Unit	Lesson	Lesson Objectives
Number Sense		
	Comparing Rational Numbers	
		Define rational numbers and classify numbers.
		Graph rational numbers on a number line.
		Use a number line to compare rational numbers in a real-world context.
	Ordering Rational Numbers	
		Order rational numbers using a number line.
		Write and interpret statements of comparison for rational numbers in real-world contexts.
	Factors and Multiples	
		Apply greatest common factors and least common multiples to solve real-world problems.
		Determine the greatest common factor of two numbers.
		Determine the least common multiple of two numbers.
	The Distributive Property	
		Use the distributive property to generate equivalent expressions.
	Rational Exponents	
		Evaluate numeric expressions using properties of rational exponents.
		Simplify algebraic expressions using properties of rational exponents.
	Simplifying Rational Expressions	
		Simplify rational expressions using laws of integer exponents.
	Absolute Value	
		Compare and order magnitudes using absolute value.
		Define absolute value.
		Find the absolute value of an integer.
		Represent and compare real-world quantities using absolute value.
Numerical Expressions		
	Solving Problems Involving Rational Numbers	
		Solve real-world and mathematical problems involving addition, subtraction, multiplication, and division with rational numbers.
	Numerical Expressions with Exponents	
		Evaluate numerical expressions including expressions containing whole number exponents.
		Write numerical expressions including expressions containing whole number exponents.
	Exponential Functions with Radical Bases	
		Determine the key aspects of an exponential function having a radical base by rewriting it using the properties of exponents.
		Simplify and evaluate exponential expressions having whole number bases and fractional exponents.
		Transform expressions in radical form to exponential form and vice versa.

Unit	Lesson	Lesson Objectives
	Operations with Scientific Notation	
		Evaluate products and quotients of scientific notation values.
		Identify proper units of measurement for quantities written in scientific notation.
		Recognize scientific notation answers generated by technology and identify the symbols associated with the value.
Ratios, Percents, and Scale Factors		
	Understanding Unit Rates	
		Find unit rates.
	Determining a Scale Factor	
		Identify a scale factor from given dimensions and use it to calculate unknown dimensions.
	Measurements in the Customary System	
		Convert units of measurement in the customary system.
		Solve real-world problems by converting customary measurement units.
	Markups and Markdowns	
		Solve real-world problems involving a markup or markdown relating each as adding or subtracting from the original.
	Simple Interest	
		Apply the simple interest formula in the context of a word problem.
		Calculate simple interest, principal, time, and total using the simple interest formula.
	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.
Two-Dimensional Figures		
	Area of Polygons	
		Solve problems involving areas of triangles and quadrilaterals.
	Area and Perimeter of Geometric Figures	
		Calculate the perimeters and areas of geometric figures.
		Solve problems involving area and perimeter in modeling situations.
	Circumference	
		Solve problems involving the circumference of a circle.
	Area of a Circle	
		Describe the relationship between the circumference and area of a circle.
		Solve problems involving the area of a circle.
	Perimeter	
		Recognize perimeter as a geometric property of plane figures.
		Use unit analysis to solve problems involving perimeter.
		Write and use formulas for circumference.
		Write formulas for and calculate perimeters of plane figures.

Unit	Lesson	Lesson Objectives
	Area of Composite Figures	
		Solve problems involving the area of composite figures.
	Perimeter of Composite Figures	
		Calculate perimeters of many-sided plane figures using combinations of formulas.
		Use unit analysis to solve problems involving perimeters.
	Finding the Hypotenuse in Right Triangles	
		Approximate the length of the hypotenuse of a right triangle to solve real-world problems.
		Use the Pythagorean theorem to find the length of the hypotenuse of a right triangle.
	Unknown Leg Lengths in Right Triangles	
		Approximate the length of a leg of a right triangle to solve real-world problems.
		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.
Three-Dimensional Figures		
	Volume of Prisms	
		Calculate volumes of rectangular and triangular prisms.
	Surface Area of Prisms	
		Calculate surface areas of rectangular and triangular prisms.
	Applications of Volume and Surface Area	
		Solve real-world problems by determining if they require finding surface area or volume.
	Surface Area and Volume of Cylinders	
		Solve mathematical and real-world problems involving the volume and surface area of cylinders.
	Applications with the Volume of a Cylinder	
		Find unknown dimensions of a cylinder given its volume.
		Solve real-life problems using the volume of cylinders.
	Surface Area of a Cone	
		Calculate the surface area of a cone.
		Determine the base area and lateral area of a cone.
	Applications with the Volume of a Cone	
		Find unknown dimensions of a cone given its volume.
		Solve a real-world problem utilizing the formula for volume of a cone.
	Surface Area of Rectangular Pyramids	
		Calculate the surface area of square and rectangular pyramids using nets.
		Represent square and rectangular pyramids using nets.
	Volume of Pyramids	
		Calculate volumes of rectangular and square pyramids.
	Surface Area of Spheres	
		Solve problems involving surface area of spheres.

Unit	Lesson	Lesson Objectives
	Spherical and Cubic Volume Applications	
		Apply volume formulas, including those that evaluate perfect cubes, to find unknown measurements.
		Recognize perfect cubes.
		Solve a real-world problem utilizing the formula for volume of a sphere.
	Volume with Composite Figures	
		Apply formulas to find the volume of a composite figure constructed with cylinders, cones, and spheres.
		Recognize composite figures and identify the shapes that create the figure.
	Surface Area of Composite Figures	
		Calculate surface areas of composite figures.
Data Displays		
	Bar and Circle Graphs	
		Read and interpret bar graphs.
		Read and interpret circle graphs.
		Read tables.
	Describing Data on Dot Plots	
		Describe a data set as shown on a dot plot, using the center, spread, and overall shape.
	Representing Data Sets with Histograms	
		Describe a data set as shown on a histogram, using the center, spread, and overall shape.
		Display data on a histogram.
	Box Plots	
		Create a box plot to represent a set of data, given the summary statistics.
		Interpret a box plot.
	Interpreting Graphs	
		Analyze qualitative graphs.
		Create a graph to model a situation.
		Interpret information given in a graph.
	Constructing Scatterplots	
		Analyze a scatterplot.
		Classify dependent and independent variables.
		Create a scatterplot using a table of values.
Probability and Statistics		
	Finding the Mean	
		Calculate the mean of a set of data.
		Explain how the mean of a set of data is a balance point.
		Find a missing value in a set of data given the mean.

Unit	Lesson	Lesson Objectives
	Range and Interquartile Range	
		Define and find the interquartile range of a set of data.
		Define and find the range of a set of data.
		Describe the impact of outliers on the range and interquartile range.
	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.
	Expected Value	
		Calculate expected values.
		Use expected values to make decisions.
	Permutations and Combinations	
		Distinguish between permutation problems and combination problems.
		Solve problems involving permutations or combinations.
	Understanding Probability	
		Describe the probability of an event as a number between 0 and 1, which represents the likelihood of the event.
		Identify an event with a given probability as impossible, unlikely, likely, or certain.
		Use the fact that the sum of the probabilities of all possible outcomes is 1 to find the probabilities of complementary events.
	Probability of Compound Events	
		Find probabilities of dependent compound events using organized lists, tables, or tree diagrams.
		Find probabilities of independent compound events using organized lists, tables, or tree diagrams.
Linear, Polynomial, and Rational Expressions		
	Adding and Subtracting Expressions	
		Add algebraic expressions and use them to model real-world scenarios.
		Subtract algebraic expressions and use them to model real-world scenarios.
	Expanding Expressions	
		Identify equivalent expressions.
		Use the distributive property to expand and simplify algebraic expressions.
	Factoring Expressions	
		Find the greatest common factor of an algebraic expression.
		Rewrite algebraic expressions by factoring.
	Writing Expressions	
		Translate algebraic expressions into words.
		Translate words into algebraic expressions.

Unit	Lesson	Lesson Objectives
	Writing and Evaluating Expressions	
		Evaluate expressions for real-world situations.
		Write expressions to represent real-world situations.
	Addition and Subtraction of Polynomials	
		Perform addition and subtraction of polynomials.
	Multiplication of Polynomials	
		Perform multiplication of polynomials.
	Division of Polynomials	
		Use inverse operations to check the result of polynomial division.
		Use long division to find quotients of polynomials.
	Simplifying Expressions	
		Evaluate expressions using the order of operations and the field properties of real numbers.
		Identify parts of an algebraic expression.
		Simplify expressions using the order of operations and the field properties of real numbers.
	Factoring Polynomials Completely	
		Analyze polynomial expressions to factor them completely.
	Expressions in One Variable	
		Evaluate one-variable expressions.
		Identify parts of an expression.
		Interpret expressions that represent a quantity in terms of its context.
		Write expressions to represent scenarios.
	Modeling with Rational Functions	
		Model and solve real-world problems using rational functions.
	Adding and Subtracting Rational Expressions	
		Add and subtract rational expressions with a common denominator.
		Evaluate rational expressions for a given value.
		State values for which rational expressions are undefined.
	Multiplying and Dividing Rational Expressions	
		Perform multiplication and division of rational expressions.
	Adding and Subtracting Rational Expressions	
		Perform addition and subtraction of rational expressions.
		Simplify complex rational expressions containing sums or differences.
One-Variable Linear Equations		
	Solving Multistep Equations with Variables on Both Sides	
		Build a process for solving multistep linear equations with variables on both sides.
		Solve multistep linear equations with variables on both sides and verify the solutions.

Unit	Lesson	Lesson Objectives
	Solving Real-World Multistep Equations	
		Verify the solution to real-world linear equations.
		Write and solve multistep linear equations that represent real-world problems.
	Applying Linear Functions	
		Determine what the slope and *y* -intercept are and what they represent in real-world functional relationships.
		Evaluate inputs and outputs for linear equations in slope-intercept form.
		Use real-world scenarios of linear functions to write an equation in slope-intercept form.
	Solving Equations	
		Create multistep equations in one variable and use them to solve problems.
		Simplify and solve multistep equations.
	Solving Linear Systems Graphically	
		Classify systems of two-variable equations as dependent, independent, consistent, or inconsistent.
		Solve systems of two-variable linear equations graphically.
		Solve systems of two-variable linear inequalities.
	Solving Linear Systems by Elimination	
		Solve systems of two-variable linear equations using elimination.
	Solving Linear Systems by Substitution	
		Solve systems of two-variable linear equations using substitution.
One-Variable Linear Inequalities		
	Solving Two-Step Inequalities	
		Solve two-step inequalities in the real world and interpret the results.
		Solve two-step inequalities.
	Inequalities in the Real World	
		Write, solve, and graph inequalities to represent real-world situations.
	Writing Inequalities	
		Write inequalities from words, and vice-versa.
		Write inequalities to represent real-world situations.
Quadratic Equations		
	Solving Quadratic Equations by Factoring	
		Find real solutions for quadratic equations using the zero product property.
		Use key attributes of a quadratic function to solve word problems.
	Completing The Square	
		Find complex solutions to quadratic equations by completing the square.
		Recognize the pattern of a perfect-square trinomial as the square of a binomial.
		Use the square root property to solve equations.

Unit	Lesson	Lesson Objectives
	The Quadratic Formula	
		Find real and complex solutions of quadratic equations using the quadratic formula.
		Use the discriminant to determine the number and type of roots of a quadratic equation.
	Modeling with Quadratic Equations	
		Use quadratic equations to model and solve real-world problems.
Two-Variable Linear Equations		
	The Coordinate Plane	
		Graph and name points in Quadrant I.
		Identify the parts of the coordinate plane.
	Exploring Slope	
		Determine the value of the slope of a line from a table or a graph.
		Recognize the difference between positive slope, negative slope, no slope, and zero slope.
	Graphing Proportional Relationships	
		Graph a proportional relationship from tables and verbal descriptions.
		Identify the meanings of points on the graph of a proportional relationship and determine the characteristics of the graph of a proportional relationship.
	Linear Functions	
		Determine if a function is linear.
		Represent a linear relationship numerically, algebraically, and graphically.
Equations of Lines		
	Writing Linear Equations Given Two Points	
		Write a linear equation in slope-intercept form given two points.
	Point-Slope Form of a Line	
		Graph a line given its equation in point-slope form, identifying the slope and intercepts.
		Write the equation of a line given its slope and a point on the line in point-slope form, and express the relationship as a function.
	Slopes of Parallel and Perpendicular Lines	
		Use slopes to analyze polygons drawn in the coordinate plane.
		Use slopes to identify lines that are either parallel or perpendicular.
		Write an equation of a line that passes through a given point and is parallel or perpendicular to a given line.
Functions		
	Comparing Functions in the Real World	
		Analyze real-world linear relationships in order to make comparisons.
	Introduction to Functions	
		Determine if a real-world situation describes a functional relationship.
		Identify functions from tables, graphs, and equations.

Unit	Lesson	Lesson Objectives
	Evaluating Functions	
		Analyze a function represented by an equation, table, or graph to determine the output when given the input, and vice versa.
		Find input and output values of two functions graphed in the same coordinate plane.
		Write the inverse of a given linear function.
	Analyzing Graphs	
		Use the graph of a function to determine the key aspects, using interval notation where applicable.
	Analyzing Tables	
		Given a table of values for a continuous function, make predictions about the key features of the graph of the function.
	Graphing Polynomial Functions	
		Graph polynomial functions using key features.