Unit	Lesson	Lesson Objectives
Representing Relationships		
	Quantitative Reasoning	
		Describe a quantitative relationship shown in a table or graph, including graphs without scales.
		Interpret a graph given with or without a scale to determine the quantitative relationship it describes.
	Dimensional Analysis	
		Use dimensional analysis to convert units and compare quantities, attending to limitations on the unit of measurement.
	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.
	Equations in One Variable	
		Create two-step, one-variable linear equations to model problems.
		Explain the steps used to solve a two-step, one-variable linear equation.
		Solve two-step, one-variable linear equations and simple absolute value equations, pointing out solutions that are viable or not viable in a modeling context.
	Inequalities in One Variable	
		Create two-step, one-variable linear inequalities to model problems.
		Explain the steps used to solve a two-step, one-variable linear inequality.
		Solve two-step, one-variable linear inequalities, pointing out solutions that are viable or not viable in a modeling context.
	Writing and Solving Equations in Two Variables	
		Determine a two-variable linear equation that represents a scenario, identifying constraints on the variables in terms of the context.
		Solve for an unknown quantity in a two-variable linear equation, given one of the values.
	Writing and Graphing Equations in Two Variables	
		Construct a table of values and a graph for a two-variable linear equation that models a situation, pointing out solutions that are viable or not viable based on the context.
		Interpret graphs and rates by examining the quantities represented by each axis.
		Write a two-variable linear equation to model a quantitative relationship, describing the constraints of the model based on the context.
	Performance Task: Tablet Time	

Unit	Lesson	Lesson Objectives
Linear Functions		
	Introduction to Linear Functions	
		Calculate the rate of change of a function and, if constant, the initial value of the function.
		Determine if a relationship is linear by analyzing the rate of change.
	Slope of a Line	
		Determine the slope of a line from a graph, table of values, or ordered pairs.
		Identify if the slope of a linear relationship is zero, positive, negative, or undefined.
		Interpret slope in the context of real-world scenarios.
	Slope-Intercept Form of a Line	
		Analyze how a change in a parameter of a linear function affects its graph or the scenario it represents.
		Identify the slope and y-intercept of a linear function, and use them to graph the function.
		Write a linear function, in slope-intercept form, for a given relationship.
	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.
	Writing Linear Equations	
		Use linear models to solve problems.
		Write two-variable linear equations in different forms using varying pieces of information about the relationships.
	Special Linear Relationships	
		Determine if a relationship is a direct variation.
		Find the constant of variation in a direct variation.
		Write an equation for a direct variation.
		Write recursive and explicit rules for arithmetic sequences using function notation.
Linear Equations and Inequalities		
	Solving Linear Equations: Variable on One Side	
		Create one-variable linear equations, having the variable on one side only, to model and solve problems.
		Determine the input value that produces the same output value for two functions from a table or graph.
		Explain the steps used to solve a one-variable linear equation having the variable on one side only.
		Solve one-variable linear equations having the variable on one side only, pointing out solutions that are viable or not viable in a modeling context.
	Solving Linear Equations: Variables on Both Sides	
		Create one-variable linear equations, having the variable on both sides, to model and solve problems.
		Explain the steps used to solve a one-variable linear equation having the variable on both sides.
		Solve one-variable linear equations having the variable on both sides using tables, graphs, or algebra, pointing out solutions that are viable or not viable in a modeling context.

Unit	Lesson	Lesson Objectives
	Solving Linear Equations: Distributive Property	
		Create one-variable linear equations involving the distributive property to model and solve problems.
		Determine if a one-variable linear equation has zero, one, or infinite solutions.
		Solve one-variable linear equations involving the distributive property.
	Solving Mixture Problems	
		Use a table to organize information given in mixture problems.
		Write and solve one-variable linear equations to model and solve mixture problems.
	Solving Rate Problems	
		Use a table to organize information given in time-distance-rate and work problems.
		Write and solve one-variable linear equations to model and solve time-distance-rate and work problems.
	Literal Equations	
		Rearrange a literal equation to highlight a quantity of interest and use it to solve problems.
	Solving Absolute Value Equations	
		Create absolute value equations to model and solve problems.
		Solve absolute value equations using tables or algebra, pointing out solutions that are viable or not viable in a modeling context.
	Solving One-Variable Inequalities	
		Explain the steps used to solve a multistep one-variable linear inequality.
		Graph the solution sets of one-variable linear inequalities.
		Solve multistep one-variable linear inequalities.
	Introduction to Compound Inequalities	
		Relate the solution set of a compound inequality to its graph.
		Write compound inequalities to model problems.
	Solving Compound Inequalities	
		Create one-variable compound linear inequalities to model and solve problems.
		Solve one-variable compound inequalities, pointing out solutions that are viable or not viable in a modeling context, and graph the solutions.
Systems of Equations and Inequalities		
	Introduction to Systems of Linear Equations	
		Create a system of linear equations to model a problem.
		Interpret the solution of a system of linear equations in a modeling context.
		Solve a system of linear equations graphically, using technology as a tool for finding the solution, when appropriate.
	Solving Systems of Linear Equations: Graphing	
		Analyze a system of linear equations to determine if it has one solution, no solution, or infinitely many solutions.
		Use technology to find or approximate the solution of a system of linear equations graphically.

Unit	Lesson	Lesson Objectives
	Solving Systems of Linear Equations: Substitution	
		Interpret the solution of a system of linear equations in a modeling context.
		Solve a system of linear equations using substitution.
	Solving Systems: Introduction to Linear Combinations	
		Interpret the solution of a system of linear equations in a modeling context.
		Solve systems of linear equations using linear combinations, limiting the systems to those that do not require multiples of both equations.
		Verify that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.
	Solving Systems of Linear Equations: Linear Combinations	
		Interpret the solution of a system of linear equations in a modeling context.
		Solve a system of linear equations using linear combinations.
	Modeling with Systems of Linear Equations	
		Create a system of linear equations to model a problem.
		Interpret the solution of a system of linear equations in a modeling context.
	Graphing Two-Variable Linear Inequalities	
		Relate the graph of a two-variable linear inequality to its algebraic representation.
	Modeling with Two-Variable Linear Inequalities	
		Create a two-variable linear inequality to model a problem.
		Graph the solutions to a two-variable linear inequality.
		Interpret the solutions of a two-variable linear inequality in a modeling context.
	Solving Systems of Linear Inequalities	
		Determine a system of two-variable linear inequalities given a solution set.
		Graph a system of two-variable linear inequalities.
		Identify solutions of a system of two-variable linear inequalities.
	Modeling with Systems of Linear Inequalities	
		Create a system of two-variable linear inequalities to model a problem.
		Graph the solutions to a system of two-variable linear inequalities.
		Interpret the solutions to a system of two-variable linear inequalities in a modeling context.

Unit	Lesson	Lesson Objectives
Nonlinear Functions		
	Linear Piecewise Defined Functions	
		Evaluate a piecewise-defined function that is defined by linear functions over all intervals of its domain.
		Graph a piecewise-defined function that is defined by linear functions over all intervals of its domain.
		Relate the graph of a piecewise-defined function to its algebraic representation, limiting it to linear functions over its domain.
		State the domain and range of linear piecewise-defined functions.
	Step Functions	
		Evaluate a step function.
		Graph a step function.
		Interpret a step function in terms of the problem it models.
		State the domain and range of step functions.
	Absolute Value Functions and Translations	
		Analyze key features of the absolute value function and its translations.
		Graph the absolute value function and its translations.
	Reflections and Dilations of Absolute Value Functions	
		Graph reflections and dilations of the absolute value function.
		State the domain and range of reflections and dilations of the absolute value function.
	The Square Root Function	
		Graph the square root function and reflections over the axes.
		Simplify a square root whose radicand is a perfect square.
		State the domain and range of square root functions.
	The Cube Root Function	
		Graph the cube root function, and translations and reflections of it.
		State the key features of the cube root function, and translations and reflections of it.
	Performance Task: Construct and Analyze Piecewise Functions	

Unit	Lesson	Lesson Objectives
Exponential Functions		
	Exponential Growth Functions	
		Graph an exponential growth function, and state the domain and range.
		Identify an exponential growth function given tables, graphs, and function rules, determining the rate of change.
		State the domain and range of an exponential growth function.
		Write an exponential growth function to model a real-world problem, pointing out constraints in the modeling context.
	Exponential Decay Functions	
		Graph an exponential decay function, and state the domain and range.
		Identify an exponential decay function given tables, graphs, and function rules, determining the rate of change.
		Relate exponential growth and decay functions using laws of exponents and reflections over the y-axis.
		Write an exponential decay function to model a real-world problem, pointing out constraints in the modeling context.
	Vertical Stretches and Shrinks of Exponential Functions	
		Determine the parameters and create an equation for a vertically dilated exponential growth or decay function given a table, equation, or scenario.
		Graph a vertically dilated exponential growth or decay function given a table, equation, or scenario.
	Reflections of Exponential Functions	
		Analyze key aspects of exponential functions that have been reflected across an axis.
		Graph reflections of exponential functions.
	Translations of Exponential Functions	
		Analyze key aspects of exponential functions that have been translated.
		Graph translations of exponential functions.
	Geometric Sequences	
		Graph and analyze geometric sequences as a special case of exponential functions with the domain restricted to natural numbers.
		Write recursive and explicit rules for geometric sequences using function notation.
Foundations of Geometry		
	Defining Geometric Terms	
		Identify undefined terms of point, line, distance along a line, and distance around a circular arc.
		Use undefined terms to precisely define angle, circle, perpendicular line, and line segment.
	Euclidean and Non-Euclidean Geometries	
		Compare and contrast the concepts of postulates and theorems
		Compare and contrast the development and structure of Euclidean and non-Euclidean geometries
		Identify and describe basic postulates about points, lines, and planes
		Identify and describe representations of the undefined terms point, line, and plane
		Identify and describe the relationships between points, lines, and planes in space

Unit	Lesson	Lesson Objectives
	Measuring Length	
		Apply the ruler postulate and segment addition postulate to find the lengths of line segments
		Distinguish between lines, rays, and segments
	Measuring Angles	
		Apply the protractor postulate and angle addition postulate to find angle measures
		Name angles and classify them according to their measures
	Bisectors and Congruence	
		Calculate the measure of a line segment using the midpoint theorem
		Calculate the measure of an angle given a bisector
		Identify a midpoint or bisector of a line segment or angle
	Interactive: Five Basic Constructions	
		Use a straightedge and compass to create constructions involving points and lines
	Construct Regular Polygons	
		Construct regular polygons inscribed in a circle.
		Prove that all circles are similar.
Transformational Geometry and Parallel Lines		
	Introduction to Transformations	
		Compare a preimage and image using the characteristics of isometric transformations
		Describe and identify transformations of geometric figures
	Translations	
		Use an algebraic rule to describe or perform a translation in the coordinate plane
		Use mapping to describe or perform a translation in the coordinate plane
	Reflections	
		Use an algebraic rule to describe or perform a reflection in the coordinate plane
	Rotations	
		Use an algebraic rule to describe or perform a rotation in the coordinate plane
	Dilations	
		Calculate the scale factor for a dilated figure in the coordinate plane.
		Identify the differences between isometric transformations and dilations.
		Use an algebraic rule or given scale factor to dilate a figure in the coordinate plane.
	Compositions	
		Use an algebraic rule to describe or perform a composition of transformations in the coordinate plane

Unit	Lesson	Lesson Objectives
	Project: Frieze Patterns	
		Create a frieze pattern from a basic design element
		Identify the seven classes of frieze patterns
Congruency in Triangles and Analytic Geometry		
	Congruent Figures	
		Calculate angle measures and side lengths of congruent figures
		Identify and apply the properties of congruent figures
	Triangle Congruence: SAS Postulate and SSS Postulate	
		Calculate angle measures and side lengths of congruent triangles
		Identify the SSS postulate and SAS postulate and apply them to examine triangle congruence
		Prove triangles congruent using the SAS and SSS postulates
	Triangle Congruence: ASA Postulate and AAS Theorem	
		Calculate angle measures and side lengths of congruent triangles
		Identify the ASA postulate and AAS theorem and apply them to examine triangle congruence
		Prove triangles congruent using the ASA postulate and AAS theorem
	Congruence in Right Triangles	
		Calculate angle measures and side lengths of congruent right triangles
		Determine if right triangles are congruent by using the HL theorem
		Prove right triangles congruent using the HL theorem
	Using Congruent Triangles: CPCTC	
		Analyze a drawing to determine the triangle congruence postulate or theorem that supports CPCTC
	Symmetry	
		Calculate angles of rotation of geometric figures
		Identify types of symmetry in geometric figures
	Distance and Midpoint	
		Use the distance formula to solve problems involving geometric shapes
		Use the midpoint formula to solve problems involving geometric shapes
	Slope	
		Solve problems involving the slope of a line in the coordinate plane
		Use coordinate geometry to determine if sides of a geometric figure with given vertices are parallel or perpendicular
	Equations of Lines	
		Relate the geometric and algebraic representations of lines in the coordinate plane

Unit	Lesson	Lesson Objectives
Trends in Data and Data Analysis		
	Introduction to Modeling with Functions	
		Analyze a data set to determine a linear, quadratic, or exponential function to model it.
	Line of Best Fit	
		Determine if a data set shows a correlation and, if so, the type of correlation.
		Use a line of best fit to make a prediction.
		Use technology to determine the line of best fit for a data set, and interpret the parameters of the model in context.
	Analyzing Residuals	
		Analyze the residual plot to determine whether the function is an appropriate fit for a linear model.
		Compute the residuals for a set of data and a line of best fit.
		Determine the residual plot for a given scatterplot and line of best fit.
	Strength of Correlation	
		Analyze data to draw conclusions about correlation and causation.
		Calculate the correlation coefficient for a linear model using technology.
		Interpret the strength of a linear model based on the correlation coefficient.
	Describing Data	
		Determine if a sample fairly represents the population as a whole or if there is bias.
		Identify various data collection methods and analyze various displays of data.
		Informally describe the shape, center, and variability of a distribution based on a dot plot, histogram, or box plot.
	Two-Way Tables	
		Calculate relative frequencies and display them in a two-way relative frequency table.
		Display data in a two-way frequency table given a scenario or Venn diagram, and identify joint and marginal frequencies.
		Interpret joint and marginal relative frequencies in the context of the data.
	Relative Frequencies and Association	
		Create conditional relative frequency tables, by row and by column.
		Determine whether there is an association between two variables by analyzing conditional relative frequencies.
		Interpret conditional relative frequencies in the context of the data.
	Measures of Center	
		Calculate the mean and median for a set of data using technology when appropriate.
		Compare the mean and median of a set of data that is symmetrical and for a set of data that is not symmetrical, determining which is a better measure of center for a given data set.
		Create a dot plot or histogram for a set of data.
		Discuss the effect of outliers on measures of center.

Unit	Lesson	Lesson Objectives
	Box Plots	
		Analyze box plots for symmetry and outliers.
		Compare box plots.
		Create and interpret box plots.