

Unit	Topic	Lesson	Lab	Objective	Objective	Objective	Objective
<b>Algebra Tools</b>							
		<b>Order of Operations</b>	Order of Operations	Evaluate numerical expressions by using the order of operations.	Evaluate algebraic expressions by using the order of operations.		
		<b>Variables, Expressions and Equations</b>	Using Algebraic Expressions	Use variables to represent unknown quantities.	Represent real-world situations with equations and solve by guess-and-check.		
		<b>Identity and Equality Properties</b>		Recognize the properties of identity and equality.	Use the properties of identity and equality.		
		<b>Distributive Property</b>		Use the Distributive Property to evaluate expressions.	Use the Distributive Property to simplify expressions.		
		<b>Commutative and Associative Properties</b>		Recognize the Commutative and Associative Properties.	Use the Commutative and Associative Properties to simplify expressions.		
		<b>Using Differences to Identify Patterns</b>	Finding Patterns	Use differences to identify patterns in number sequences.	Make predictions by using patterns in number sequences.		
		<b>Graphs and Functions</b>	Linear Functions	Interpret graphs of functions.	Draw graphs of functions.		
		<b>Graphing with Coordinates</b>	Points in the Coordinate Plane - Activity A	Plot points and lines on a coordinate plane.			
		<b>Representing Linear Patterns</b>	Distance-Time Graphs	Represent linear patterns with equations.	Represent linear equations with graphs.		
		<b>Logical Reasoning</b>	Conditional Statement	Identify the hypothesis and conclusion in a conditional statement.	Use a counterexample to show that an assertion is false.		
<b>Real Numbers</b>							
		<b>Real Numbers and Absolute Value</b>	Real Number Line - Activity B	Compare real numbers.	Simplify expressions involving opposites and absolute value.		
		<b>Rational Numbers on the Number Line</b>	Comparing and Ordering Integers	Graph rational numbers on a number line.	Find absolute values of rational numbers.		
		<b>Adding and Subtracting Rational Numbers</b>	Adding and Subtracting Integers	Add integers and rational numbers.	Subtract integers and rational numbers.		

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		<b>Multiplying Rational Numbers</b>	Multiplying Fractions	Multiply integers.	Multiply rational numbers.		
		<b>Dividing Rational Numbers</b>	Dividing Fractions	Divide integers.	Divide rational numbers.		
		<b>Adding and Subtracting Expressions</b>		Use the Distributive Property to combine like terms.	Simplify expressions with several variables.		
		<b>Multiplying and Dividing Expressions</b>		Multiply expressions containing variables.	Divide expressions containing variables		
		<b>Square Roots and Real Numbers</b>	Ordering and Approximating Square Roots	Find square roots.	Classify and order real numbers.		
<b>Solving Equations</b>							
		<b>Solving Equations by Using Addition and Subtraction</b>	Modeling One-Step Equations - Activity B	Solve equations by using addition.	Solve equations by using subtraction.		
		<b>Solving Equations by Using Multiplication and Division</b>	Dividing Mixed Numbers	Solve equations by using multiplication.	Solve equations by using division.		
		<b>Solving Multi-Step Equations</b>	Modeling and Solving Two-Step Equations	Solve problems by working backward.	Solve equations involving more than one operation.		
		<b>Using the Distributive Property</b>	Solving Two-Step Equations	Use the Distributive Property to solve equations.	Solve real-world problems by using multistep equations.		
		<b>Solving Equations with the Variable on Each Side</b>		Use substitution to solve equations.	Solve equations with the variable on each side.	Solve equations involving grouping symbols on each side of the equation.	
		<b>Absolute Value Equations and Inequalities</b>	Inequalities Involving Absolute Values	Solve absolute-value equations.	Solve absolute-value inequalities, and express the solution as a range of values on a number line.		
		<b>Graphing Absolute Value Equations</b>		Translate the graph of an absolute value equation.	Graph an absolute value equation quickly.		
		<b>Using Formulas and Literal Equations</b>	Solving Formulas for any Variable	Solve literal equations for a specific variable.	Use formulas to solve problems.		

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		<b>Ratios and Proportions</b>	Proportions and Common Multipliers	Determine whether two ratios form a proportion.	Solve proportions.		
		<b>Percent of change</b>	Percent of Change	Find percents of increase and decrease.	Solve problems involving percents of change.		
<b>Solving Inequalities</b>							
		<b>Inequalities and Their Graphs</b>		Identify solutions of inequalities.	Graph and write inequalities.		
		<b>Solving Inequalities</b>	Solving Linear Inequalities using Addition and Subtraction	State and use symbols of inequality.	Solve inequalities that involve addition and subtraction.		
		<b>Solving Inequalities Using Multiplication and Division</b>	Solving Inequalities Using Multiplication and Division	Use multiplication to solve inequalities.	Use division to solve inequalities.		
		<b>Multistep Inequalities</b>		State and apply the Multiplication and Division Properties of Inequality.	Solve multistep inequalities in one variable.		
		<b>Compound Inequalities</b>	Compound Inequalities	Solve and graph inequalities containing <i>and</i> .	Solve and graph inequalities containing <i>or</i> .		
		<b>Solving Open Sentences Involving Absolute Value</b>	Inequalities Involving Absolute Values	Solve absolute-value inequalities, and express the solution as a range of values on a number line.			
		<b>Graphing Inequalities in Two Variables</b>	Linear Inequalities in Two Variables - Activity A	Graph inequalities on the coordinate plane.	Solve real-world problems involving linear inequalities.		
<b>Functions</b>							
		<b>Graphing/Coordinate plane</b>	Points in the Coordinate Plane - Activity B	Locate points on the coordinate plane.	Graph points on a coordinate plane.		
		<b>Relating Graphs to Events</b>	Distance-Time Graphs	Interpret, sketch, and analyze graphs from situations.			
		<b>Relations</b>	Introduction to Functions	Represent relations as sets of ordered pairs, tables, mappings, and graphs.	Find the inverse of a relation.		

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		Equations as Relations		Use an equation to determine the range for a given domain.	Graph the solution set for a given domain.		
		Graphing Linear Equations		Determine whether an equation is linear.	Graph linear equations.		
		Functions		Determine whether a relation is a function.	Find function values.		
		Function Rules, Tables and Graphs	Using Tables, Rules and Graphs	Model functions using rules, tables, and graphs.			
		Writing a Function Rule	Introduction to Functions	Write a function rule given a table or a real-world situation.			
<b>Writing/Graphing Equations</b>							
		Slope	Slope - Activity A	Find the slope of a line.	Use rate of change to solve problems.		
		Slope and Direct Variation	Direct Variation	Write and graph direct variation equations.	Solve problems involving direct variation.		
		Slope-Intercept Form	Slope-Intercept Form of a Line - Activity A	Write and graph linear equations in slope-intercept form.	Model real-world data with an equation in slope-intercept form.		
		Writing Equations in Slope-Intercept Form	Slope-Intercept Form of a Line - Activity B	Write an equation of a line given the slope and one point on a line.	Write an equation of a line given two points on the line.		
		Standard and Point-Slope Form	Point-Slope Form of a Line - Activity A	Define and use the standard form for a linear equation.	Define and use the point-slope form for a linear equation.		
		Parallel and Perpendicular Lines		Determine whether lines are parallel.	Determine whether lines are perpendicular.		
		Scatter Plots and Equations of Lines	Scatter Plots - Activity B	Write an equation for a trend line and use it to make predictions.	Write the equation for a line of best fit and use it to make predictions.		
<b>Systems of Equations and Inequalities</b>							
		Graphing Systems of Equations	Solving Linear Systems by Graphing	Graph systems of equations.	Solve a system of equations by inspecting a graph.		
		Solving Systems Using Substitution		Solve systems using substitution.			

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		<b>Solving Systems Using Elimination</b>		Solve systems by adding or subtracting.	Multiply first when solving systems.		
		<b>Consistent and Inconsistent Systems</b>		Identify consistent and inconsistent systems of equations.	Identify dependent and independent systems of equations.		
		<b>Applications of Linear Systems</b>	Modeling Linear Systems - Activity B	Write systems of linear equations.			
		<b>Linear Inequalities</b>	Systems of Linear Inequalities (Slope-intercept form) - Activity A	Graph linear inequalities.	Write and use linear inequalities when modeling real-world situations.		
		<b>Systems of Linear Inequalities</b>	Systems of Linear Inequalities (Slope-intercept form) - Activity B	Solve systems of linear inequalities by graphing.	Model real-world situations using systems of linear inequalities.		
		<b>Classic Puzzles in Two Variables</b>		Solve traditional math puzzles in two variables.			
<b>Exponential Functions</b>							
		<b>Multiplying Monomials</b>	Exponents and Power Rules	Define exponents and powers.	Find products of powers.	Simplify products of monomials.	Find the power of a power.
		<b>Division Properties of Exponents</b>	Dividing Exponential Expressions	Divide powers with the same base.	Raise a quotient to a power.		
		<b>Zero and Negative Exponents</b>	Multiplying Exponential Expressions	Simplify expressions with zero and negative exponents.	Evaluate exponential expressions.		
		<b>Scientific Notation</b>		Write numbers in scientific and standard notation.	Use scientific notation.		
		<b>Exponential Functions</b>	Exponential Functions - Activity A	Graph exponential functions.	Identify data that displays exponential behavior.		
		<b>Growth and Decay</b>	Exponential Growth and Decay - Activity B	Solve problems involving exponential growth.	Solve problems involving exponential decay.		
<b>Polynomials/Factoring</b>							
		<b>Adding and Subtracting Polynomials</b>	Addition and Subtraction of Polynomials	Describe polynomials.	Add and subtract polynomials.		

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		<b>Multiplying Binomials</b>		Find products of binomials using the FOIL method.	Mentally simplify special products of binomials.		
		<b>Factors and Greatest Common Factors</b>	Finding Factors with Area Models	Find prime factorizations of integers and monomials.	Find the greatest common factors of integers and monomials.		
		<b>Factoring Polynomials using the Distributive Property</b>	Quadratics in Polynomial Form - Activity B	Factor polynomials by using the Distributive Property.	Solve quadratic equations of the form $ax^2 + bx = 0$ .		
		<b>Factoring Trinomials (<math>x^2 + bx + c</math>)</b>	Modeling the Factorization of $x^2+bx+c$	Factor trinomials of the form $x^2 + bx + c$ .	Solve equations of the form $x^2 + bx + c = 0$ .		
		<b>Factoring Trinomials (<math>ax^2 + bx + c</math>)</b>	Modeling the Factorization of $ax^2+bx+c$	Factor trinomials of the form $ax^2 + bx + c$ .	Solve equation of the form $ax^2 + bx + c = 0$ .		
		<b>Factoring Special Polynomials</b>	Factoring Special Products	Factor perfect square trinomials.	Factor the difference of two squares.		
		<b>Solving Equations by Factoring</b>	Quadratics in Factored Form	Find the zeros of a function.	Solve equations by factoring.		
<b>Quadratic Equations/Functions</b>							
		<b>Graphing Parabolas</b>	Quadratics in Polynomial Form - Activity A	Discover how adding a constant to the parent function $y = x^2$ affects the graph of the function.	Use the zeros of a quadratic function to find the vertex of the graph of the function.		
		<b>Completing the Square</b>		Form a perfect-square trinomial from a given quadratic binomial.	Write a given quadratic function in vertex form.		
		<b>Solving Equations Using Square Roots</b>		Solve equations of the form $ax^2 = k$ .	Solve equations of the form $ax^2 = k$ where $x$ is replaced by an algebraic expression.		
		<b>Solving Equations in the Form <math>x^2 + bx + c = 0</math></b>		Solve quadratic equations by completing the square or by factoring.			

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		<b>The Quadratic Formula</b>	Roots of a Quadratic	Use the quadratic formula to find solutions to quadratic equations.	Use the quadratic formula to find the zeros of a quadratic function.	Evaluate the discriminant to determine how many real roots a quadratic equation has and whether it can be factored.	
		<b>Graphing Quadratic Inequalities</b>	Quadratic Inequalities - Activity A	Solve and graph quadratic inequalities and test solution regions.			
		<b>Choosing a Linear, Quadratic or Exponential Model</b>		Choose a linear, quadratic, or exponential model for data.			
<b>Radical Expressions and Triangles</b>							
		<b>Simplifying Radical Expressions</b>	Simplifying Radicals - Activity A	Simplify radical expressions using the Product Property of Square Roots.	Simplify radical expressions using the Quotient Property of Square Roots.		
		<b>Operations with Radical Expressions</b>	Operations with Radical Expressions	Add and subtract radical expressions.	Multiply radical expressions.		
		<b>Radical Equations</b>		Solve radical equations.	Solve radical equations with extraneous solutions.		
		<b>Graphing Square Root Functions</b>	Functions Involving Square Roots	Graph square root functions.	Translate graphs of square root functions.		
		<b>Rational Exponents</b>		Find roots that are not square roots.	Express roots using fractions as exponents.		
		<b>Pythagorean Theorem</b>	Pythagorean Theorem - Activity B	Find a side length of a right triangle given the lengths of its other two sides.	Apply the Pythagorean theorem to real-world problems.		
		<b>Distance Formula</b>	Distance Formula - Activity B	Use the distance formula to find the distance between two points in a coordinate plane.	Determine whether a triangle is a right triangle.	Apply the midpoint formula.	

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		<b>Special Right Triangles</b>		Develop a formula for the length of the hypotenuse in a $45^\circ$ - $45^\circ$ - $90^\circ$ triangle.	Develop a formula for the length of the longer leg of a $30^\circ$ - $60^\circ$ - $90^\circ$ triangle.		
		<b>Geometric Properties</b>	Circles	Define and use the equation of a circle.	Use the coordinate plane to investigate the diagonals of a rectangle and the midsegment of a triangle.		
		<b>Tangent Functions</b>	Tangent Ratio	Identify and use the tangent ratio in a right triangle.	Find unknown side and angle measures in right triangles.		
		<b>The Sine and Cosine Functions</b>	Sine and Cosine Ratios - Activity A	Define the sine and cosine ratios in a right triangle.	Find unknown side and angle measures in right triangles.		
<b>Rational Expressions/Equations</b>							
		<b>Inverse Variation</b>	Direct and Inverse Variation	Solve inverse variations.	Compare direct and inverse variation.		
		<b>Graphing Rational Functions</b>	Rational Functions	Graph rational functions.	Identify types of functions.		
		<b>Simplifying Rational Expressions</b>	General Form of a Rational Function	Simplify rational functions.			
		<b>Multiplying and Dividing Rational Expressions</b>		Multiply rational expressions.	Divide rational expressions.		
		<b>Dividing Polynomials</b>		Divide polynomials.			
		<b>Adding and Subtracting Rational Expressions</b>		Add and subtract rational expressions with like denominators.	Add and subtract rational expressions with unlike denominators.		
		<b>Solving Rational Equations</b>		Solve rational equations.	Solve proportions.		
		<b>Mixed Expressions and Complex Fractions</b>		Simplify mixed expressions.	Simplify complex fractions.		
<b>Probability</b>							

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		<b>Introduction to Probability</b>	Probability Simulations	Find the experimental probability that an event will occur.			
		<b>Theoretical Probability (outcomes)</b>	Geometric Probability - Activity A	List or describe the sample space of an experiment.	Find the theoretical probability of a favorable outcome.		
		<b>Counting the Elements of Sets</b>		Find the union and intersection of sets.	Count the elements of sets.	Apply the Addition of Probabilities Principle.	
		<b>Permutations and Combinations (Fundamental Counting Principle)</b>	Permutations and Combinations	Determine probabilities using permutations.	Determine probabilities using combinations.		
		<b>Independent Events</b>	Compound Independent and Dependent Events	Find the probability of independent events.			
		<b>Simulations</b>	Theoretical and Experimental Probability	Design and perform simulations to find experimental probabilities.			
<b>Statistics</b>							
		<b>Measures of Central Tendency</b>	Mean, Median and Mode	Find the mean, median, mode, and range of a data set.	Represent data with frequency tables.		
		<b>Sampling and Bias</b>	Populations and Samples	Identify various sampling techniques.	Recognize a biased sample.		
		<b>Histograms</b>	Histograms	Interpret data displayed in histograms.	Display data in histograms.		
		<b>Measures of Variation</b>	Scatter Plots - Activity B	Find the range of a set of data.	Find the quartiles and interquartile range of a set of data.		
		<b>Box-and-Whisker Plots</b>	Box-and-Whisker Plots	Organize and use data in box-and-whisker plots.	Organize and use data in parallel box-and-whisker plots.		
		<b>Introduction to Matrices</b>	Translations	Organize data in matrices.	Solve problems by adding or subtracting matrices or by multiplying by a scalar.		
<b>Functions and Transformations</b>							

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		<b>Graphing Functions and Relations</b>	Introduction to Functions	Use models to understand functions and relations.	Evaluate functions by using function rules.	Identify the parent functions of some important families of functions.	
		<b>Translations</b>	Translating and Scaling Functions	Describe how changes to the rule of a function correspond to the translation of its graph.			
		<b>Stretches and Compressions</b>	Dilations	Describe how changes to the rule of a function stretch or compress its graph.			
		<b>Reflections</b>	Reflections	Describe how a change to the rule of a function corresponds to a reflection of its graph.			
		<b>Combining Transformations</b>	Rotations, Reflections and Translations	Study a real world application of transformed functions.	Graph functions that involve more than one transformation.		
		<b>Arithmetic Sequences</b>	Arithmetic Sequences	Recognize arithmetic sequences.	Extend and write formulas for arithmetic sequences.		
		<b>Geometric Sequences</b>	Geometric Sequences	Recognize and extend geometric sequences.	Find geometric means.		