Unit	Topic	Lesson	Lesson Objectives
Connecting Patterns and Functions			
	Measurement and Proportions		
		Ratios and Rates	
			Determine unit rates.
			Write ratios as fractions in simplest form.
		Using Proportions	
			Solve proportions.
			Use proportions to solve real-world problems.
		Converting Between Measurement Systems	
			Use a conversion factor to convert measurements between systems
		Unit Analysis	
			Apply rates to solve a problem
			Use proportions to solve problems
			Use unit or dimensional analysis to solve a problem
		Precision and Significant Digits	
			Indicate the precision of a measurement
			Use significant digits.
	Expressions		
		Use Variables to Represent Numbers	
			Evaluate algebraic expressions by using the order of operations.
			Translate written phrases into algebraic expressions.
		Properties of Real Numbers	
			Recognize the properties of real numbers
		Simplify Expressions	
			Simplify algebraic expressions by combining like terms.
			Simplify expressions by removing grouping symbols.
		Zero and Negative Exponents	
			Convert between scientific and standard notation
			Evaluate expressions with zero and negative exponents
			Simplify expressions with zero and negative exponents
		Multiply with Like Bases	
			Simplify algebraic expressions using the multiplication property of exponents
			Simplify numeric expressions using the multiplication property of exponents

Unit	Topic	Lesson	Lesson Objectives
		Divide with Like Bases	
			Simplify algebraic expressions using the division property of exponents
			Simplify numeric expressions using the division property of exponents
		A Quantity to a Power	
			Simplify expressions by raising a product to a power
			Simplify expressions by raising a quotient to a power
		Apply Laws of Exponents	
			Simplify expressions using laws of exponents
			Solve real-world problems with laws of exponents
Linear Equations			
	One-Variable Equations		
		Addition and Multiplication Properties of Equality	
			Justify steps used to solve an equation
			Solve equations by using the addition property of equality
			Solve equations by using the multiplication property of equality
		Two-Step Equations	
			Apply properties to solve two-step equations
			Verify a solution for an equation
		Equations with Like Terms	
			Apply properties to solve equations with like terms
			Verify a solution for an equation
		Equations with Variables on Both Sides	
			Apply properties to solve equations with the variable on both sides
			Verify a solution for an equation
		Equations as Mathematical Models	
			Judge the reasonableness of a solution
			Represent and solve real-world situations with equations
	Multi-Step Equations		
		Solve Equations Using the Distributive Property	
			Apply the distributive property to solve equations
			Determine if an equation has 0, 1, or an infinite number of solutions
			Determine if equations are equivalent
		Simplify and Solve Equations	
			Solve multi-step equations

Unit	Topic	Lesson	Lesson Objectives
			Verify a solution of an equation
		Translate and Solve Written Statements	
			Solve equations translated from written statements
			Translate written statements into equations
		Literal Equations	
			Evaluate the unknown variable in a literal equation
			Solve literal equations for a specific variable
		Model and Solve Problems with Multi-Step Equations	
			Judge the reasonableness of a solution
			Solve real-world problems using multi-step equations
		Break-Even Points	
			Determine the break-even point of a linear system
			Interpret break-even points on a graph
			Solve a system of two linear equations
Functions and Relationships			
	Functions		
		Relations and Functions	
			Determine if a relation is a function
			Determine the domain and range of a relation
			Represent relations as sets of ordered pairs, tables, mappings, and graphs
		Function Notation	
			Evaluate functions
			Identify the independent and dependent variables of a function
		Function Operations	
			Perform operations with functions
		Graphing Linear Functions	
			Find ordered pairs that are solutions of linear equations.
			Graph linear equations.
		Graph Functions	
			Draw graphs of functions
			Interpret graphs of functions
		Graphing Linear Equations Using Intercepts	
			Find the x- and y-intercepts of graphs.
			Graph linear equations using the x- and y-intercepts.

Unit	Topic	Lesson	Lesson Objectives
		Graphing Nonlinear Functions	
			Graph absolute value functions.
			Graph quadratic functions.
	Represent Relationships		
		Find a Pattern in Sequences	
			Find patterns to complete sequences using function tables.
		Problem Solving: Write an Equation Using Variables	
			Solve problems by writing equations.
		Write Function Rules	
			Write function rules from given data or graphs
			Write function rules to model real-world situations
		Solving an Equation	
			Solve an equation numerically and graphically
			Solve an equation using algebra techniques
		Parent Functions	
			Associate a parent function with a given graph or data
			Determine the domain and range of parent functions
		Shifts of Functions	
			Determine how changes to the rule of a function correspond to the translation of its graph
Linear Functions			
	Linear Relationships		
		Standard Form of a Linear Equation	
			Determine solutions of a linear equation given in standard form
			Graph a linear equation given in standard form
			Identify a linear equation in standard form
			Use the properties of equality to write a linear equation in standard form
		Slope	
			Calculate the slope of a line given two points
			Determine if a line has a positive, negative, zero, or no slope
			Graph a line given its slope and a point on the line
			Relate slope to the rate of change
		Average Rate of Change	
			Determine the average rate of change
			Understand the use of delta notation

Unit	Topic	Lesson	Lesson Objectives
		Slope-Intercept Form	
			Convert between the standard and slope-intercept forms of linear equations
			Graph a line from a given equation
			Identify the slope and y-intercept of a line from a given equation or graph

Unit	Topic	Lesson	Lesson Objectives
	Write Linear Equations		
		Write Equations in Slope-Intercept Form	
			Write the equation of a line given its graph
			Write the equation of a line given its slope and y-intercept
			Write the equation of a line given two points on the line
		Point-Slope Form	
			Write the equation of a line given its slope and a point on the line.
		Parallel Lines	
			Determine if lines are parallel from their given equations
			Write the equation of a line given the equation of another line to which it is parallel and a point on that line
		Perpendicular Lines	
			Determine if lines are perpendicular from their given equations
			Write the equation of a line given the equation of another line to which it is perpendicular and a point on that line
		Equations of Lines	
			Write linear equations in various forms and from a variety of given information
Modeling Linear Functions			
	Modeling Linear Functions		
		Mathematical Modeling	
			Develop a function model
			Identify a mathematical model
			Recognize patterns and trends between two variables using tables as models
			Solve problems using formulas as a model
		Slope-Intercept Form	
			Develop the slope-intercept model of an equation of a line
			Identify situations modeled by an equation
			Use intercepts of a graph
			Use the slope-intercept formula to determine intercepts
		Scatterplots	
			Determine the correlation in a relationship
			Write an equation for the line of best fit and use it to make predictions
		Scatterplots	
			Determine the reasonableness of a model and the goodness of fit.
			Use linear models to approximate data sets and make predictions.

Unit	Topic	Lesson	Lesson Objectives
		Data Distribution	
			Determine measures of central tendency
			Organize data with frequency tables, dotplots, and histograms
			Recognize symmetric and skewed frequency distributions
		Measures of Central Tendency	
			Calculate measures of central tendency
			Determine the effects of variability on measures of central tendency
		Variability	
			Measure the variability of frequency distributions
			Read and understand box-and-whisker plots
			Use standard deviation to understand mean
		Probability and Two-Way Tables	
			Calculate conditional probabilities from data displayed in a two-way table
			Use a two-way table to determine if two events are independent
Absolute Value and Inequalities			
	Inequalities		
		Properties of Inequality	
			Apply the addition and multiplication properties of inequality
		Write and Solve Inequalities	
			Graph the solution sets of inequalities
			Solve one-variable inequalities
			Translate written statements into inequalities
		Two-Step Inequalities	
			Graph the solution sets of inequalities
			Solve two-step inequalities in one variable
		Multi-Step Inequalities	
			Graph the solution sets of inequalities
			Solve multi-step inequalities in one variable
		Compound Inequalities	
			Graph the solution sets of compound inequalities
			Solve compound inequalities
		Graph Linear Inequalities	
			Graph linear inequalities in two variables
			Model and solve real-world problems involving linear inequalities

Unit	Topic	Lesson	Lesson Objectives
	Absolute Value Equations and Inequalities		
		Absolute Value Equations in One Variable	
			Solve absolute value equations
		Absolute Value Inequalities in One Variable	
			Solve and graph absolute value inequalities in one variable
		Multi-Step Absolute Value Inequalities in One Variable	
			Solve and graph absolute value inequalities in one variable
		Model and Solve Problems with Absolute Value Inequalities	
			Judge the reasonableness of a solution
			Model and solve real-world problems using absolute value inequalities
Linear Systems			
	Linear Systems		
		Solve a Linear System Graphically	
			Apply a system of equations to solve a one-variable linear equation graphically
			Determine if a linear system of equations is dependent, independent, consistent, or inconsistent
			Identify the graphical solution of a system of linear equations
		Solve a Linear System by Substitution	
			Determine if a point is a solution of a linear system
			Solve a system of two linear equations in two variables using substitution
		Solve a Linear System by Elimination	
			Determine if a point is a solution of a linear system
			Solve a system of two linear equations in two variables using elimination
		Model and Solve Problems with Linear Systems	
			Use a system of linear equations to model and solve real-world problems
		Systems of Linear Inequalities	
			Determine if a point is a solution of a system of linear inequalities
			Identify the graphical solution of a system of linear inequalities

Unit	Topic	Lesson	Lesson Objectives
Sequences and Functions			
	Sequences and Functions		
		Arithmetic Sequences	
			Extend and find the nth term of an arithmetic sequence
			Recognize arithmetic sequences
			Write formulas for arithmetic sequences
		Geometric Sequences	
			Extend and find the nth term of a geometric sequence
			Recognize geometric sequences
			Write formulas for geometric sequences
		Other Sequences	
			Find patterns in sequences.
		Recursive Formulas	
			Extend and find the nth term of a recursively defined sequence
		Growth and Decay Factors	
			Apply growth and decay factors involving percents of increase and decrease
			Define growth and decay factors
			Determine growth and decay factors from percents of increase and decrease
Exponential Functions and Equations			
	Rational Exponents and Radicals		
		Laws of Exponents	
			Apply the properties of whole-number exponents to generate equivalent expressions.
		Rational Exponents	
			Simplify expressions with rational exponents
		Simplify Radicals	
			Express radicals in simplest form
		Add and Subtract Radicals	
			Simplify sums and differences involving radicals
		Multiply Radicals	
			Simplify products involving radicals
		Divide Radicals	
			Simplify quotients involving radicals

Unit	Topic	Lesson	Lesson Objectives
		Operations on Rational and Irrational Numbers	
			Explain why the product of a nonzero rational number and an irrational number is irrational.
			Explain why the sum and product of two rational numbers are rational.
			Explain why the sum of a rational number and an irrational number is irrational.
	Exponential Functions and Equations		
		Exponential Growth and Decay	
			Use tables, rules and graphs with functions modeling decay.
			Use tables, rules, and graphs with functions modeling growth.
		Exponential Functions	
			Evaluate exponential expressions
			Graph exponential functions
		Growth and Decay	
			Identify data that displays exponential behavior
			Solve problems involving exponential growth and decay
		Rewriting Exponential Functions	
			Use alternative forms of an exponential function to highlight different information about that function and the real-world situation it models.
			Write exponential functions and expressions in equivalent forms, using the properties of exponents to justify steps.
Linear and Exponential Models			
	Linear and Exponential Models		
		Linear Functions	
			Determine if a function is linear.
			Represent a linear relationship numerically, algebraically, and graphically.
		Linear Growth vs. Exponential Growth	
			Use tables and graphs to compare the growth of an exponential function vs. a linear function over equal intervals.
			Use tables and graphs to show that exponential functions grow by equal factors over equal intervals.
		Exponential Functions	
			Graph exponential functions from data and equations
			Graph exponential functions from symbolic rules
			Recognize an exponential function as a rule for apply growth or decay factors
		Use Exponential Functions	
			Determine growth and decay factors for exponential functions represented by a table of values or an equation
			Determine the doubling and halving time
			Graph exponential functions defined by y = abx

Unit	Topic	Lesson	Lesson Objectives
		Population Growth	
			Determine annual growth or decay rate of an exponential function represented by a table of values or an equation
			Graph an exponential function having equation y = a(1 ± r)2
		Equations of Exponential Functions	
			Determine the equation of an exponential function that best fits the given data
			Determine whether a linear or exponential model best fits given data
			Make predictions using an exponential regression equation
Quadratic Functions			
	Quadratic Functions		
		Quadratic Equations in Standard Form	
			Determine a parabola's line of symmetry, vertex, and whether it opens up or down
			Graph quadratic functions
			Recognize a quadratic function
		Intercepts and Zeros	
			Graph quadratic functions
			Use the zero product property to find the zeros of a function and relate to the intercepts of the graph
			Use the zeros of a quadratic function to find the vertex of the graph of the function
		Quadratic Equations	
			Explore the role of a, b and c as it relates to the graph of quadratic equation
			Identify functions of the form y = ax2+bx+c as quadratic functions
		Parabolas	
			Determine the axis of symmetry of a parabola
			Determine the intercepts of a parabola
			Determine the vertex of a parabola
			Identify the domain and range
			Interpret the meaning of the vertex and intercepts of a parabola
		Quadratic Equations in Vertex Form	
			Determine the effects on the graph by changing the values of a, h, and k in the vertex form of a quadratic function
			Write a quadratic equation for a given parabola
		Convert Between Standard and Vertex Form	
			Convert a quadratic equation from standard to vertex form

Unit	Topic	Lesson	Lesson Objectives
		Comparing Exponential, Linear, and Quadratic Growth	
			Use tables and graphs to compare the growth of an exponential function to the growth of a linear function over equal intervals.
			Use tables and graphs to compare the growth of an exponential function to the growth of a quadratic or a polynomial function over equal intervals.
			Use tables and graphs to show that exponential functions grow by equal factors over equal intervals.
		Making Connections: Daredevil Danny	
Polynomials			
	Polynomial Operations		
		Add and Subtract Polynomials	
			Add and subtract polynomials
			Classify polynomials
		Multiply and Divide by a Monomial	
			Multiply and divide polynomials by monomials
		Multiply Polynomials	
			Multiply polynomials
		Special Products	
			Identify special products of binomials
		Divide Polynomials	
			Divide polynomials
		Simplify Polynomial Expressions	
			Simplify polynomial expressions
	Factoring Polynomials		
		The Greatest Common Factor	
			Determine the greatest common factor
			Use the greatest common factor to factor polynomials
		Factor by Grouping	
			Factor polynomials by grouping
		Factor Trinomials with Leading Coefficient of One	
			Factor trinomials with a leading coefficient of one
		Factor Trinomials with a Leading Coefficient Other than One	
			Factor trinomials with a leading coefficient other than one
		Special Cases	
			Factor perfect square trinomials
			Factor the difference of two squares

Unit	Topic	Lesson	Lesson Objectives
		Factoring Polynomials	
			Apply various factoring methods to completely factor a polynomial
		Simplifying Polynomial Expressions	
			Simplify expressions involving operations with polynomials.
Quadratic Equations			
	Quadratic Equations		
		The Squaring and Square Root Properties	
			Solve equations using the square root property of equality
			Solve equations using the squaring property of equality
		Solve by Factoring	
			Solve quadratic equations by using the zero product property
		Complete the Square	
			Solve quadratic equations by completing the square
		The Quadratic Formula	
			Use the discriminant to determine the nature of the roots of a quadratic equation
			Use the quadratic formula to solve equations with rational roots
		Irrational Roots	
			Use the quadratic formula to solve equations with irrational roots
		Model and Solve Problems with Quadratics	
			Model and solve real-world problems using quadratic equations
		Model Problems with Quadratic Functions	
			Model and solve real-world problems using quadratic functions
			Solve a system of two equation where one is quadratic