surface Area, and Volume Problems Duration: Quarter 3, 4 March				
Standard(s)	**Envision Lesson**	**Objective**	**Vocabulary**	**Materials**
6.GM.2 Apply the sums of interior angles of triangles and quadrilaterals to solve real-world and mathematical problems. 6.AF.1 Define and use multiple variables when writing expressions to represent real-world and other mathematical problems, and evaluate them for given values. (E)	IN-1 Angles of Triangles and Quadrilaterals	SWBAT • determine unknown measures of interior angles of triangles and quadrilaterals. • write and solve algebraic equations to find angle measures.		• Lesson Quiz • Worksheet Small Group: IN 5-6
6.AF.1 Define and use multiple variables when writing expressions to represent	7-1 Find Areas of	SWBAT		• Quizizz • XL 7.1

real-world and other mathematical problems, and evaluate them for given values. (E)	Parallelograms and Rhombuses	• Use a formula to find the areas of parallelograms and rhombuses. • Find the base or height of a parallelogram or rhombus when the area and the height or base are known.		Small Group: Pg. 406
6.GM.3 Find the area of complex shapes composed of polygons by composing or decomposing into simple shapes; apply this technique to solve real-world and other mathematical problems.	7-2 Solve Triangle Area Problems	SWBAT • Find the areas of triangles, including right triangles. • Find the corresponding base or height of a triangle.		• XL 7.2 Small Group: Pg. 412
6.AF.1 Define and use multiple variables when writing expressions to represent real-world and other mathematical problems, and evaluate them for given values. (E)	7-3 Find Areas of Trapezoids and Kites	SWBAT • Find the areas of trapezoids. • Find the areas of kites.	• kite	• XL 7.3 • Worksheet • Formula for a trapezoid – 2nd day Small Group: Pg. 418
6.AF.1 Define and use multiple variables when writing expressions to represent real-world and other mathematical problems, and evaluate them for given values. (E) 6.GM.3 Find the area of complex shapes composed of polygons by composing or	7-4 Find Areas of Polygons	SWBAT find the areas of polygons by composing and decomposing shapes, including polygons on the coordinate plane.		• XL 7.4 Small Group: Pg. 424

decomposing into simple shapes; apply this technique to solve real-world and other mathematical problems.				
	7-5 Represent Solid Figures Using Nets	SWBAT • Classify solid figures. • Identify solid figures from nets. • Draw nets of solid figures.	• base • edge • face • net • polyhedron • vertex	• 3-D Models • Quizizz Quizizz #45 Identify Nets Small Group: Pg. 432
	3-Act Mathematical Modeling Lesson (Supplement)	SWBAT • Use mathematical modeling to represent a problem situation and to propose a solution. • Test and verify the appropr iateness of math models. • Explain why the results fro mmathematical models ma y not alignexactly to the pr oblem situation.		• Small Group:
	7-6 Find Surface Areas of Prisms	SWBAT • Find the surface area of rec tangular prisms, including cubes. • Find the surface area of triangular prisms.		• XL 7.6 Small Group: All meet at the same time: Page 441 (8-13) Groups: Day 2 Page 442 (18, 19, 24, 25)

	7-7 Find Surface Areas of Pyramids	SWBAT find the surface areas of square and triangular pyramids.		• Error Analysis over Topic 7 concepts Group Presentations
6.GM.4 Find the volume of a right rectangular prism with fractional edge lengths using unit cubes of the appropriate unit fraction edge lengths (e.g., using technology or concrete materials), and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = lwh and V = Bh to find volumes of right rectangular prisms with fractional edge lengths to solve real-world and other mathematical problems. (E)	7-8 Find Volume with Fractional Edge Lengths	SWBAT use cubes and a formula to find the volume of a rectangular prism or a cube with fractional edge lengths.		• Practice – Pg. 453 • XL 7.8 Small Group: Pg. 454 (15, 18-20)
Checkpoint 3				

Topic #: 8 Display, Describe, and Summarize Data			**Duration: Quarter 4 April**	
Standard(s)	**Envision Lesson**	**Objective**	**Vocabulary**	**Materials**
6.DS.2 Formulate statistical questions; collect and organize the data (e.g., using technology); display and interpret the data with graphical representations (e.g., using technology). (E)	8-1 Recognize Statistical Questions	SWBAT • Identify statistical questions. • Write statistical questions and display the collected data.	• statistical question	• PowerPoint Slides with examples • Quizizz practice

				• Collecting data activity
6.DS.3 Summarize numerical data sets in relation to their context in multiple ways, such as: E. report the number of observations F. describe the nature of the attribute under investigation, including how it was measured and its units of measurement G. determine quantitative measures of center (mean and/or median) and spread(range and interquartile range) H. d. describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered (E)	8-2 Summarize Data Using Mean, Median, Mode, and Range	SWBAT determine the mean, median, mode, and range of a data set.	• mean • median • mode • range	• XL 8.2 • Day 2: Use data collected day 1 to create line plots. (Measures of Center) Small Group: Pg. 482 (24-29)
6.DS.1 Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots. 6.DS.3 Summarize numerical data sets in relation to their context in multiple ways, such as:	8-3 Display Data in Box Plots	SWBAT • display data in a box plot. • interpret and analyze a box plot.	• box plot • quartiles	• XL 8.3 • Partner Practice: Pg. 487 (9-16) • Human Box Plots

E. report the number of observations F. describe the nature of the attribute under investigation, including how it was measured and its units of measurement G. determine quantitative measures of center (mean and/or median) and spread(range and interquartile range) H. d. describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered (E)				Small Group: Pg. 488 (17-22)
6.DS.1 Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots. 6.DS.3 Summarize numerical data sets in relation to their context in multiple ways, such as: E. report the number of observations F. describe the nature of the attribute under investigation, including how it was measured and its units of measurement	8-4 Display Data in Frequency Tables and Histograms	SWBAT • Organize data into equal intervals and display data in a frequency table or histogram. • Interpret and analyze a histogram.	• frequency table • histogram	• Edulastic – Histograms • Quiz 8.4 Small Group: Page 494 (15-18) Mid-Topic Checkpoint: Page 495

G. determine quantitative measures of center (mean and/or median) and spread(range and interquartile range) H. d. describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered (E)				
6.DS.1 Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots. 6.DS.3 Summarize numerical data sets in relation to their context in multiple ways, such as: A. report the number of observations B. describe the nature of the attribute under investigation, including how it was measured and its units of measurement C. determine quantitative measures of center (mean and/or median) and spread(range and interquartile range) D. d. describe any overall pattern and any striking deviations from	8-5 Summarize Data Using Measures of Variability	SWBAT • Calculate the mean absolute deviation (MAD) and interquartile range (IQR) of a data set. • Summarize data using measures of variability.	• absolute deviation • mean absolute deviation (MAD) • interquartile range (IQR) • Peak • Outlier • Gap • Skewed • Clusters	• XL 8.5 Small Group: Page 502 (15-20)

the overall pattern with reference to the context in which the data were gathered relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered (E)				
6.DS.1 Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots. 6.DS.3 Summarize numerical data sets in relation to their context in multiple ways, such as: A. report the number of observations B. describe the nature of the attribute under investigation, including how it was measured and its units of measurement C. determine quantitative measures of center (mean and/or median) and spread(range and interquartile range) D. d. describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered relate the choice of measures of center and spread to the shape of the data	8-6 Choose Appropriate Statistical Measures	SWBAT • Select the most appropriate measure of center and variability for a data set. • Use measures to describe data sets.	• Outlier • Mean • Median • Mode • IQR • MAD	• PowerPoint Slides reviewing and practicing Measures of Center Small Group: Page 508 (13-19)

distribution and the context in which the data were gathered (E)				
6.DS.1 Select, create, and interpret graphical representations of numerical data, including line plots, histograms, and box plots. 6.DS.3 Summarize numerical data sets in relation to their context in multiple ways, such as: A. report the number of observations B. describe the nature of the attribute under investigation, including how it was measured and its units of measurement C. determine quantitative measures of center (mean and/or median) and spread(range and interquartile range) D. d. describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered (E)	8-7 Summarize Data Distributions	SWBAT • Describe the center, spread, and overall shape of a data set. • Summarize numerical data sets using measures of center and related measures of variability.	• data distribution	• XL 8.7 Small Group: Page 514 (11-16)
6.DS.2 Formulate statistical questions; collect and organize the data (e.g., using technology); display and interpret the	3-Act Mathematical Modeling (Supplement)	SWBAT • Use mathematical modeling to represent a		Small Group:

data with graphical representations (e.g., using technology). (E) 6.DS.3 Summarize numerical data sets in relation to their context in multiple ways, such as: A. report the number of observations B. describe the nature of the attribute under investigation, including how it was measured and its units of measurement C. determine quantitative measures of center (mean and/or median) and spread(range and interquartile range) D. d. describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered relate the choice of measures of center and spread to the shape of the data distribution and the context in which the data were gathered (E)		problem situation and to propose a solution. • Test and verify the appropr iateness of their math models. • Explain why the results from their mathematical models may not align exactly to the problem situation.		