

## 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-128AV1-K	Grade Level	9-12
Course Name	Summit Algebra 1- Semester 1	# of Credits	0.5
SCED Code	02052G0.5012	Curriculum Type	K12 Inc

**COURSE DESCRIPTION**

Generally offered 1<sup>st</sup> semester. K12's Algebra 1 Summit course is intended to formalize and extend the mathematics that students learned in the middle grades. Because it is built to follow revised middle school math courses, the course covers slightly different ground than previous versions of algebra. In this course, students deepen their understanding of linear and exponential relationships by contrasting them with each other. Students also apply linear models to data that exhibit a linear trend. The course also covers analyzing, solving, and using quadratic functions. Specific topics include expressions and problem solving, one-variable linear equations and inequalities, two-variable linear equations and inequalities, working with functions, radicals and exponents, exponential functions, and sequences and modeling with functions.

**WYOMING CONTENT AND PERFORMANCE STANDARDS**

STANDARD#	<a href="#">BENCHMARK (Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets</a>
A.CED.1	Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.*
A.CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.*
A.CED.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance $R$ .*
A.REI.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
A.REI.10	Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).
A.REI.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
A.SSE.1	Interpret expressions that represent a quantity in terms of its context.*
A.SSE.1a	Interpret parts of an expression, such as terms, factors, and coefficients.*

A.SSE.1b	Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret $P(1+r)^n$ as the product of $P$ and a factor not depending on $P$ .*
A.SSE.3	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.*
A.SSE.3c	Use the properties of exponents to transform expressions for exponential functions. For example the expression $1.15^t$ can be rewritten as $[1.15^{(1/12)}]^{(12t)} \approx 1.012^{(12t)}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.*
F.BF.2	Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.*
F.BF.3	Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$ , $k f(x)$ , $f(kx)$ , and $f(x + k)$ for specific values of $k$ (both positive and negative); find the value of $k$ given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.
F.IF.1	Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If $f$ is a function and $x$ is an element of its domain, then $f(x)$ denotes the output of $f$ corresponding to the input $x$ . The graph of $f$ is the graph of the equation $y = f(x)$ .
F.IF.2	Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
F.IF.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*
F.IF.6	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.*
F.IF.7	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.*
F.IF.7a	Graph linear and quadratic functions and show intercepts, maxima, and minima.*
F.IF.7b	Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.*
F.IF.7e	Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.*
F.IF.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.
F.LE.1	Distinguish between situations that can be modeled with linear functions and with exponential functions.*

F.LE.1a	Prove that linear functions grow by equal differences over equal intervals and that exponential functions grow by equal factors over equal intervals.*
F.LE.1b	Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.*
F.LE.1c	Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.*
F.LE.2	Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).*
F.LE.5	Interpret the parameters in a linear or exponential function in terms of a context.*
N.Q.1	Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.*
N.Q.2	Define appropriate quantities for the purpose of descriptive modeling.*
N.Q.3	Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.*
N.RN.1	Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{1/3}$ to be the cube root of 5 because we want $[5^{1/3}]^3 = 5^{[(1/3) \times 3]}$ to hold, so $[5^{1/3}]^3$ must equal 5.
N.RN.2	Rewrite expressions involving radicals and rational exponents using the properties of exponents.

### SCOPE AND SEQUENCE

UNIT OUTLINE	STANDARD#	OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS
Unit 1: Expressions and Problem Solving Lesson 1: Exchange Ideas	A.SSE.1, a	<p>Evaluate numerical expressions involving whole-number exponents.</p> <p>Determine where to place grouping symbols in an expression to get a specified value.</p> <p>Evaluate expressions involving rational numbers, using the order of operations.</p>
Unit 1: Expressions and Problem Solving Lesson 2: Expressions	A.SSE.1, a	<p>Evaluate numerical expressions involving whole-number exponents.</p> <p>Determine where to place grouping symbols in an expression to get a specified value.</p> <p>Evaluate expressions involving rational numbers, using the order of operations.</p>

Unit 1: Expressions and Problem Solving Lesson 3: Variables	A.SSE.1, a	Evaluate expressions, using given values for variables.  Identify parts of a linear expression.
Unit 1: Expressions and Problem Solving Lesson 4: Equations	A.SSE.1, a	Determine whether two numerical expressions form an equation.  Determine whether a given value makes an open sentence true.
Unit 1: Expressions and Problem Solving Lesson 5: Translate Words into Variable Expressions	A.SSE.1, a	Represent mathematical operations using expressions with numbers and with letters standing for numbers.  Translate phrases into algebraic expressions.  Represent mathematical situations as expressions, using variables for the unknowns.  Represent real-world situations as expressions, using variables for the unknowns.  Translate sentences into equations.
Unit 1: Expressions and Problem Solving Lesson 6: Translate Words into Equations	A.SSE.1, a	Represent mathematical situations as equations, using variables for the unknown.  Represent real-world situations as equations, using variables for the unknown.  Translate sentences into equations.
Unit 1: Expressions and Problem Solving Lesson 7: Your Choice	A.SSE.1, a-b N.Q.1 N.Q.2	You may use today's lesson time to <ul style="list-style-type: none"> <li>• Complete work in progress.</li> <li>• Review prior lessons in the unit to prepare for the Unit Test.</li> <li>• Post or respond to posts on the discussion board for the Exchange Ideas activity in this unit.</li> <li>• Prepare for your state standardized test.</li> </ul> Go on to the next lesson.
Unit 1: Expressions and Problem Solving Lesson 8: Problem Solving	NQ.2	Represent mathematical situations as equations, using variables for the unknown.  Represent real-world situations as equations, using variables for the unknown.

		<p>Apply the five-step problem-solving plan to solve real-world problems.</p> <p>Define appropriate quantities for the purpose of descriptive modeling.</p>
<p>Unit 1: Expressions and Problem Solving Lesson 9: Dimensional Analysis</p>	NQ.1	<p>Convert measures using dimensional analysis.</p> <p>Convert rates using dimensional analysis.</p>
<p>Unit 1: Expressions and Problem Solving Lesson 10: Structure and Meaning</p>	A.SSE.1, a-b	<p>Interpret parts of a linear expression within the context of the situation it represents.</p> <p>Explain how parts of an expression with multiple operations can be viewed as a single entity.</p>
<p>Unit 1: Expressions and Problem Solving Lesson 11: Unit Review</p>	<p>A.SSE.1, a-b N.Q.1 N.Q.2</p>	<p>Use today's lesson time to prepare for the Unit Test. You may</p> <ul style="list-style-type: none"> <li>• Revisit Review activities located before each quiz in the unit.</li> <li>• Look at the Summary activities in each lesson.</li> <li>• Read through the Reference Guide pages linked in each lesson.</li> <li>• Ask for help on any Practice problems you did not fully understand.</li> </ul>
<p>Unit 1: Expressions and Problem Solving Lesson 12: Unit Test</p>	<p>A.SSE.1, a-b N.Q.1 N.Q.2</p>	<p>Demonstrate knowledge on concepts in this unit.</p>
<p>Unit 2: One-Variable Linear Equations and Inequalities Lesson 1: Exchange Ideas</p>	A.REI.3	<p>Solve a one-step linear addition or subtraction inequality.</p> <p>Solve a one-step linear multiplication or division inequality.</p> <p>Solve a multistep linear inequality with variables on one side.</p> <p>Solve a multistep linear inequality with variables on both sides.</p>
<p>Unit 2: One-Variable Linear Equations and Inequalities Lesson 2: One-Step Equations</p>	A.REI.3	<p>Solve a one-step linear addition or subtraction equation.</p> <p>Solve a one-step linear multiplication or division equation.</p> <p>Solve a multistep linear equation with variables on one side.</p>

Unit 2: One-Variable Linear Equations and Inequalities Lesson 3: Multiple Transformations	A.REI.3	Solve a multistep linear equation with variables on one side.  Solve one variable linear absolute value equations.
Unit 2: One-Variable Linear Equations and Inequalities Lesson 4: Variables on Both Sides of an Equation	A.REI.3	Solve a multistep linear equation with variables on one side.  Solve a multistep linear equation with variables on both sides.
Unit 2: One-Variable Linear Equations and Inequalities Lesson 5: Applications of Linear Equations	A.CED.1	Solve problems by writing and solving linear equations in one variable.
Unit 2: One-Variable Linear Equations and Inequalities Lesson 6: Solve Literal Equations	A.CED.4 A.REI.3	Solve a formula for a specific variable.  Solve literal equations for a specified variable.
Unit 2: One-Variable Linear Equations and Inequalities Lesson 7: Your Choice	A.CED.1 A.CED.4 A.REI.1 A.REI.3 N.Q.3	You may use today's lesson time to <ul style="list-style-type: none"> <li>• Complete work in progress.</li> <li>• Review prior lessons in the unit to prepare for the Unit Test.</li> <li>• Post or respond to posts on the discussion board for the Exchange Ideas activity in this unit.</li> <li>• Prepare for your state standardized test.</li> </ul> Go on to the next lesson.
Unit 2: One-Variable Linear Equations and Inequalities Lesson 8: Solve Inequalities	A.REI.3	Solve a one-step linear addition or subtraction inequality.  Solve a one-step linear multiplication or division inequality.  Solve a multistep linear inequality with variables on one side.  Solve a multistep linear inequality with variables on both sides.
Unit 2: One-Variable Linear Equations and Inequalities Lesson 9: Applications of Inequalities	N.Q.3 A.CED.1	Solve problems by writing and solving linear inequalities in one variable.
Unit 2: One-Variable Linear Equations and Inequalities Lesson 10: Reasoning	A.REI.1	Justify each step in solving an equation.  Justify each step in solving an inequality.

		Justify a solution method.
Unit 2: One-Variable Linear Equations and Inequalities Lesson 11: Unit Review	A.CED.1 A.CED.4 A.REI.1 A.REI.3 N.Q.3	Use today's lesson time to prepare for the Unit Test. You may <ul style="list-style-type: none"> <li>• Revisit Review activities located before each quiz in the unit.</li> <li>• Look at the Summary activities in each lesson.</li> <li>• Read through the Reference Guide pages linked in each lesson.</li> <li>• Ask for help on any Practice problems you did not fully understand.</li> </ul>
Unit 2: One-Variable Linear Equations and Inequalities Lesson 12: Unit Test	A.CED.1 A.CED.4 A.REI.1 A.REI.3 N.Q.3	Demonstrate knowledge on concepts in this unit.
Interim Checkpoint 1	A.CED.1 A.CED.4 A.REI.1 A.REI.3 A.SSE.1, a-b N.Q.1 N.Q.2 N.Q.3	Demonstrate knowledge on concepts in this semester.
Unit 3: Two-Variable Linear Equations and Inequalities Lesson 1: Exchange Ideas	A.CED.2	Transform the equation of a line into a given form.  Graph the equation of a line given in standard form.  Graph the equation of a line given in point-slope form.  Graph the equation of a line given in slope-intercept form.  Represent real-world situations with a linear equation in two variables.  Write the equation of a line, given two points on the line.  Write the equation of a line, given the slope of the line and a point on the line.

		<p>Write the equation of a line, given the slope of the line and the <math>y</math>-intercept.</p> <p>Identify the form of a linear equation.</p>
<p>Unit 3: Two-Variable Linear Equations and Inequalities Lesson 2: Graphs of Lines</p>	A.CED.2	<p>Determine the slope of a line, given two points on the line.</p> <p>Determine the <math>x</math>- and <math>y</math>-intercepts of a line, given its equation.</p> <p>Explain how the graph of an equation in two variables is related to its solution set.</p> <p>Determine whether an ordered pair is on a line, given its equation.</p>
<p>Unit 3: Two-Variable Linear Equations and Inequalities Lesson 3: Forms of Linear Equations</p>	A.CED.2	<p>Transform the equation of a line into a given form.</p> <p>Graph the equation of a line given in standard form.</p> <p>Graph the equation of a line given in point-slope form.</p> <p>Graph the equation of a line given in slope-intercept form.</p> <p>Graph the equation of a line not given in a common form.</p>
<p>Unit 3: Two-Variable Linear Equations and Inequalities Lesson 4: Write Equations of Lines</p>	A.CED.2	<p>Write the equation of a line, given two points on the line.</p> <p>Write the equation of a line, given the slope of the line and a point on the line.</p> <p>Write the equation of a line, given the slope of the line and the <math>y</math>-intercept.</p>
<p>Unit 3: Two-Variable Linear Equations and Inequalities Lesson 5: Your Choice</p>	<p>A.CED.2 A.CED.3 A.REI.12</p>	<p>You may use today's lesson time to</p> <ul style="list-style-type: none"> <li>• Complete work in progress.</li> <li>• Review prior lessons in the unit to prepare for the Unit Test.</li> <li>• Post or respond to posts on the discussion board for the Exchange Ideas activity in this unit.</li> <li>• Prepare for your state standardized test.</li> </ul> <p>Go on to the next lesson.</p>

Unit 3: Two-Variable Linear Equations and Inequalities Lesson 6: Graph Linear Equalities	A.REI.12	Determine whether an ordered pair is a solution to a given inequality.  Graph a linear inequality in two variables.  Write an inequality to model a real-world situation.
Unit 3: Two-Variable Linear Equations and Inequalities Lesson 7: Systems of Linear Equalities	A.REI.12	Write a system of inequalities, given the graph of the system.  Graph a system of two linear inequalities in two variables.
Unit 3: Two-Variable Linear Equations and Inequalities Lesson 8: Constraints	A.CED.3	Represent a set of constraints with a system of inequalities.  Determine whether solutions to systems of inequalities make sense in the real-world situations they represent.
Unit 3: Two-Variable Linear Equations and Inequalities Lesson 9: Unit Review	A.CED.2 A.CED.3 A.REI.12	Use today's lesson time to prepare for the Unit Test. You may <ul style="list-style-type: none"> <li>• Revisit Review activities located before each quiz in the unit.</li> <li>• Look at the Summary activities in each lesson.</li> <li>• Read through the Reference Guide pages linked in each lesson.</li> <li>• Ask for help on any Practice problems you did not fully understand.</li> </ul>
Unit 3: Two-Variable Linear Equations and Inequalities Lesson 10: Unit Test	A.CED.2 A.CED.3 A.REI.12	Demonstrate knowledge on concepts in this unit.
Unit 4: Working with Functions Lesson 1: Exchange Ideas	F.IF.4 F.IF.6 F.IF.7	Sketch the graph of a linear function, given a description of the situation it represents.  Graph a linear function, given its equation.
Unit 4: Working with Functions Lesson 2: Relations and Functions	F.IF.1 F.IF.2	Determine the domain and range of a relation.  Determine whether a relation with input $x$ and output $f(x)$ is a function.
Unit 4: Working with Functions Lesson 3: Function Equations	F.IF.1 F.IF.2	Determine the domain and range of a relation.  Determine whether a relation with input $x$ and output $f(x)$ is a function.

Unit 4: Working with Functions Lesson 4: Extended Problems: Function Applications	A.CED.2	Determine the slope of a line, given two points on the line  Determine the x- and y-intercepts of a line, given its equation.
Unit 4: Working with Functions Lesson 5: Your Choice	A.CED.2 F.BF.3 F.IF.1 F.IF.2 F.IF.4 F.IF.6 F.IF.7	You may use today's lesson time to <ul style="list-style-type: none"> <li>• Complete work in progress.</li> <li>• Review prior lessons in the unit to prepare for the Unit Test.</li> <li>• Post or respond to posts on the discussion board for the Exchange Ideas activity in this unit.</li> <li>• Prepare for your state standardized test.</li> </ul> Go on to the next lesson.
Unit 4: Working with Functions Lesson 6: Linear Functions	F.IF.4 F.IF.6 F.IF.7, a	Sketch the graph of a linear function, given a description of the situation it represents.  Graph a linear function, given its equation.
Unit 4: Working with Functions Lesson 7: Transform Linear Functions	F.BF.3	Describe the effect a given parameter has on a graph.  Determine the equation of a linear function that is a transformation of another linear function, given the equation of the original function.  Describe the transformation that could take one linear function to another linear function.
Unit 4: Working with Functions Lesson 8: Intercepts	F.IF.4 F.IF.6	Interpret key features of a linear function, from a graph, in terms of the real-world context it represents.
Unit 4: Working with Functions Lesson 9: Domain and Range	F.IF.5	Determine the practical domain of a function.  Determine the practical range of a function.
Unit 4: Working with Functions Lesson 10: Absolute Value Functions	F.IF.7I, b F.BF.3	Describe the effect a given parameter has on a graph.  Determine the equation of an absolute value function that is a transformation of another absolute value function, given the equation of the original function.  Graph an absolute value function, given the graph of its parent function.

		Graph an absolute value function, given its equation.
Unit 4: Working with Functions Lesson 11: Piecewise-Defined Functions	F.IF.7, b	Graph a piecewise-defined function, given its rule.
Unit 4: Working with Functions Lesson 12: Step Functions	F.IF.7, b F.BF.3	Describe the effect a given parameter has on a graph.  Graph a step function, given its equation.
Unit 4: Working with Functions Lesson 13: Unit Review	A.CED.2 F.BF.3 F.IF.1 F.IF.2 F.IF.4 F.IF.6 F.IF.7	Use today's lesson time to prepare for the Unit Test. You may <ul style="list-style-type: none"> <li>• Revisit Review activities located before each quiz in the unit.</li> <li>• Look at the Summary activities in each lesson.</li> <li>• Read through the Reference Guide pages linked in each lesson.</li> <li>• Ask for help on any Practice problems you did not fully understand.</li> </ul>
Unit 4: Working with Functions Lesson 14: Unit Test	A.CED.2 F.BF.3 F.IF.1 F.IF.2 F.IF.4 F.IF.6 F.IF.7	Demonstrate knowledge on concepts in this unit.
Interim Checkpoint 2	A.CED.1 A.CED.2 A.CED.4 A.REI.1 A.REI.3 A.SSE.1, a-b F.BF.3 F.IF.1 F.IF.2 F.IF.4 F.IF.6 F.IF.7, a-b N.Q.1 N.Q.2 N.Q.3	Demonstrate knowledge on concepts in this semester.
Unit 5: Radicals and Exponents Lesson 1: Exchange Ideas	N.RN.1 N.RN.2	Simplify expressions using properties of exponents.  Justify the meaning of a rational exponent.

		Convert between rational exponent form and radical form.
Unit 5: Radicals and Exponents Lesson 2: Irrational Numbers	N.RN.3	Determine whether a number is rational or irrational.
Unit 5: Radicals and Exponents Lesson 3: Simplify Radical Expressions	N.RN.2	Simplify radical expressions whose radicands contain perfect square factors.  Simplify radical expressions by rationalizing the denominator.
Unit 5: Radicals and Exponents Lesson 4: Operations with Radical Expressions	N.RN.3	Multiply radical expressions.  Add and subtract radical expressions.
Unit 5: Radicals and Exponents Lesson 5: Properties of Rational and Irrational Numbers	N.RN.3	Explain why the sum or product of rational numbers is rational.  Explain why the sum of a rational number and an irrational number is irrational.  Explain why the product of a nonzero rational number and an irrational number is irrational.  Solve problems involving the type of number that results from a given operation with rational and irrational numbers.
Unit 5: Radicals and Exponents Lesson 6: Your Choice	A.CED.1 A.SSE.3 N.RN.1 N.RN.2 N.RN.3	You may use today's lesson time to <ul style="list-style-type: none"> <li>• Complete work in progress.</li> <li>• Review prior lessons in the unit to prepare for the Unit Test.</li> <li>• Post or respond to posts on the discussion board for the Exchange Ideas activity in this unit.</li> <li>• Prepare for your state standardized test.</li> </ul> Go on to the next lesson.
Unit 5: Radicals and Exponents Lesson 7: Properties of Exponents	N.RN.1 N.RN.2	Simplify expressions using properties of exponents.  Justify the meaning of a rational exponent.  Convert between rational exponent form and radical form.
Unit 5: Radicals and Exponents Lesson 8: Growth and Decay Equations	A.CED.1	Solve problems by writing and solving exponential equations in one variable.

<p>Unit 5: Radicals and Exponents Lesson 9: Rewrite Exponential Expressions</p>	<p>A.SSE.3, c</p>	<p>Interpret exponential expressions by using properties of exponents.</p> <p>Solve real-world problems using properties of exponents to transform expressions.</p> <p>Determine whether the equation of an exponential function represents exponential growth or exponential decay.</p> <p>Solve exponential equations by using properties of exponents.</p>
<p>Unit 5: Radicals and Exponents Lesson 10: Unit Review</p>	<p>A.CED.1 A.SSE.3 N.RN.1 N.RN.2 N.RN.3</p>	<p>Use today's lesson time to prepare for the Unit Test. You may</p> <ul style="list-style-type: none"> <li>• Revisit Review activities located before each quiz in the unit.</li> <li>• Look at the Summary activities in each lesson.</li> <li>• Read through the Reference Guide pages linked in each lesson.</li> <li>• Ask for help on any Practice problems you did not fully understand.</li> </ul>
<p>Unit 5: Radicals and Exponents Lesson 11: Unit Test</p>	<p>A.CED.1 A.SSE.3 N.RN.1 N.RN.2 N.RN.3</p>	<p>Demonstrate knowledge on concepts in this unit.</p>
<p>Unit 6: Exponential Functions Lesson 1: Exchange Ideas</p>	<p>F.LE.1</p>	<p>Determine ratios of outputs for an exponential function over a given interval.</p> <p>Determine whether a function is linear, exponential, or neither linear nor exponential, given a set or table of ordered pairs.</p> <p>Determine whether a situation can be modeled by a linear function or an exponential function.</p>
<p>Unit 6: Exponential Functions Lesson 2: Graph Exponential Functions</p>	<p>A.REI.10 F.IF.7, e</p>	<p>Graph an exponential function, given its equation.</p> <p>Determine whether an ordered pair is on the graph of an exponential function, given its equation.</p>
<p>Unit 6: Exponential Functions Lesson 3: Features of Exponential Functions</p>	<p>F.IF.4 F.IF.6 F.IF.7, e</p>	<p>Describe the end behavior of an exponential function, given its graph.</p>

		<p>Sketch the graph of an exponential function, given a description of the situation it represents.</p>
<p>Unit 6: Exponential Functions Lesson 4: Transform Exponential Functions</p>	F.BF.3	<p>Describe the effect a given parameter has on a graph.</p> <p>Determine the equation of an exponential function that is a transformation of another exponential function, given the equation of the original function.</p> <p>Determine the equation of an exponential function that is a transformation of the parent exponential function, from its graph.</p> <p>Graph an exponential function, given the graph of its parent function.</p>
<p>Unit 6: Exponential Functions Lesson 5: Interpret Exponential Graphs</p>	F.IF.4	<p>Interpret key features of an exponential function, from a graph, in terms of the real-world context it represents.</p>
<p>Unit 6: Exponential Functions Lesson 6: Average Rate of Change</p>	F.IF.6 F.LE.1, b	<p>Calculate a function's average rate of change over a specified interval, given the equation of the function.</p> <p>Approximate a function's average rate of change over a specified interval, given the graph of the function.</p> <p>Interpret a function's average rate of change.</p>
<p>Unit 6: Exponential Functions Lesson 7: Identify Linear and Exponential Functions</p>	F.LE.1, a, c	<p>Determine ratios of outputs for an exponential function over a given interval.</p> <p>Determine whether a function is linear, exponential, or neither linear nor exponential, given a set or table of ordered pairs.</p> <p>Determine whether a situation can be modeled by a linear function or an exponential function.</p> <p>Determine differences in outputs for a linear function over a given interval.</p>
<p>Unit 6: Exponential Functions Lesson 8: Your Choice</p>	A.REI.10 F.BF.3 F.IF.4 F.IF.6 F.IF.7	<p>You may use today's lesson time to</p> <ul style="list-style-type: none"> <li>• Complete work in progress.</li> <li>• Review prior lessons in the unit to prepare for the Unit Test.</li> </ul>

	F.IF.9 F.LE.1, a-c	<ul style="list-style-type: none"> <li>• Post or respond to posts on the discussion board for the Exchange Ideas activity in this unit.</li> <li>• Prepare for your state standardized test.</li> </ul> <p>Go on to the next lesson.</p>
Unit 6: Exponential Functions Lesson 9: Multiple Representations	F.IF.9	Compare key features of two functions represented in different ways.
Unit 6: Exponential Functions Lesson 10: Unit Review	A.REI.10 F.BF.3 F.IF.4 F.IF.6 F.IF.7 F.IF.9 F.LE.1, a-c	<p>Use today's lesson time to prepare for the Unit Test. You may</p> <ul style="list-style-type: none"> <li>• Revisit Review activities located before each quiz in the unit.</li> <li>• Look at the Summary activities in each lesson.</li> <li>• Read through the Reference Guide pages linked in each lesson.</li> <li>• Ask for help on any Practice problems you did not fully understand.</li> </ul>
Unit 6: Exponential Functions Lesson 11: Unit Test	A.REI.10 F.BF.3 F.IF.4 F.IF.6 F.IF.7 F.IF.9 F.LE.1, a-c	Demonstrate knowledge on concepts in this unit.
Unit 7: Sequences and Modeling with Functions Lesson 1: Exchange Ideas	F.BF.1 F.BF.2	<p>Write an explicit rule for a geometric sequence.</p> <p>Use an explicit rule for a geometric sequence to find a given term in the sequence.</p> <p>Write a recursive rule for a geometric sequence.</p> <p>Use a recursive rule for a geometric sequence to find a given term in the sequence.</p> <p>Write the rule for a geometric sequence that models a real-world situation.</p> <p>Convert from a recursive rule for a geometric sequence to the explicit rule.</p>

		<p>Convert from an explicit rule for a geometric sequence to the recursive rule.</p> <p>Solve a real-world problem by writing and using an explicit rule for a geometric sequence.</p> <p>Determine the common ratio for a geometric sequence.</p>
<p>Unit 7: Sequences and Modeling with Functions Lesson 2: Sequences and Patterns</p>	<p>F.IF.3</p>	<p>Explain how a sequence is a function.</p> <p>Describe the pattern in a sequence.</p> <p>Determine whether a sequence is arithmetic, geometric, or neither arithmetic nor geometric.</p> <p>Display a sequence as a graph, given the list of terms.</p> <p>Write a sequence as a list of terms, given its graph.</p> <p>Identify terms in a sequence from a list or a graph.</p>
<p>Unit 7: Sequences and Modeling with Functions Lesson 3: Arithmetic Sequences</p>	<p>F.BF.1, a F.BF.2</p>	<p>Write an explicit rule for an arithmetic sequence.</p> <p>Use an explicit rule for an arithmetic sequence to find a given term in the sequence.</p> <p>Solve a real-world problem by writing and using an explicit rule for an arithmetic sequence.</p> <p>Write a recursive rule for an arithmetic sequence.</p> <p>Use a recursive rule for an arithmetic sequence to find a given term in the sequence.</p> <p>Write the rule for an arithmetic sequence that models a real-world situation.</p> <p>Convert from a recursive rule for an arithmetic sequence to the explicit rule.</p>

		<p>Convert from an explicit rule for an arithmetic sequence to the recursive rule.</p> <p>Determine the common difference for an arithmetic sequence.</p>
<p>Unit 7: Sequences and Modeling with Functions Lesson 4: Geometric Sequences</p>	<p>F.BF.1, a F.BF.2</p>	<p>Write an explicit rule for a geometric sequence.</p> <p>Use an explicit rule for a geometric sequence to find a given term in the sequence.</p> <p>Write a recursive rule for a geometric sequence.</p> <p>Use a recursive rule for a geometric sequence to find a given term in the sequence.</p> <p>Write the rule for a geometric sequence that models a real-world situation.</p> <p>Convert from a recursive rule for a geometric sequence to the explicit rule.</p> <p>Convert from an explicit rule for a geometric sequence to the recursive rule.</p> <p>Solve a real-world problem by writing and using an explicit rule for a geometric sequence.</p> <p>Determine the common ratio for a geometric sequence.</p>
<p>Unit 7: Sequences and Modeling with Functions Lesson 5: Extended Problems: Sequences</p>	<p>A.CED.2</p>	<p>Determine the slope of a line, given two points on the line</p> <p>Determine the x- and y-intercepts of a line, given its equation.</p>
<p>Unit 7: Sequences and Modeling with Functions Lesson 6: Function Parameters</p>	<p>F.LE.5</p>	<p>Interpret the parameters in a linear function in terms of the real-world situation it represents.</p> <p>Interpret the parameters in an exponential function in terms of the real-world situation it represents.</p>
<p>Unit 7: Sequences and Modeling with Functions Lesson 7: Model Linear Relationships</p>	<p>F.BF.1, a F.LE.2</p>	<p>Determine the function equation that models a linear relationship, given its graph.</p>

		<p>Determine the function equation that models a linear relationship, given a description.</p> <p>Determine the function equation that models a linear relationship, given a set or table of ordered pairs.</p>
<p>Unit 7: Sequences and Modeling with Functions Lesson 8: Model Exponential Relationships</p>	<p>F.BF.1, a F.LE.2</p>	<p>Determine the function equation that models an exponential relationship, given its graph.</p> <p>Determine the function equation that models an exponential relationship, given a description.</p> <p>Determine the function equation that models an exponential relationship, given a set or table of ordered pairs.</p>
<p>Unit 7: Sequences and Modeling with Functions Lesson 9: Unit Review</p>	<p>A.CED.2 F.BF.1 F.BF.2 F.LE.2 F.LE.5</p>	<p>Use today's lesson time to prepare for the Unit Test. You may</p> <ul style="list-style-type: none"> <li>• Revisit Review activities located before each quiz in the unit.</li> <li>• Look at the Summary activities in each lesson.</li> <li>• Read through the Reference Guide pages linked in each lesson.</li> <li>• Ask for help on any Practice problems you did not fully understand.</li> </ul>
<p>Unit 7: Sequences and Modeling with Functions Lesson 10: Unit Test</p>	<p>A.CED.2 F.BF.1, a F.BF.2 F.LE.2 F.LE.5</p>	<p>Demonstrate knowledge on concepts in this unit.</p>
<p>Unit 8: Algebra 1 Semester A Assessment Lesson 1: Your Choice</p>	<p>A.CED.1 A.CED.2 A.CED.4 A.REI.1 A.REI.3 A.REI.10 A.SSE.1, a-b A.SSE.3,c F.BF.1, a F.BF.2 F.BF.3 F.IF.1 F.IF.2 F.IF.4 F.IF.6</p>	<p>Demonstrate knowledge on concepts in this semester.</p>

	<p>F.IF.7, a-b, e                  F.IF.9                  F.LE.1, a-c                  F.LE.2                  F.LE.5                  N.RN.1                  N.RN.2                  N.Q.1                  N.Q.2                  N.Q.3</p>	
<p>Unit 8: Algebra 1 Semester A                  Assessment                  Lesson 2: Semester A Test, Parts 1 and                  2</p>	<p>A.CED.1                  A.CED.2                  A.CED.4                  A.REI.1                  A.REI.3                  A.REI.10                  A.SSE.1, a-b                  A.SSE.3,c                  F.BF.1, a                  F.BF.2                  F.BF.3                  F.IF.1                  F.IF.2                  F.IF.4                  F.IF.6                  F.IF.7, a-b, e                  F.IF.9                  F.LE.1                  F.LE.2                  F.LE.5                  N.RN.1                  N.RN.2                  N.Q.1                  N.Q.2                  N.Q.3</p>	<p>Demonstrate knowledge on concepts in this semester.</p>