Pre-Algebra - MA3119		Scope and Sequence
Unit	**Lesson**	**Objectives**
Integers, Decimals, and Fractions		
	Adding Integers	
		Use visual representations to add integers.
		Apply properties of operations to add integers.
		Describe real-world contexts for adding integers.
	Subtracting Integers	
		Use visual representations to subtract integers.
		Use additive inverse and properties of operations to subtract integers.
		Describe real-world contexts for subtracting integers.
	Multiplying Integers	
		Use visual representations to multiply integers.
		Apply properties of operations and rules of signed numbers to multiply integers.
		Describe real-world contexts for multiplying integers.
	Dividing Integers	
		Use visual representations to divide integers.
		Apply properties of operations and rules of signed numbers to divide integers.
		Describe real-world contexts for dividing integers.
	Adding and Subtracting Decimals	
		Use visual representations to add and subtract decimals.
		Apply properties of operations to add and subtract decimals.
		Estimate sums and differences of decimals.

Pre-Algebra - MA3119		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Describe real-world contexts for adding and subtracting decimals.
	Estimating and Finding Decimal Products	
		Find decimal products and use estimation to place the decimal point in a product.
	Multiplying Fractions	
		Use the rules of signed numbers and visuals to multiply fractions.
		Apply properties of operations to multiply fractions.
		Estimate products of fractions.
		Describe real-world contexts for multiplying fractions.
	Dividing Fractions	
		Use the rules of signed numbers to divide fractions.
		Apply properties of operations to divide fractions.
		Estimate quotients of fractions.
		Describe real-world contexts for dividing fractions.
	Solving Equations with Rational Numbers	
		Identify the least common denominator of fractions to combine like terms and solve equations.
		Solve one-variable linear equations with rational numbers using properties of equality.
	Topic Test	
Expressions		
	Writing and Evaluating Expressions	
		Write algebraic expressions containing one operation.
		Evaluate algebraic expressions containing one operation.

Pre-Algebra - MA3119		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Expressions with More Than One Operation	
		Write algebraic expressions containing more than one operation.
		Use the order of operations to evaluate algebraic expressions containing more than one operation.
	Expressions with and without Parentheses	
		Write algebraic expressions containing more than one operation, with and without parentheses.
		Use the order of operations to evaluate algebraic expressions containing more than one operation, with and without parentheses.
	Equivalent Expressions	
		Generate equivalent expressions using the commutative and associative properties.
		Use substitution to determine if two expressions are equivalent.
	Using the Distributive Property	
		Use the distributive property to simplify expressions.
		Identify and justify distributed expressions.
	Absolute Value	
		Define absolute value.
		Find the absolute value of an integer.
		Compare and order magnitudes using absolute value.
		Represent and compare real-world quantities using absolute value.
	Topic Test	
Equations and Inequalities		
	Addition and Subtraction Equations	

Pre-Algebra - MA3119		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Solve one-step addition and subtraction equations.
		Solve one-step addition and subtraction equations in the real world and interpret the results.
	Multiplication and Division Equations	
		Solve one-step multiplication and division equations.
		Write and solve one-step multiplication and division equations in the real world and interpret the results.
	Solving Two-Step Equations	
		Solve two-step equations.
		Solve two-step equations in the real world and interpret the results.
	Combining Like Terms to Solve Equations	
		Identify and combine like terms to solve one-variable linear equations.
		Determine and apply properties of equality when solving an equation.
	Addition and Subtraction Inequalities	
		Solve one-step addition and subtraction inequalities.
		Solve one-step addition and subtraction inequalities in the real world and interpret the results.
	Multiplication and Division Inequalities	
		Solve one-step multiplication and division inequalities.
		Solve one-step multiplication and division inequalities in the real world and interpret the results.
	Solving Two-Step Inequalities	
		Solve two-step inequalities.
		Solve two-step inequalities in the real world and interpret the results.

Pre-Algebra - MA3119		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Topic Test	
Ratios and Proportional Relationships		
	Equivalent Ratios	
		Analyze patterns in a table of equivalent ratios.
		Find missing values in a table using ratio reasoning.
	Ratios in Real-World Situations	
		Compare ratios in real-world contexts.
	Unit Rates	
		Use appropriate language to describe ratios and unit rates.
		Use a given unit rate and proportional reasoning to complete a table.
		Use a given unit rate and proportional reasoning to solve problems.
	Proportions	
		Write a proportion to represent a given relationship.
		Solve proportion problems by using equivalent fractions.
		Solve proportion problems involving complex fractions.
	Scale Factor	
		Use a given scale factor to find an unknown length on a reduction or enlargement.
		Use a given scale factor to find an unknown length on an original.
	Determining a Scale Factor	
		Identify a scale factor from given dimensions and use it to calculate unknown dimensions.
	Solving Scale Problems Using Proportions	
		Use proportional relationships to solve problems involving scale drawings.

Pre-Algebra - MA3119		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Topic Test	
Percents		
	Finding a Percent of a Number	
		Solve problems by finding the percent of a number, including amounts of gratuity and tax, by using diagrams and expressions.
		Find the percent of a number when the percent is more than 100.
	Finding a Total Amount	
		Solve for the total amount in gratuity, tax, or commission problems by using diagrams and expressions, understanding that it is a process of adding to the original amount.
		Find the total amount, including discounts, understanding that it is a process of subtracting from the original amount.
	Percent Increase and Decrease	
		Find the percent change by using the ratio of the change in quantity to the original amount.
		Use percent increase and decrease to solve real-world problems.
	Topic Test	
Exponents and Scientific Notation		
	Prime Numbers and Prime Factorization	
		List the factors of a number.
		Identify a number as prime or composite.
		Represent a number as the product of its prime factors, using exponents to show repeated factors.
	Factors and Multiples	
		Determine the greatest common factor of two numbers.
		Determine the least common multiple of two numbers.
		Apply greatest common factors and least common multiples to solve real-world problems.

Pre-Algebra - MA3119		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Powers and Exponents	
		Express a power of a positive integer base in expanded form.
		Express expanded form in exponential form.
		Evaluate powers using fractional and negative bases.
	Zero and Negative Exponents	
		Determine patterns of exponent values from a table.
		Evaluate powers of zero and negative exponents.
		Simplify expressions of zero and negative exponents.
	Introduction to Scientific Notation	
		Convert very small or very large numbers between scientific notation and standard notation.
		Order and estimate products and quotients of numbers written in scientific notation.
	Topic Test	
Linear Functions		
	Graphing on the Coordinate Plane	
		Identify and graph points in the coordinate plane, describing their relationship to axes and quadrants.
		Create graphs from a table or situation and use them to solve problems.
	Tables, Graphs, and Equations	
		Translate tables and graphs into equations.
		Generate different representations of the same two-variable data.
		Recognize that tabular and graphical representations may be partial representations.
	Introduction to Functions	

Pre-Algebra - MA3119		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Identify functions from tables, graphs, and equations.
		Determine if a real-world situation describes a functional relationship.
	Constructing Linear Functions	
		Analyze linear functions to find the rate of change and initial value.
		Interpret the rate of change and initial value of a linear function in terms of the situation it models.
	Rate of Change and Introduction to Slope	
		Determine the positive slope of a line from a table and a graph.
		Compare positive slopes in a real-world situation.
	Exploring Slope	
		Recognize the difference between positive slope, negative slope, no slope, and zero slope.
		Determine the value of the slope of a line from a table or a graph.
	Proportional Relationships	
		Determine whether a linear function is a direct variation.
		Solve problems involving direct variation.
		Compare proportional and nonproportional linear functions in the form of a table, graph, and equation.
	Slope-Intercept Form	
		Analyze a graph to determine slope and y-intercept.
		Graph a linear function using the slope and y-intercept.
		Write a linear equation in slope-intercept form given the slope and y-intercept.
	Topic Test	
Cumulative Exam Review		
Cumulative Exam		

Pre-Algebra - MA3119		Scope and Sequence
Unit	**Lesson**	**Objectives**
Angle Relationships and Transformations		
	Angle Relationships	
		Name an angle.
		Identify vertical, adjacent, complementary, and supplementary angles.
		Determine congruence in vertical angle relationships.
		Find missing angle measures using angle relationships.
	Transversals	
		Determine angle relationships created by a transversal line intersecting two nonparallel lines.
		Find unknown angle measures created by a transversal intersecting two or more nonparallel lines.
	Parallel Lines Cut by a Transversal	
		Identify interior angles, exterior angles, alternate interior angles, and alternate exterior angles when a transversal crosses parallel lines.
		Find missing measurements using angle relationships in a diagram of a transversal crossing parallel lines.
		Determine if two lines cut by a transversal are parallel.
	Overview of Transformations	
		Identify types of transformations.
		Relate the result of a transformation to the original figure.
	Translations	
		Identify and describe a translation on the coordinate plane.
		Translate figures on the coordinate plane given as an ordered pair and verbal expression.
		Describe a translation using coordinates.
	Reflections	

Pre-Algebra - MA3119		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Identify and describe a reflection on the coordinate plane.
		Reflect figures on the coordinate plane given the line of reflection.
		Describe a reflected figure using the line of reflection and coordinates.
	Rotations in the Coordinate Plane	
		Rotate figures on the coordinate plane given the degree and direction.
		Describe the rotation of a figure using coordinates.
	Congruence and Transformations	
		Describe a sequence of transformations that shows that a given pre-image is congruent to a transformed figure.
	Topic Test	
Counting and Probability		
	Understanding Probability	
		Identify an event with a given probability as impossible, unlikely, likely, or certain.
		Describe the probability of an event as a number between 0 and 1, which represents the likelihood of the event.
		Use the fact that the sum of the probabilities of all possible outcomes is 1 to find the probabilities of complementary events.
	Experimental vs. Theoretical Probability	
		Compare experimental results to theoretical probabilities and make conjectures about the results.
		Explain possible sources of discrepancy between the theoretical and experimental probability of an event.
	Probability of Compound Events	
		Find probabilities of independent compound events using organized lists, tables, or tree diagrams.
		Find probabilities of dependent compound events using organized lists, tables, or tree diagrams.

Pre-Algebra - MA3119		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Combinations	
		Find possible outcomes.
		Solve or identify solutions to problems involving combinations.
	Sampling Methods	
		Compare a random sample to a biased sample in a variety of real-world contexts to determine validity.
		Identify and explain the process for choosing a random sample.
	Inferences and Predictions	
		Make an inference about the whole population based on a sample by using proportional reasoning.
		Examine sample size and the effect on a prediction using the results of a simulation.
	Topic Test	
Analyzing Data Representation and Scatterplots		
	Summarizing Data Sets with Statistics	
		Find the mean, median, range, and interquartile range of a data set.
		Compare two data sets with the same measure of center but different measures of spread.
	Box Plots	
		Interpret a box plot.
		Create a box plot to represent a set of data, given the summary statistics.
	Comparing Measures of Center and Variability	
		Analyze two numerical data distributions with similar variation by calculating and comparing the measures of center to the measure of variability.
		Compare the measures of center of two sets of data using a multiple of the measure of variability, expressed as a ratio.
		Draw an informal comparative inference about two sets of data.

Pre-Algebra - MA3119		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Constructing Scatterplots	
		Create a scatterplot using a table of values.
		Analyze a scatterplot.
		Classify dependent and independent variables.
	Drawing Trend Lines	
		Use a graphing calculator to graph scatterplots and draw the trend line.
		Draw a line of best fit in scatterplots and identify its purpose.
	Using Equations to Represent Trend Lines	
		Find and interpret the slope of a trend line.
		Create the linear equation of the trend line.
	Topic Test	
Pythagorean Theorem and Irrational Numbers		
	Exploring the Pythagorean Theorem	
		Recognize perfect squares.
		Identify sets of Pythagorean triples.
		Apply the Pythagorean theorem using Pythagorean triples as the side lengths.
		Use Pythagorean triples to determine if a triangle is a right triangle.
	Estimating and Comparing Square Roots	
		Estimate square roots without using technology.
		Plot the estimated values of square roots on a number line.
		Make comparative statements involving square roots.

Pre-Algebra - MA3119		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Finding the Hypotenuse in Right Triangles	
		Use the Pythagorean theorem to find the length of the hypotenuse of a right triangle.
		Approximate the length of the hypotenuse of a right triangle to solve real-world problems.
	Unknown Leg Lengths in Right Triangles	
		Given the length of one leg and the hypotenuse of a right triangle, use the Pythagorean theorem to find the length of the other leg.
		Approximate the length of a leg of a right triangle to solve real-world problems.
	Finding Distance in the Coordinate Plane	
		Apply the Pythagorean theorem to find the distance between two points on the coordinate plane.
		Generate and use the distance formula to find the distance between two points on the coordinate plane.
	Exploring Real Numbers	
		Classify numbers as rational or irrational numbers, and decimals as terminating or repeating.
		Express a repeating decimal with bar notation, and convert it to a fraction.
		Determine sums and products of rational and irrational numbers.
	Topic Test	
Perimeter, Area, and Constructions		
	Finding Area on a Coordinate Plane	
		Find lengths of sides for rectangles drawn in the coordinate plane.
		Calculate the area of a rectangle drawn in the coordinate plane.
	Area of Triangles	
		Calculate the area of triangles using the formula A = ½bh.

Pre-Algebra - MA3119		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Solve real-world problems involving the area of triangles.
	Area of Special Quadrilaterals	
		Find the area of special quadrilaterals.
		Solve real-world problems involving the area of special quadrilaterals.
	Constructing Triangles	
		Construct triangles from given parameters.
		Identify whether given parameters create a unique triangle, more than one triangle, or no triangle.
	Constructing Geometric Figures	
		Construct geometric figures from triangles.
		Describe the characteristics of polygons.
	Topic Test	
Solid Figures		
	Surface Area of Prisms	
		Calculate surface areas of rectangular and triangular prisms.
	Surface Area and Volume of Cylinders	
		Solve mathematical and real-world problems involving the volume and surface area of cylinders.
	Surface Area of Pyramids	
		Calculate surface area of rectangular and square pyramids.
	Volume of Prisms	
		Calculate volumes of rectangular and triangular prisms.
	Volume of Pyramids	
		Calculate volumes of rectangular and square pyramids.

Pre-Algebra - MA3119		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Introduction to the Volume of a Cone	
		Recognize and identify parts of a cone.
		Connect the volume of a cone to the volume of a cylinder.
		Apply the formula to find the volume of a cone.
	Introduction to the Volume of a Sphere	
		Identify the parts of a sphere.
		Connect the volume of a sphere to the volume of a cylinder.
		Apply the formula to find the volume of a sphere.
	Topic Test	
Cumulative Exam Review		
Cumulative Exam		