Wyoming Department of Education Required Virtual Education Course Syllabus

Niobrara County School District # 1

Program Name	Wyoming Virtual Academy	Content Area	MA
Course ID	D-MTH-08AV2-K	Grade Level	8
Course Name	Summit Math 8- Sem 1	# of Credits	
SCED Code		Curriculum Type	K12 Inc

COURSE DESCRIPTION

K12's Math 8 Summit course prepares students for more advanced study in algebra as students solve linear equations and systems of equations, work with radical and integer exponents, gain conceptual understanding of functions, and use functions to model quantitative relationships. To prepare students for more advanced study in geometry, the course emphasizes the Pythagorean theorem and a deepening exploration of similarity and congruence.

WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD#	BENCHMARK_(Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets
7.EE.4a	Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?
7.NS.3	Solve real-world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.)
8.EE.1	Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, 3^2 × 3^(–5) = 3^(–3) = 1/(3^3) = 1/27.
8.EE.3	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3 × 10^8 and the population of the world as 7 × 10^9, and determine that the world population is more than 20 times larger.
8.EE.5	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.
8.EE.6	Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y =mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.
8.EE.7a	Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).
8.EE.7b	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.
8.EE.8a	Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.

8.EE.8b	Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.
8.F.1	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. (Function notation is not required in Grade 8.)
8.F.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.
8.F.3	Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function A = s^2 giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.
8.F.4	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
8.F.5	Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

SCOPE AND SEQUENCE

UNIT OUTLINE	STANDARD#	OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS
Course Introduction		
Readiness Checkpoint		
Unit 1: Number Properties Lesson 1: Exchange Ideas		Convert a very small number to scientific notation. Convert a very large number to scientific notation. Convert a very small number written in scientific notation to standard form. Convert a very large number written in scientific notation to standard form.
Unit 1: Number Properties Lesson 2: Expressions		Evaluate expressions involving integers, using the order of operations. Evaluate expressions involving positive rational numbers, using the order of operations.
Unit 1: Number Properties Lesson 3: Distributive Property		Simplify an algebraic expression by using the distributive property or combining like terms.

Unit 1: Number Properties Lesson 4: Your Choice		
Unit 1: Number Properties Lesson 5: Positive and Zero Exponents	7.NS.3: Solve real-world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.); 7.EE.A.1: Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	Evaluate a numerical expression that includes a positive integer exponent. Evaluate a numerical expression that includes zero as the exponent.
Unit 1: Number Properties Lesson 6: Negative Exponents		Evaluate a numerical expression that includes a negative integer exponent.
Unit 1: Number Properties Lesson 7: Work with Exponents	8.EE.1: Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, 3^2 × 3^(–5) = 3^(–3) = 1/(3^3) = 1/27.	Evaluate a numerical expression, using the properties of exponents
Unit 1: Number Properties Lesson 8: Scientific Notation	8.EE.1: Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, 3^2 × 3^(–5) = 3^(–3) = 1/(3^3) = 1/27.	Convert a very small or very large number to scientific notation. Convert a very small or very large number written in scientific notation to standard form. Interpret scientific notation that has been generated by technology.
Unit 1: Number Properties Lesson 9: Your Choice	8.EE.1: Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, 3^2 × 3^(–5) = 3^(–3) = 1/(3^3) = 1/27.	
Unit 1: Number Properties Lesson 10: Add and Subtract in Scientific Notation	8.EE.3: Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3 × 10^8 and the population of the world as 7 × 10^9, and determine that the world population is more than 20 times larger.; 8.EE.4: Perform operations with numbers expressed in scientific notation, including	Write a given number with a power of ten in scientific notation. Solve problems involving scientific notation.

	problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.	
Unit 1: Number Properties Lesson 11: Multiply and Divide in Scientific Notation		Determine the multiplicative relationship between two numbers written in scientific notation. Solve problems involving scientific notation.
Unit 1: Number Properties Lesson 12: Problem Solving with Scientific Notation	8.EE.3: Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3 × 10^8 and the population of the world as 7 × 10^9, and determine that the world population is more than 20 times larger.; 8.EE.4: Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.	Estimate a very small or very large quantity by expressing it as the product of a single-digit number and a positive power of 10. Determine units of appropriate size for real-world measurements of very large or very small quantities, using scientific notation. Solve real-world problems involving scientific notation. Solve real-world problems involving two very large or two very small quantities by determining how many times greater or lesser one is than the other.
Unit 1: Number Properties Lesson 13: Unit Review	8.EE.3: Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3 × 10^8 and the population of the world as	

	7 × 10^9, and determine that the world population is more than 20 times larger.; 8.EE.4: Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.	
Unit 1: Number Properties Lesson 14: Unit Test	8.EE.3: Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3 × 10^8 and the population of the world as 7 × 10^9, and determine that the world population is more than 20 times larger.; 8.EE.4: Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.	
Unit 1: Number Properties Lesson 15: Extended Problems		
Unit 2: Equations Lesson 1: Exchange Ideas		Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions by using the distributive property and collection of like terms.

Unit 2: Equations Lesson 2: Addition and Subtraction Equations	7.EE.4a: Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?; 8.EE.7.b: Solve linear equations in one variable. b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	Solve problems by writing and solving equations in the form x + p = q.
Unit 2: Equations Lesson 3: Simplify Before Adding or Subtracting	7.EE.4a: Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?; 8.EE.7.b: Solve linear equations in one variable. b. Solve linear equations with rational	Simplify a linear equation by using the distributive property or combining like terms.

	number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	
Unit 2: Equations Lesson 4: Multiplication and Division Equations	7.EE.4a: Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?	Solve division equations using the multiplication property of equality. Solve multiplication equations using the division property of equality.
Unit 2: Equations Lesson 5: Simplify Before Multiplying or Dividing	7.EE.4a: Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?	Combine like terms to solve multiplication or division equations. Apply the distributive property to solve multiplication or division equations.
Unit 2: Equations Lesson 6: Your Choice		
Unit 2: Equations Lesson 7: Multiple Transformations	8.EE.7.b: Solve linear equations in one variable. b. Solve linear equations	Solve two-step equations.

	with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	
Unit 2: Equations Lesson 8: Simplify Before Multiple Transformations	8.EE.7.b: Solve linear equations in one variable. b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	Combine like terms to solve two-step equations. Apply the distributive property to solve two-step equations.
Unit 2: Equations Lesson 9: Your Choice		
Unit 2: Equations Lesson 10: Variables on Both Sides of an Equation	8.EE.7.a: Solve linear equations in one variable. a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).; 8.EE.7.b: Solve linear equations in one variable. b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	Solve linear equations with variables on both sides.
Unit 2: EquationsLesson 11: Strange Solutions	8.EE.7.a: Solve linear equations in one variable. a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are	

	different numbers).; 8.EE.7.b: Solve linear equations in one variable. b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	
Unit 2: Equations Lesson 12: Solve Problems with Equations	8.EE.7.b: Solve linear equations in one variable. b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	Solve linear equations with variables on both sides. Simplify equations with variables on both sides before solving.
Unit 2: Equations Lesson 13: Unit Review		
Unit 2: Equations Lesson 14: Unit Test		
Unit 2: Equations Lesson 15: Extended Problems		
Interim Checkpoint 1		
Your Choice		
Your Choice		
Unit 3: Slope Lesson 1: Exchange Ideas		Compare two different proportional relationships represented in different ways.
Unit 3: Slope Lesson 2: Equations in Two Variables	8.EE.6: Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.	Determine whether an ordered pair is a solution to an equation in two variables. Make a table of ordered pairs to graph a line.
Unit 3: Slope Lesson 3: Lines and Intercepts	8.EE.6: Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a	Write the equation of a line in standard form. Use an equation in standard form to find the intercepts of a line. Graph a line using its intercepts.

	line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.	
Unit 3: Slope Lesson 4: Proportional Relationships	8.EE.5: Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.	Graph proportional relationships. Determine the unit rate of a proportional relationship using slope. Compare proportional relationships. Classify relationships as proportional or not proportional.
Unit 3: Slope Lesson 5: Slope	8.EE.6: Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.	Find the slope of a line using a graph, a table, and an equation. Explain why any two points on a line can be used to find its slope.
Unit 3: Slope Lesson 6: Your Choice		
Unit 3: Slope Lesson 7: Simple Linear Graphs	8.EE.6: Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.	Understand that an equation in a form y = mx represents the graph of a proportional relationship. Graph a proportional relationship. Find the equation of a line that intersects the origin using its graph.
Unit 3: Slope Lesson 8: Slope-Intercept Form	8.EE.6: Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.	Use slope-intercept form of a line to identify the slope and y-intercept of the line. Graph an equation in the form y = mx + b. Write the equation of a line that does not pass through the origin using its graph.
Unit 3: Slope Lesson 9: Convert Equations to Slope-Intercept Form	8.EE.6: Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and	Convert a linear equation in another form to slope-intercept form. Graph an equation that is written in slope-intercept form.

	the equation y = mx + b for a line intercepting the vertical axis at b.	
Unit 3: Slope Lesson 10: Use Slope as a Rate	8.EE.5: Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.; 8.EE.6: Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.	Understand slope in a real-world situation. Find the slope of a line using a graph.
Unit 3: Slope Lesson 11: Compare Relationships	8.EE.5: Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.; 8.EE.7: Solve linear equations in one variable.	Understand slope in a real-world situation. Find the slope of a line using a graph.
Unit 3: Slope Lesson 12: Unit Review		
Unit 3: Slope Lesson 13: Unit Test		
Unit 3: Slope Lesson 14: Extended Problems		
Unit 4: Lines Lesson 1: Exchange Ideas		Represent a linear function as an equation in point-slope form, given its graph. Represent a linear function as an equation in standard form, given its graph. Represent a linear function as an equation in slope-intercept form, given its graph.
Unit 4: Lines Lesson 2: Point-Slope Form	8.F.4: Construct a function to model a linear relationship between two quantities. Determine the	Write the equation of a line in point-slope form using the slope of the line and a point on the line.

	rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	Write the equation of a line in point-slope form using two points on a line. Graph the equation of a line that is in point-slope form.
Unit 4: Lines Lesson 3: Equations from Graphs	8.F.4: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	Use the graph of a line to write its equation in point-slope form.
Unit 4: Lines Lesson 4: Your Choice		
Unit 4: Lines Lesson 5: Convert Forms of Lines	8.F.4: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	Use the graph of a line to write the equation of the line in standard form. Use the graph of a line to write the equation of the line in slope-intercept form.
Unit 4: Lines Lesson 6: Representations of Linear Models	8.F.4: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models,	Represent real-world situations using equations in slope-intercept form, point-slope form, and standard form, given information in tables or graphs.

	and in terms of its graph or a table of values.	
Unit 4: Lines Lesson 7: Sketch Lines	8.F.5: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	Sketch a graph of a real-world linear relationship.
Unit 4: Lines Lesson 8: Unit Review		
Unit 4: Lines Lesson 9: Unit Test		
Unit 4: Lines Lesson 10: Extended Problems		
Interim Checkpoint 2		
Your Choice		
Your Choice		
Unit 5: Systems of Equations Lesson 1: Exchange Ideas		Represent a real-world problem, using a system of two linear equations. Solve a real-world problem represented by a system of two linear equations.
Unit 5: Systems of Equations Lesson 2: Systems of Linear Equations	8.EE.8.a: Analyze and solve pairs of simultaneous linear equations.a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.	Determine whether an ordered pair is a solution to a system of linear equations. Explain why an ordered pair is or is not a solution to a system of linear equations.
Unit 5: Systems of Equations Lesson 3: Use Graphs to Solve Systems	8.EE.8.a: Analyze and solve pairs of simultaneous linear equations. a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.; 8.EE.8.b: Analyze and solve pairs of	Understand that the point of intersection of a system of linear equations is its solution. Use graphing to solve a system of linear equations. Use graphing to estimate the solution to a system of linear equations.

	simultaneous linear equations. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.; 8.EE.8.c: Analyze and solve pairs of simultaneous linear equations. c. Solve real-world and mathematical problems leading to two linear equations in two variables. For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.	
Unit 5: Systems of Equations Lesson 4: Classify Systems	8.EE.8.a: Analyze and solve pairs of simultaneous linear equations. a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.; 8.EE.8.b: Analyze and solve pairs of simultaneous linear equations. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.; 8.EE.8.c: Analyze and solve pairs of simultaneous linear equations. c. Solve real-world and mathematical problems leading to two linear equations in two variables. For example, given coordinates for two pairs of points, determine whether the line through the first pair of points	Determine the number of solutions to a system of linear equations. Classify a system of linear equations by its number of solutions. Solve a system of equations by inspection.

	intersects the line through the second pair.	
Unit 5: Systems of Equations Lesson 5: Your Choice		
Unit 5: Systems of Equations Lesson 6: Substitution and Elimination Methods	8.EE.8.b: Analyze and solve pairs of simultaneous linear equations. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.; 8.EE.8.c: Analyze and solve pairs of simultaneous linear equations. c. Solve real-world and mathematical problems leading to two linear equations in two variables. For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.	Solve systems of linear equations using the substitution method. Solve systems of linear equations using the elimination method. Identify inconsistent and consistent dependent systems algebraically.
Unit 5: Systems of Equations Lesson 7: Applications: Systems of Linear Equations	8.EE.8.b: Analyze and solve pairs of simultaneous linear equations. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.; 8.EE.8.c: Analyze and solve pairs of simultaneous linear equations. c. Solve real-world and mathematical problems leading to two linear equations in two variables. For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.	Solve real-world problems using systems of two linear equations.
Unit 5: Systems of Equations Lesson 8: Your Choice		

Unit 5: Systems of Equations Lesson 9: Mixture Problems	8.EE.8.b: Analyze and solve pairs of simultaneous linear equations. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.; 8.EE.8.c: Analyze and solve pairs of simultaneous linear equations. c. Solve real-world and mathematical problems leading to two linear equations in two variables. For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.	Solve mixture problems using systems of two linear equations.
Unit 5: Systems of Equations Lesson 10: Unit Review		
Unit 5: Systems of Equations Lesson 11: Unit Test		
Unit 5: Systems of Equations Lesson 12: Extended Problems		
Unit 6: Functions Lesson 1: Exchange Ideas		Determine whether a relation is a function.
Unit 6: Functions Lesson 2: Relations	8.F.1: Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. (Function notation is not required for Grade 8.); 8.F.4: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value	Represent relations using sets of ordered pairs, arrow diagrams, tables, and graphs. Find the domain and range of a relation.

	of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	
Unit 6: Functions Lesson 3: Functions	8.F.1: Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. (Function notation is not required for Grade 8.); 8.F.4: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	Determine whether a relation is a function. Define function inputs and outputs. Evaluate a function using its graph, table, or equation.
Unit 6: Functions Lesson 4: Your Choice		
Unit 6: Functions Lesson 5: Function Equations	8.F.1: Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. (Function notation is not required for Grade 8.); 8.F.4: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	Write function equations using a verbal description of the function. Write function equations using a graph of the function.

Unit 6: FunctionsLesson 6: Linear Function Equations and Rate of Change	8.F.4: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	Write the equation of a linear function and determine the rate of change of the function using a point on the line and the slope of the line.Write the equation of a linear function and determine the rate of change of the function using two points on the line.
Unit 6: Functions Lesson 7: Interpret Linear Function Equations	8.F.4: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	Write the equation of a linear function and determine the rate of change of the function using a point on the line and the slope of the line. Write the equation of a linear function and determine the rate of change of the function using two points on the line.
Unit 6: Functions Lesson 8: Identify Linear Models	8.F.3: Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function A = s^2 giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.	Determine whether a function is linear or nonlinear using a graph. Determine whether a function is linear or nonlinear using a table. Determine whether a function is linear or nonlinear using an equation.
Unit 6: Functions Lesson 9: Function Representations	8.F.2: Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.	Compare the properties of two linear functions that are represented differently.

Unit 6: Functions Lesson 10: Your Choice		
Unit 6: Functions Lesson 11: Describe Functions	8.F.5: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	Determine whether a function is increasing or decreasing using its graph. Determine where a function is increasing or decreasing using its graph. Determine where a function is linear or nonlinear using its graph.
Unit 6: Functions Lesson 12: Function Stories	8.F.5: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	Describe the real-world relationship between two quantities depicted on a graph.
Unit 6: Functions Lesson 13: Sketch Function Graphs	8.F.5: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	Sketch the graph of a real-world relationship between two quantities.
Unit 6: Functions Lesson 14: Unit Review		
Unit 6: Functions Lesson 15: Unit Test		
Unit 6: Functions Lesson 16: Extended Problems		