Mathematics 6
Diocese of Greensburg Curriculum

Unit	Standards	Content	Skills
Whole Numbers	**CCSS: Mathematics** **CCSS: Grade 6** **The Number System** **6. NS.B. Compute fluently with multi-digit numbers and find common factors and multiples.** 6.NS.B.2. Fluently divide multi-digit numbers using the standard algorithm. **NCTM: Mathematics** **NCTM: Grades 6 - 8** **Number & Operations** **Understand numbers, ways of representing numbers, relationships among numbers, and number systems** work flexibly with fractions, decimals, and percents to solve problems; compare and order fractions, decimals, and percents efficiently and find their approximate locations on a number line; use factors, multiples, prime factorization, and relatively prime numbers to solve problems © Copyright 2010. National Governors Association Center for Best Practices and Council of Chief State School Officers. All rights reserved.	**Place Value, Addition, Subtraction** • Place value to billions • Standard, Expanded, and Word Form • Comparing and Ordering Whole Numbers • Rounding and Estimation of Whole Numbers • Properties of Addition and Subtraction • Addition and subtraction of whole numbers (including 3 or more addends) • Subtraction across zero **Multiplication and Division** • Properties of multiplication and division • Estimation of products and quotients (including using compatible numbers and rounding) • Multiplication and division of whole numbers with multi-digits • Exponents • Order of Operations	The student will be able to: • Write, identify, and state numbers to the billions place • Write whole numbers in standard, expanded, and Word Form • Compare and order whole numbers • Round and estimate whole numbers • Recognize and apply the properties of addition and subtraction • Add and subtract whole numbers (including 3 or more addends) • Subtract across zero • Recognize and apply properties of multiplication and division • Estimate products and quotients (including using compatible numbers and rounding) • Multiply and divide whole numbers with multi-digits • Solve problems with exponents. • Use Order of Operations.
Decimals	**CCSS: Mathematics** **CCSS: Grade 6**	**Place Value, Addition, and Subtraction of Decimals**	The students will be able to:

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	The Number System **6. NS.B. Compute fluently with multi-digit numbers and find common factors and multiples.** 6.NS.B.3. Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. **NCTM: Mathematics** **NCTM: Grades 6 - 8** **Number & Operations** **Understand numbers, ways of representing numbers, relationships among numbers, and number systems** work flexibly with fractions, decimals, and percents to solve problems; compare and order fractions, decimals, and percents efficiently and find their approximate locations on a number line; **Understand meanings of operations and how they relate to one another** understand the meaning and effects of arithmetic operations with fractions, decimals, and integers; use the associative and commutative properties of addition and multiplication and the distributive property of multiplication over addition to simplify computations with integers, fractions, and decimals; **Compute fluently and make reasonable estimates** select appropriate methods and tools for computing with fractions and decimals from among mental computation, estimation, calculators or computers, and paper and pencil, depending on the situation, and apply the selected methods;	• Reading and writing decimals to the thousandths place • Rounding to the nearest whole number, tenths, hundredths, and thousandths • Ordering and comparing decimals • Estimation of decimal sums and differences • Addition and subtraction of decimals • Addition and subtraction of money **Multiplication and Division of Decimals** • Multiplication and division by 10, 100, 1000 • Estimation of decimal products • Multiplication of decimals by whole numbers • Multiplication of decimals by decimals • Zeros in the product • Estimation of decimal quotients • Division of decimals by whole numbers • Division of decimals by decimals • Zeros in division • Multiplication and division of money	• Read and write decimals to the thousandths place • Round to the nearest whole number, tenths, hundredths, and thousandths • Order and compare decimals • Distinguish between terminating and repeating decimals • Estimate decimal sums and differences • Add and subtract of decimals • Add and subtract money • Multiply and divide by 10, 100, 1000 • Estimate decimal products • Multiply decimals by whole numbers • Multiply of decimals by decimals • Calculate with zeros in the product • Estimate decimal quotients • Divide decimals by whole numbers • Divide decimals by decimals • Calculate with zeros in division • Convert decimals to fractions and fractions to decimals • Multiply and divide money

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	develop and analyze algorithms for computing with fractions, decimals, and integers and develop fluency in their use; 		
Fractions	**CCSS: Mathematics** **CCSS: Grade 6** **The Number System** **6.NS.A. Apply and extend previous understandings of multiplication and division to divide fractions by fractions.** 6.NS.A.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. **6. NS.B. Compute fluently with multi-digit numbers and find common factors and multiples.** 6.NS.B.2. Fluently divide multi-digit numbers using the standard algorithm. 6.NS.B.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. **NCTM: Mathematics** **NCTM: Grades 6 - 8** **Number & Operations**	**Fraction Concepts** • Reading and writing fractions (modeling, understanding and, representing fractions) • Factors, multiples, primes, and composites • Prime factorization • Divisibility rules(2,3,4,5,6,9,10) • Greatest common factor (GCF) • Least common multiple (LCM & LCD) • Simplest form • Equivalent fractions • Mixed numbers • Improper fractions (Fractions greater than one) • Comparison and order fractions • Conversion of improper fractions and mixed numbers **Addition and Subtraction of Fractions** • Estimation of sums and differences of fractions and mixed numbers (rounding) • Addition of fractions and mixed numbers with like and **unlike** denominators	The students will be able to: • Distinguish between prime and composite numbers. • Represent a number using prime factorization. • Identify the LCM and GCF of two or more numbers. • Determine GCF in order to calculate equivalent fractions • Write fractions in simplest form • Compare and order fractions and mixed numbers • Convert improper fractions and mixed numbers • Estimate sums and differences of fractions and mixed numbers • Add fractions and mixed numbers with like and unlike denominators • Subtract fractions and mixed numbers with like and unlike denominators • Estimate products and quotients with fraction and mixed numbers • Multiply fractions by fractions, whole numbers, and mixed numbers

Unit	Standards	Content	Skills
	Understand numbers, ways of representing numbers, relationships among numbers, and number systems work flexibly with fractions, decimals, and percents to solve problems; compare and order fractions, decimals, and percents efficiently and find their approximate locations on a number line; **Understand meanings of operations and how they relate to one another** understand the meaning and effects of arithmetic operations with fractions, decimals, and integers; use the associative and commutative properties of addition and multiplication and the distributive property of multiplication over addition to simplify computations with integers, fractions, and decimals; **Compute fluently and make reasonable estimates** select appropriate methods and tools for computing with fractions and decimals from among mental computation, estimation, calculators or computers, and paper and pencil, depending on the situation, and apply the selected methods; develop and analyze algorithms for computing with fractions, decimals, and integers and develop fluency in their use; © Copyright 2010. National Governors Association Center for Best Practices and Council of Chief State School Officers. All rights reserved.	• Subtraction of fractions and mixed numbers with like and **unlike** denominators • Subtraction with renaming **Multiplication and Division of Fractions** • Estimation of products and quotients with fraction and mixed numbers (rounding and compatible numbers) • Multiplication of fractions by fractions and whole numbers • Simplification of fraction prior to multiplication (Canceling) • Multiplication of fractions and mixed numbers • Multiplication of mixed numbers by mixed numbers • Reciprocals • Division of whole numbers by fractions • Division of fractions by fractions • Division of fractions by whole numbers • Division of mixed numbers by fractions • Division of mixed numbers by mixed numbers	• Simplify fraction prior to multiplication (Canceling) • Identify reciprocals in order to divide • Divide whole numbers by fractions • Divide fractions by fractions and whole numbers • Divide mixed numbers by fractions and mixed numbers • Convert fractions to decimals and decimals to fractions

Measurement & Conversions	**NCTM: Mathematics**
	  NCTM: Grades 3 - 5
	   Measurement
		• Customary measurements
		• Metric measurements
			The students will be able to:
			
			• Solve problems involving measurement and

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	Understand measurable attributes of objects and the units, systems, and processes of measurement understand the need for measuring with standard units and become familiar with standard units in the customary and metric systems **NCTM: Grades 6 - 8** **Measurement** **Understand measurable attributes of objects and the units, systems, and processes of measurement** understand both metric and customary systems of measurement; Used with permission of the National Council of Teachers of Mathematics. This use does not imply endorsement of materials or validation of alignment.	• Converting customary and metric units	conversion of measurements from a larger unit to a smaller unit. • Use fractions and decimals to convert units of measure. • Read and use a ruler.
Integers & Rational Numbers	**CCSS: Mathematics** **CCSS: Grade 6** **The Number System** **6.NS.C. Apply and extend previous understandings of numbers to the system of rational numbers.** 6.NS.C.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. 6.NS.C.6a. 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.C.6b. Understand signs of numbers in ordered pairs as indicating locations in quadrants	• Integers on a number line • Absolute value • Comparison and order integers • Addition, subtraction, multiplication, division of integers • Order of operations with integers • Rational numbers • Comparison and order rational numbers • Distributive property	The students will be able to: • Use positive and negative numbers to represent quantities in real world context. • Plot integers and other rational numbers on a number line. • Interpret the opposite and absolute value of an integer as its distance from zero on a number line. • Calculate the absolute value of numbers. • Compare and order integers. • Add, subtract, multiply, and divide integers. • Use order of operations with integers.

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	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.NS.C.6c. 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.C.7. Understand ordering and absolute value of rational numbers. 6.NS.C.7b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. 6.NS.C.7c. 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. 6.NS.C.7d. Distinguish comparisons of absolute value from statements about order. 6.NS.C.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. **Expressions & Equations** **6.EE.B. Reason about and solve one-variable equations and inequalities.** 6.EE.B.7. Solve real-world and mathematical problems by writing and solving equations of the		• Identify rational numbers. • Compare and order rational numbers. • Recognize and use distributive property.

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	form x + p = q and px = q for cases in which p, q and x are all nonnegative rational numbers. **NCTM: Mathematics** **NCTM: Grades 6 - 8** **Number & Operations** **Understand numbers, ways of representing numbers, relationships among numbers, and number systems** develop meaning for integers and represent and compare quantities with them. **Understand meanings of operations and how they relate to one another** understand the meaning and effects of arithmetic operations with fractions, decimals, and integers; use the associative and commutative properties of addition and multiplication and the distributive property of multiplication over addition to simplify computations with integers, fractions, and decimals; understand and use the inverse relationships of addition and subtraction, multiplication and division, and squaring and finding square roots to simplify computations and solve problems. **Compute fluently and make reasonable estimates** develop and analyze algorithms for computing with fractions, decimals, and integers and develop fluency in their use; develop and use strategies to estimate the results of rational-number computations and judge the reasonableness of the results; 		

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Ratios, Proportions, and Percents	**CCSS: Mathematics** **CCSS: Grade 6** **Ratios & Proportional Relationships** **6.RP.A. Understand ratio concepts and use ratio reasoning to solve problems.** 6.RP.A.1. Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. 6.RP.A.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. 6.RP.A.3. Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. 6.RP.A.3a. 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.A.3b. Solve unit rate problems including those involving unit pricing and constant speed. 6.RP.A.3c. 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. 6.RP.A.3d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. **NCTM: Mathematics**	• Ratios • Rates/Unit Rates • Writing and solving proportions • Solving proportions using cross products • Scale drawing models • Equivalent percents, fractions, decimals, ratios • Solve problems with percents, i.e. sales tax, mark up, interest	**The students will be able to:** • Describe the relationship between ratio, proportion, and percent. • Apply ratio, rates and percent to real world problems, i.e. sales tax, mark up, interest. • Apply the percent formula to find the unknown rate, the unknown base, or the unknown amount in percent problems. • Represent ratio relationships in various forms. • Recognize three ways to write a ratio. • Find rates/unit rates. • Write and solve proportions. • Solve proportions using cross products. • Draft scale drawing models. • Calculate equivalent percents, fractions, decimals, ratios. • Interpret and compute quotients of a fraction.

Unit	Standards	Content	Skills
	NCTM: Grades 6 - 8 **Number & Operations** **Understand numbers, ways of representing numbers, relationships among numbers, and number systems** understand and use ratios and proportions to represent quantitative relationships; **Compute fluently and make reasonable estimates** develop, analyze, and explain methods for solving problems involving proportions, such as scaling and finding equivalent ratios. **Measurement** **Apply appropriate techniques, tools, and formulas to determine measurements** solve problems involving scale factors, using ratio and proportion; 		
Probability and Statistics	**CCSS: Mathematics** **CCSS: Grade 6** **Statistics & Probability** **6.SP.A. Develop understanding of statistical variability.** 6.SP.A.1. Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. **6.SP.B. Summarize and describe distributions.** 6.SP.B.5a. Reporting the number of observations.	• Theoretical probability • Experimental probability • Make predictions • Problem Solving Skill - (Make an organized list) • Outcomes of compound events • Independent and dependent events • Permutations and combinations (if applicable)	The students will be able to: • Determine and apply basic concepts of probability using tree diagrams, permutations, and combinations. • Find the probability of independent and dependent events. • Predict the probability of outcomes of simple experiments (tossing a coin, rolling a die) and test predictions.

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	NCTM: Mathematics **NCTM: Grades 6 - 8** **Data Analysis & Probability** **Understand and apply basic concepts of probability** understand and use appropriate terminology to describe complementary and mutually exclusive events; compute probabilities for simple compound events, using such methods as organized lists, tree diagrams, and area models. 		
Algebraic Expressions and Equations	**CCSS: Mathematics** **CCSS: Grade 6** **The Number System** **6.NS.C. Apply and extend previous understandings of numbers to the system of rational numbers.** 6.NS.C.7a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. **Expressions & Equations** **6.EE.A. Apply and extend previous understandings of arithmetic to algebraic expressions.** 6.EE.A.1. Write and evaluate numerical expressions involving whole-number exponents. 6.EE.A.2. Write, read, and evaluate expressions in which letters stand for numbers.	• One-step equations using inverse operations • Two-step equations • One-step inequalities • Functions and equations • Graphing functions • Numerical Expressions • Equivalent Expressions • Problem-Solving Strategies • Function tables • Coordinate Planes • Graph on a coordinate plane	The students will be able to: • Translate words to mathematical and algebraic expressions and equations. • Write, identify, and evaluate numerical expressions involving exponents. • Write, read, and evaluate algebraic expressions. • Apply the properties of operations to generate equivalent expressions. • Simplify expressions and solve equations. • Solve one- and two-step equations using inverse operations. • Solve one-step inequalities. • Identify and graph functions.

Unit	Standards	Content	Skills
	6.EE.A.2a. Write expressions that record operations with numbers and with letters standing for numbers. 6.EE.A.2b. 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. 6.EE.A.2c. 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). 6.EE.A.3. Apply the properties of operations to generate equivalent expressions. 6.EE.A.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). **6.EE.B. Reason about and solve one-variable equations and inequalities.** 6.EE.B.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.		• Plot ordered pairs on a coordinate plane to form a line. • Represent and analyze quantitative relationships between independent and dependent variables. • Use inverse relationships to solve equations. • Analyze the relationship between variables by using tables. • Identify patterns.

Unit	Standards	Content	Skills
	6.EE.B.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.B.8. Write an inequality of the form x > c or x c or x **NCTM: Mathematics** **NCTM: Grades 6 - 8** **Algebra** **Represent and analyze mathematical situations and structures using algebraic symbols** recognize and generate equivalent forms for simple algebraic expressions and solve linear equations © Copyright 2010. National Governors Association Center for Best Practices and Council of Chief State School Officers. All rights reserved.		
Inequalities	**CCSS: Mathematics** **CCSS: Grade 6** **The Number System** **6.NS.C. Apply and extend previous understandings of numbers to the system of rational numbers.** 6.NS.C.7a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. **Expressions & Equations** **6.EE.B. Reason about and solve one-variable equations and inequalities.**	• Solutions of inequalities • Graphing inequalities on a number line • Identify the set of the inequality • Problem Solving Skills	The students will be able to: • Understand the symbols required to write an inequality • Write inequalities to describe mathematical and real world situations. • Describe solutions to an inequality • Represent/Graph solutions on a number line

Unit	Standards	Content	Skills
	6.EE.B.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. 		

Geometry	**CCSS: Mathematics**
	CCSS: Grade 6
	
	Geometry
	6.G.A. Solve real-world and mathematical problems involving area, surface area, and volume.
	
	6.G.A.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.
	
	6.G.A.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.A.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.
		• Types of solid figures (spheres, cubes, rectangular prisms, triangular prisms, cones, cylinders, pyramids)
		• Surface area and volume of a solid figure
		• Polygons - Identify and Classify (pentagon, hexagon, heptagon, octagon, nonagon, decagon)
		• Identify face, edge, and vertex
		• Area and Perimeter of the following:
		   o Triangles (scalene, isosceles , equilateral, right, obtuse, acute)
		   o Quadrilaterals (square, rectangle, trapezoid, parallelogram, rhombus)
		   o Circles (diameter, radius, chord, area, circumference)
			The students will be able:
			
			• Calculate the area and perimeter of triangles, quadrilaterals, irregular polygons, and compound polygons.
			• Find volumes of rectangular prisms or cubes (using cubes) with fractional edge lengths.
			• Classify solid figures and polygons.
			• Use faces, edges, and vertices to identify shapes.
			• Calculate the surface area of prisms and pyramids.

Unit	Standards	Content	Skills
	6.G.A.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. **NCTM: Mathematics** **NCTM: Grades 6 - 8** **Geometry** **Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships** understand relationships among the angles, side lengths, perimeters, areas, and volumes of similar objects; **Specify locations and describe spatial relationships using coordinate geometry and other representational systems** use coordinate geometry to represent and examine the properties of geometric shapes; use coordinate geometry to examine special geometric shapes, such as regular polygons or those with pairs of parallel or perpendicular sides. **Apply transformations and use symmetry to analyze mathematical situations** describe sizes, positions, and orientations of shapes under informal transformations such as flips, turns, slides, and scaling; **Use visualization, spatial reasoning, and geometric modeling to solve problems** draw geometric objects with specified properties, such as side lengths or angle measures; use visual tools such as networks to represent and solve problems;		

Unit	Standards	Content	Skills
	use geometric models to represent and explain numerical and algebraic relationships; recognize and apply geometric ideas and relationships in areas outside the mathematics classroom, such as art, science, and everyday life. 		
Data Analysis	**CCSS: Mathematics** **CCSS: Grade 6** **Statistics & Probability** **6.SP.A. Develop understanding of statistical variability.** 6.SP.A.1. Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. 6.SP.A.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.A.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. **6.SP.B. Summarize and describe distributions.** 6.SP.B.4. Display numerical data in plots on a number line, including dot plots, histograms, and box plots. 6.SP.B.5. Summarize numerical data sets in relation to their context, such as by:	• Mean, Median, Mode, Range • Frequency Tables & Line Plots • Stem & Leaf, Histograms, Box & Whisker • How to create and conduct a Survey	The students will be able to: • Display data in dot plots, histograms and box-and whisker plots. • Determine quantitative measures of center and variability. • Choose the appropriate measure of center and variability for a set of data. • Make & Analyze Graphs (possibly using Excel).

Unit	Standards	Content	Skills
	6.SP.B.5a. Reporting the number of observations.		

6.SP.B.5d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

NCTM: Mathematics

NCTM: Grades 6 - 8

Data Analysis & Probability

Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them

formulate questions, design studies, and collect data about a characteristic shared by two populations or different characteristics within one population;

select, create, and use appropriate graphical representations of data, including histograms, box plots, and scatterplots.

Select and use appropriate statistical methods to analyze data

find, use, and interpret measures of center and spread, including mean and interquartile range;

discuss and understand the correspondence between data sets and their graphical representations, especially histograms, stem-and-leaf plots, box plots, and scatterplots.

Develop and evaluate inferences and predictions that are based on data

use observations about differences between two or more samples to make conjectures about the populations from which the samples were taken;

Unit	Standards	Content	Skills
Problem-Solving Strategies	**CCSS: Mathematics** **CCSS: Grade 6** **Mathematical Practice** **MP.The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.** MP.1. Make sense of problems and persevere in solving them. **NCTM: Mathematics** **NCTM: Grades 6 - 8** **Process Standards** **Problem Solving** Build new mathematical knowledge through problem solving Solve problems that arise in mathematics and in other contexts Apply and adapt a variety of appropriate strategies to solve problems Monitor and reflect on the process of mathematical problem solving **Representation** Select, apply, and translate among mathematical representations to solve problems © Copyright 2010. National Governors Association Center for Best Practices and Council of Chief State School Officers. All rights reserved.	Analyze a Problem Select a Strategy: - Make a Table - Make a Graph - Make an Organized List - Draw a Diagram - Write an Equation - Work Backwards - Find a Pattern - Make a Model - Solve a Simpler Problem - Make Generalizations - Use Logical Reasoning - Estimate or Find Exact Answer - Choose the Operation - Predict & Test (Guess, Check & Revise) - Check for a reasonable answer - Label answers - Interpret the Remainder	The students will be able to: - Develop strategies to solve word problems related to various math topics. - Solve multi-step problems.