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Algebra 2: Alignment Table

Semester	A Unit 1	A Unit 2	A Unit 3	A Unit 4	A Unit 5	A Unit 6	A Unit 7	A Unit 8	B Unit 1	B Unit 2	B Unit 3	B Unit 4	B Unit 5	B Unit 6	B Unit 7	B Unit 8
N.CN.A.1					x				x							
N.CN.A.2					x				x							
N.CN.C.7					x				x							

N.CN.C.8					x											
N.CN.C.9						x			x							
A.SSE.A.1.a				x					x							
A.SSE.A.1.b				x					x							
A.SSE.A.2						x			x	x						
A.SSE.B.3.c										x						
A.SSE.B.4							x		x							
A.APR.A.1.a				x					x							
A.APR.A.2									x			x				
A.APR.B.3						x	x		x							
A.APR.D.6												x				
A.APR.D.7												x				
A.CED.A.1	x	x							x	x	x	x				
A.CED.A.2.a		x	x						x				x			
A.CED.A.2.b		x	x										x			
A.CED.A.3		x	x						x				x			
A.CED.A.4			x													
A.CED.A.5	x															
A.REI.A.2												x	x			
A.REI.B.4						x			x							
A.REI.C.5			x						x							
A.REI.C.6			x						x							

A.REI.D.10		x														
A.REI.D.12		x														
F.IF.B.4							x	x	x			x	x	x		
F.IF.B.5														x		
F.IF.C.7		x							x	x	x			x		
F.IF.C.7b								x	x							
F.IF.C.7c							x		x				x			
F.IF.C.7d												x				
F.IF.C.7e															x	
F.IF.C.8										x	x			x		
F.IF.C.8b										x						
F.IF.C.9														x		
F.IF.C.10															x	
F.BF.A.1b														x		
F.BF.A.1c														x		
F.BF.B.3											x			x		
F.BF.B.4a														x		
F.BF.B.5											x					
F.LE.A.2										x						
F.LE.A.3										x						
F.LE.A.4										x	x					
F.LE.B.5										x						

F.TF.A.1																x	
F.TF.A.2																x	
F.TF.B.5																x	
S.ID.A.4																	x
S.IC.A.1																	x
S.IC.A.2																	x
S.IC.B.3																	x
S.IC.B.4																	x
S.IC.B.5																	x
S.IC.B.6																	x

Algebra 2A: Course Map

Unit 1: Equations and Inequalities Review

Idaho Standards	Unit Objectives
A.CED.A.5: Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving an equation. A.CED.A.1: Create one-variable equations and inequalities to solve problems, including linear, quadratic, rational, and exponential functions.	• solve inequalities and equations that are the same and different from each other. • describe why it is important to solve literal equations.
Lesson 1: Review of Solving Multi-step Equations	
Lesson Objectives 1. solve multi-step equations.	Assessments • Objective 1: U1A1: Solving Multi-step Equations Review,

○ correlation: A.CED.A.1 2. use the rules of properties. ○ correlation: A.CED.A.1	U1D1: Swimming Pool ● Objective 2: U1A1: Solving Multi-step Equations Review, U1D1: Swimming Pool
Lesson 2: Solving Multi-Step Inequalities Review	
Lesson Objectives 1. solve multi-step inequalities ○ correlation: A.CED.A.1	Assessments ● Objective 1: U1A2: Solving Multi-Step Inequalities Review
Lesson 3: Literal Equations Review	
Lesson Objectives 1. manipulate and solve literal equations. ○ correlation: A.CED.A.5 2. solve real life applications. ○ correlation: A.CED.A.5	Assessments ● Objective 1: U1A3: Literal Equations Review, U1A4: Unit 1 Project ● Objective 2: U1A3: Literal Equations Review, U1A4: Unit 1 Project

Unit 2: Linear Functions and Inequalities

Idaho Standards	Unit Objectives
A.CED.A.1: Create one-variable equations and inequalities to solve problems, including linear, quadratic, rational, and exponential functions. A.CED.A.2.a: Interpret the relationship between two or more quantities. Define variables to represent the quantities and write equations to show the relationship. A.CED.A.2.b: Interpret the relationship between two or more quantities. Use graphs to show a visual representation of the relationship while adhering to appropriate labels and scales. A.CED.A.3: Represent constraints using equations or inequalities and interpret solutions as viable or non-viable options in a modeling context. A.REI.D.10: Demonstrate understanding that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane. Show that any point on the graph of an	● model linear functions to solve problems. ● use real-world data to write an equation of a line.

equation in two variables is a solution to the equation. A.REI.D.12: Graph the solutions to a linear inequality in two variables as a half- plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes. F.IF.C.7: Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.	
Lesson 1: Create Linear Functions	
Lesson Objectives 1. write an equation of a line in slope intercept form given the slope and a point. ○ correlation: A.CED.A.1, A.CED.A.2.a, A.CED.A.2.b 2. write an equation of a line in slope intercept form given two points. ○ correlation: A.CED.A.1, A.CED.A.2.a, A.CED.A.2.b	Assessments ● Objective 1: U2A1: Create Linear Functions ● Objective 2: U2A1 Create Linear Functions
Lesson 2: Graph Linear Functions	
Lesson Objectives 1. graph linear functions. ○ Correlation: F.IF.C.7, A.REI.D.10	Assessments ● Objective 1: U2A2: Graph Linear Functions
Lesson 3: Create Linear Inequalities	
Lesson Objectives 1. use inequalities in real life problems. ○ correlation: A.CED.A.3 2. create linear inequalities and solve them analytically, graphically and numerically. ○ correlation: A.CED.A.3	Assessments ● Objective 1: U2A3: Create Linear Inequalities, U2D1: Can You Solve It? ● Objective 2: U2A3: Create Linear Inequalities, U2D1: Can You Solve It?

Lesson 4: Graph Linear Inequalities	
Lesson Objectives - graph linear inequalities. - correlation: A.REI.D.12 - solve linear inequalities. - correlation: A.CED.A.3	Assessments - Objective 1: U2A4: Graph Linear Inequalities, U2A5: Sweatshirt Sale Project - Objective 2: U2A4: Graph Linear Inequalities, U2A5:Sweatshirt Sale Project

Unit 3: Systems of Linear Equations and Inequalities

Idaho Standards	Unit Objectives
A.CED.A.2a: Interpret the relationship between two or more quantities. Define variables to represent the quantities and write equations to show the relationship. A.CED.A.2b: Interpret the relationship between two or more quantities. Use graphs to show a visual representation of the relationship while adhering to appropriate labels and scales. A.CED.A.3: Represent constraints using equations or inequalities and interpret solutions as viable or non-viable options in a modeling context. A.CED.A.4: Represent constraints using systems of equations and/or inequalities and interpret solutions as viable or non-viable options in a modeling context. A.REI.C.5: 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. A.REI.C.6: Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.	- apply and solve systems of equations. - solve a system of equations by applying the best method.
Lesson 1: Solve Linear Systems by Graphing	
Lesson Objectives describe a system of equations.	Assessments Objective 1: U3A1: Solve Linear Systems by Graphing

○ correlation: A.CED.A.2.b, 2. identify the possible solutions for a system of equations. ○ correlation: A.CED.A.2.b, A.CED.A.3, A.CED.A.4, A.REI.C.6 3. solve systems of equations by graphing. ○ correlation: A.CED.A.2.b, A.CED.A.3, A.CED.A.4, A.REI.C.6	● Objective 2: U3A1: Solve Linear Systems by Graphing ● Objective 3: U3A1: Solve Linear Systems by Graphing, U3D1: Find the values of the unknown shapes
Lesson 2: Solve Linear Systems by Substitution	
Lesson Objectives 1. solve a system of equations using substitution. ○ correlation: A.CED.A.2.a, A.CED.A.3, A.CED.A.4, A.REI.C.5, A.REI.C.6	Assessments ● Objective 1: U3A2: Solve Linear Systems by Substitution, U3D1: Find the values of the unknown shapes
Lesson 3: Solve Systems by Elimination	
Lesson Objectives 1. solve a system of equations by elimination method. ○ correlation: A.CED.A.2.a, A.CED.A.3, A.CED.A.4, A.REI.C.5, A.REI.C.6	Assessments ● Objective 1: U3A3: Solve Systems by Elimination, U3D1: Find the values of the unknown shapes
Lesson 4: Systems of Linear Inequalities	
Lesson Objectives 1. solve a system of inequalities. ○ correlation: A.CED.A.3, A.CED.A.4 2. describe what the solution of a system of inequalities means. ○ correlation: A.CED.A.2.b, A.CED.A.3, A.CED.A.4	Assessments ● Objective 1: U3A4: Systems of Linear Inequalities, U3A5: Unit 3 Project ● Objective 2: U3A4: Systems of Linear Inequalities, U3A5: Unit 3 Project

Unit 4: Operations with Polynomials

Idaho Standards	Unit Objectives
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A.SSE.A.1a: Interpret parts of an expression, such as terms, factors, and coefficients. A.SSE.A.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.APR.A.1.a: Demonstrate understanding that polynomials form a system analogous to the integers; namely, they are closed under certain operations. Perform operations on polynomial expressions (addition, subtraction, multiplication, division) and compare the system of polynomials to the system of integers when performing operations.	- perform polynomial operations. - classify polynomials.
Lesson 1: Review of Polynomial Basics	
Lesson Objectives - classify polynomials by their degrees and number of terms. - correlation: A.SSE.A.1a, A.SSE.A.1b - determine if an expression is a polynomial. - correlation: A.SSE.A.1a, A.SSE.A.1b	Assessments - Objective 1: U4A1: Review of Polynomial Basics - Objective 2: U4A1: Review of Polynomial Basics
Lesson 2: Adding and Subtracting Polynomials	
Lesson Objectives - add and subtract polynomials. - correlation: A.APR.A.1.a	Assessments Objective 1: U4A2: Adding and Subtracting Polynomials
Lesson 3: Multiplying Polynomials	
Lesson Objectives - use the distributive property to multiply a monomial to a polynomial. - correlation: A.APR.A.1.a - determine the product of a binomial. - correlation: A.APR.A.1.a - determine how the square of a binomial is calculated. - correlation: A.APR.A.1.a - use the binomial theorem to multiply polynomials.	Assessments - Objective 1: U4A3: Multiplying Polynomials - Objective 2: U4A3: Multiplying Polynomials - Objective 3: U4A3: Multiplying Polynomials - Objective 4: U4A3: Multiplying Polynomials, U4D1: Pascal's Triangle - Objective 5: U4A3: Multiplying Polynomials

○ correlation: A.APR.A.1.a 5. determine the product of a polynomial in real-world situations. ○ correlation: A.APR.A.1.a	
Lesson 4: Dividing Polynomials	
Lesson Objectives - utilize long division to divide a polynomial function. ○ correlation: A.APR.A.1.a - utilize synthetic division to divide a polynomial function. ○ correlation: A.APR.A.1.a	Assessments • Objective 1: U4A4: Dividing Polynomials • Objective 2: U4A4: Dividing Polynomials

Unit 5: Complex Numbers

Idaho Standards	Unit Objectives
N.CN.A.1: Know there is a complex number i such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real. N.CN.A.2: Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, multiply complex numbers. N.CN.C.7: Solve quadratic equations with real coefficients that have complex solutions. N.CN.C.8: Extend polynomial identities to the complex numbers. For example, rewrite $x^2 + 4$ as $(x + 2i)(x - 2i)$.	• perform operations with complex numbers and determine that the expression is in simplest form. • use the conjugate to divide complex numbers.
Lesson 1: Complex Number Basics	
Lesson Objectives - simplify imaginary numbers. ○ correlation: N.CN.A.1 - write complex numbers in standard form. ○ correlation: N.CN.A.1	Assessments • Objective 1: U5A1: Complex Number Basics, U5D1: Complex Number in the Real World • Objective 2: U5A1: Complex Number Basics, U5D1: Complex Number in the Real World
Lesson 2: Adding and Subtracting Complex Numbers	

Lesson Objectives - add and subtract complex numbers. - correlation: N.CN.A.1, N.CN.A.2 - simplify complex numbers. - correlation: N.CN.A.1, N.CN.A.2	Assessments - Objective 1: U5A2: Adding and Subtracting Complex Numbers - Objective 2: U5A2: Adding and Subtracting Complex Numbers
Lesson 3: Multiplying Complex Numbers	
Lesson Objectives - multiply complex numbers. - correlation: N.CN.A.1, N.CN.A.2	Assessments Objective 1: U5A3: Multiplying Complex Numbers
Lesson 4: Dividing Complex Numbers	
Lesson Objectives - divide complex numbers and write the answer in standard form. - correlation: N.CN.A.1, N.CN.A.2	Assessments Objective 1: U5A4: Dividing Complex Numbers
Lesson 5: Factor Complex Numbers	
Lesson Objectives - write a quadratic equation from its solutions. - correlation: N.CN.C.7, N.CN.C.8 - factor quadratics that will result in imaginary answers. - correlation: N.CN.C.7, N.CN.C.8	Assessments - Objective 1: U5A5: Factor Complex Numbers - Objective 2: U5A5: Factor Complex Numbers, U5A6: Complex Factors

Unit 6: Quadratic Functions

Idaho Standards	Unit Objectives
A.REI.B.4: Solve quadratic equations in one variable. A.SSE.A.2: Use the structure of an expression to identify ways to rewrite it. A.APR.B.2: Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a, the remainder on division by $x -$	- solve quadratic functions using the best method. - describe key features of quadratic functions. - apply knowledge of quadratic functions and solving

a is $p(a)$, so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$. A.APR.B.3: Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial. N.CN.C.9: Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.	quadratic equations to real-world problems.
Lesson 1: Review of Factoring	
Lesson Objectives - factor using one of the six ways to factor polynomials. - correlation: A.SSE.A.2 - factor special case polynomials. - correlation: A.SSE.A.2	Assessments - Objective 1: U6A1: Review of Factoring - Objective 2: U6A1: Review of Factoring
Lesson 2: Solve Quadratics by Graphing	
Lesson Objectives - solve quadratic equations by graphing. - correlation: A.REI.B.4, A.SSE.A.2, A.APR.B.3	Assessments Objective 1: U6A2: Solve Quadratics by Graphing
Lesson 3: Solve Quadratics by Factoring	
Lesson Objectives - solve quadratic equations by factoring. - correlation: A.REI.B.4, A.SSE.A.2, A.APR.B.3	Assessments Objective 1: U6A3: Solve Quadratics by Factoring, U6D1:Algebra Puzzles, U6A5: Unit 6 Project
Lesson 4: The Remainder Theorem	
Lesson Objectives - use information about factors and remainders to solve problems. - correlation: A.APR.B.2, N.CN.C.9 - find factors of polynomials using the factor theorem and synthetic division. - correlation: A.APR.B.2, N.CN.C.9	Assessments - Objective 1: U6A4: The Remainder Theorem - Objective 2: U6A4: The Remainder Theorem

Unit 7: Graphing Polynomial Functions

Idaho Standards	Unit Objectives
A.SSE.B.4: Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. For example, calculate mortgage payments. A.APR.B.3: Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial. F.IF.B.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 give a verbal description of the relationship. F.IF.C.7c: Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.	- identify key characteristics of a polynomial graph. - write terms and find sums of geometric sequences.
Lesson 1: Rough Sketch Graphs and Problem Solving	
Lesson Objectives - graph quadratic functions to identify key features. - correlation: F.IF.B.4, A.APR.B.3 - solve problems using rough sketch graphs of quadratic functions. - correlation: F.IF.B.4, A.APR.B.3, F.IF.C.7c	Assessments - Objective 1: U7A1: Rough Sketch Graphs and Problem Solving, U7A4: Parabola Graph Investigative Task - Objective 2: U7A1: Rough Sketch Graphs and Problem Solving, U7A4: Parabola Graph Investigative Task
Lesson 2: Graphs of Polynomial Functions	
Lesson Objectives - describe the characteristics of a graph. - correlation: F.IF.B.4, A.APR.B.3, F.IF.C.7cF.IF.4, A.APR.3, F.IF.7c - identify the zeros of a polynomial function by graphing. - correlation: F.IF.B.4, A.APR.B.3, F.IF.C.7c	Assessments - Objective 1: U7A2: Graphs of Polynomial Functions, U7D1: Graphs - Objective 2: U7A2: Graphs of Polynomial Functions, U7D1: Graphs
Lesson 3: Geometric Series	

Lesson Objectives - find the terms of a geometric sequence. - correlation: A.SSE.B.4 - find the sum of a geometric series. - correlation: A.SSE.B.4	Assessments - Objective 1: U7A3: Geometric Series - Objective 2: U7A3: Geometric Series
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Unit 8: Other Functions

Idaho Standards	Unit Objectives
F.IF.B.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 give a verbal description of the relationship. F.IF.C.7.b: Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	- describe what the key features of absolute value functions. - graph absolute value, step and piecewise functions. - apply functions to real-world applications.
Lesson 1: Piecewise Functions	
Lesson Objectives - use piecewise function in real-life problems. - correlation: F.IF.B.4, F.IF.C.7.b - graph and solve piecewise functions. - correlation: F.IF.B.4, F.IF.C.7.b	Assessments - Objective 1: U8A1: Piecewise Functions - Objective 2: U8A1: Piecewise Functions
Lesson 2: Step Functions	
Lesson Objectives - evaluate step functions. - correlation: F.IF.B.4, F.IF.C.7.b - evaluate greatest-integer problems. - correlation: F.IF.B.4, F.IF.C.7.b - apply information about step functions. - correlation: F.IF.B.4, F.IF.C.7.b	Assessments - Objective 1: U8A2: Step Functions, U8A4: Real World Step Function, U8D1: Absolute Value Situation - Objective 2: U8A2: Step Functions, U8A4: Real World Step Function, U8D1: Absolute Value Situation - Objective 3: U8A2: Step Functions, U8A4: Real World Step Function, U8D1: Absolute Value Situation
Lesson 3: Absolute Value Functions	

Lesson Objectives 1. write absolute value equations. ○ correlation: F.IF.B.4, F.IF.C.7.b 2. graph absolute value functions. ○ correlation: F.IF.B.4, F.IF.C.7.b	Assessments ● Objective 1: U8A3: Absolute Value Functions ● Objective 2: U8A3: Absolute Value Functions
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Algebra 2B: Course Map

Unit 1: Review of Algebra 2A

Idaho Standards	Unit Objectives
A.CED.A.1: Create one-variable equations and inequalities to solve problems, including linear, quadratic, rational, and exponential functions. A.CED.A.2a: Interpret the relationship between two or more quantities. Define variables to represent the quantities and write equations to show the relationship. A.CED.A.3: Represent constraints using equations or inequalities and interpret solutions as viable or non-viable options in a modeling context. F.IF.C.7: Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. A.REI.C.5: 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. A.REI.C.6: Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. A.SSE.A.1a: Interpret parts of an expression, such as terms, factors, and coefficients. A.SSE.A.1b: Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret	● use linear equations and systems of equations to solve problems. ● simplify using polynomial operations. ● use quadratic functions to solve problems. ● use special functions to solve problems.

$P(1+r)^n$ as the product of P and a factor not depending on P .

A.APR.A.1a: Demonstrate understanding that polynomials form a system analogous to the integers; namely, they are closed under certain operations. Perform operations on polynomial expressions (addition, subtraction, multiplication, division) and compare the system of polynomials to the system of integers when performing operations.

N.CN.A.1: Know there is a complex number i such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real.

N.CN.A.2: Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, multiply complex numbers.

N.CN.C.7: Solve quadratic equations with real coefficients that have complex solutions.

A.REI.B.4: Solve quadratic equations in one variable.

A.SSE.A.2: Use the structure of an expression to identify ways to rewrite it.

A.APR.A.2: Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a , the remainder on division by $x - a$ is $p(a)$, so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$.

A.APR.B.3: Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.

N.CN.C.9: Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.

A.SSE.B.4: Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. For example, calculate mortgage payments.

F.IF.C.7c: Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.

F.IF.B.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 give a verbal description of the relationship.

F.IF.C.7.b: Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.

Lesson 1: Linear Functions, Linear Inequalities and Linear Systems Review	
Lesson Objectives 1. model linear functions to solve problems. ○ correlation: A.CED.A.1, A.CED.A.2a, A.CED.A.3 2. use real-world data to write an equation of a line. ○ correlation: A.CED.A.1, A.CED.A.2a, A.CED.A.3 3. apply and solve systems of equations. ○ correlation: A.CED.A.2a, A.CED.A.3, A.REI.C.5, A.REI.C.6 4. determine the best method to solve a system of equations. ○ correlation: A.CED.A.2a, A.CED.A.3, A.REI.C.5, A.REI.C.6	Assessments ● Objective 1: U1A1: Linear Functions, Linear Inequalities and Linear Systems Review ● Objective 2: U1A1: Linear Functions, Linear Inequalities and Linear Systems Review ● Objective 3: U1A1: Linear Functions, Linear Inequalities and Linear Systems Review ● Objective 4: U1A1: Linear Functions, Linear Inequalities and Linear Systems Review
Lesson 2: Operations with Polynomial Review	
Lesson Objectives 1. perform polynomial operations. ○ correlation: A.SSE.A.1a, A.SSE.A.1b, A.APR.A.1a 2. apply polynomial operations. ○ correlation: A.SSE.A.1a, A.SSE.A.1b, A.APR.A.1a	Assessments ● Objective 1: U1A2: Operations with Polynomial Review ● Objective 2: U1A2: Operations with Polynomial Review
Lesson 3: Complex Numbers and Quadratic Functions	
Lesson Objectives 1. use the best method to solve a quadratic equation. ○ correlation: A.REI.B.4, A.SSE.A.2, A.APR.B.3, N.CN.C.7 2. analyze and interpret mathematical relationships of quadratic functions. ○ correlation: A.APR.B.2, N.CN.C.9 3. apply knowledge of quadratic functions and solve quadratic equations. ○ correlation: A.REI.B.4, A.SSE.A.2, A.APR.B.3,	Assessments ● Objective 1: U1A3: Complex Numbers and Quadratic Functions ● Objective 2: U1A3: Complex Numbers and Quadratic Functions ● Objective 3: U1A3: Complex Numbers and Quadratic Functions ● Objective 4: U1A3: Complex Numbers and Quadratic Functions ● Objective 5: U1A3: Complex Numbers and Quadratic

N.CN.C.7 - perform operations with complex numbers and determine that the expression is in the simplest form. - correlation: N.CN.A.1. N.CN.A.2 - use the conjugate to divide complex numbers. - correlation: N.CN.A.1. N.CN.A.2	Functions
Lesson 4: Graphing Functions Review	
Lesson Objectives - describe what the characteristics of a graph represent. - correlation: F.IF.B.4, A.APR.B.3, F.IF.C.7c - explain which term of a polynomial is most important when determining the end behavior of the function. - correlation: F.IF.B.4, A.APR.B.3, F.IF.C.7c - find the terms and sums of geometric sequences. - correlation: A.SSE.B.4	Assessments - Objective 1: U1A4: Graphing Functions Review - Objective 2: U1A4: Graphing Functions Review - Objective 3: U1A4: Graphing Functions Review
Lesson 5: Other Functions Review	
Lesson Objectives - find the solution of special functions. - correlation: F.IF.B.4, F.IF.C.7c - evaluate absolute value, step, and piecewise-defined functions. - correlation: F.IF.B.4, F.IF.C.7c - identify key features of graphs of special functions. - correlation: F.IF.B.4, F.IF.C.7c	Assessments - Objective 1: U1A5: Other Functions Review - Objective 2: U1A5: Other Functions Review - Objective 3: U1A5: Other Functions Review

Unit 2: Exponential Functions

Idaho Standards	Unit Objectives
A.SSE.A.2: Use the structure of an expression to identify ways to rewrite it. A.SSE.B.3c: Use the properties of exponents to transform expressions for exponential functions.	- rewrite exponential expressions for different applications and solve. - identify the different properties of exponential function graphs and graph.

F.IF.C.7: Graph functions expressed symbolically and show key features of the graph. Graph simple cases by hand, and use technology to show more complicated cases. F.IF.C.8: Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. F.IF.C.8b: Use the properties of exponents to interpret expressions for exponential functions. Apply to financial situations such as identifying appreciation and depreciation rate for the value of a house or car sometime after its initial purchase. F.LE.A.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.A.3: Use graphs and tables to demonstrate that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function. F.LE.B.5: Interpret the parameters in a linear or exponential function (of the form $f(x) = b^x + k$) in terms of a context. F.LE.A.4: For exponential models, express as a logarithm the solution to $abct = d$ where a, c, and d are numbers and the base b is 2, 10, or e; evaluate the logarithm using technology. A.CED.A.1: Create one-variable equations and inequalities to solve problems, including linear, quadratic, rational, and exponential functions.	• solve application problems that involve exponential functions.
Lesson 1: Review of the Rules of Exponents	
Lesson Objectives 1. use exponents to simplify expressions. ○ correlation: A.SSE.B.3c, A.SSE.A.2 2. explain the rules of exponents. ○ correlation: A.SSE.B.3c	Assessments • Objective 1: U2A1: Review of the Rules of Exponents • Objective 2: U2A1: Review of the Rules of Exponents, U2A6: Outer Space Project
Lesson 2: Review of Rational Exponents	

Lesson Objectives 1. apply mathematical operations using rational exponents. ○ correlation: A.SSE.B.3c, A.SSE.A.2 2. apply the basic rules of exponents to expressions with rational exponents. ○ correlation: A.SSE.B.3c, A.SSE.A.2	Assessments ● Objective 1: U2A2: Review of Rational Exponents, U2A6: Outer Space Project ● Objective 2: U2A2: Review of Rational Exponents, U2A6: Outer Space Project
Lesson 3: Graphing Exponential Functions	
Lesson Objectives 1. use graphs to show exponential growth and decay. ○ correlation: F.IF.C.7, F.IF.C.8, F.IF.C.8b, F.LE.B.5, F.LE.A.4, F.LE.A.2 2. apply growth and decay functions to real-world problems. ○ correlation: F.IF.C.7, F.IF.C.8, F.IF.C.8b, F.LE.B.5, F.LE.A.4, F.LE.A.2	Assessments ● Objective 1: U2A3: Graphing Exponential Functions, U2A6: Outer Space Project ● Objective 2: U2A3: Graphing Exponential Functions
Lesson 4: Solving Exponential Equations	
Lesson Objectives 1. apply the rules of exponents to solve exponential equations. ○ correlation: A.CED.A.1, F.LE.B.5, F.LE.A.2	Assessments ● Objective 1: U2A4: Solving Exponential Equations
Lesson 5: Exponential Growth and Decay	
Lesson Objectives 1. calculate exponential growth and decay. ○ correlation: F.IF.C.7, F.LE.B.5, F.LE.A.4, F.LE.A.2 2. explain the differences and similarities between exponential growth and decay. ○ correlation: F.IF.C.7, F.LE.B.5, F.LE.A.4, F.LE.A.2	Assessments ● Objective 1: U2A5: Exponential Growth and Decay ● Objective 2: U2A5: Exponential Growth and Decay, U2A6: Outer Space Project

Unit 3: Log Functions

Idaho Standards	Unit Objectives
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F.IF.C.7: Graph functions expressed symbolically and show key features of the graph. Graph simple cases by hand, and use technology to show more complicated cases. F.IF.C.8: Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. F.LE.A.4: For exponential models, express as a logarithm the solution to $abct = d$ where a, c, and d are numbers and the base b is 2, 10, or e; evaluate the logarithm using technology. A.CED.A.1: Create one-variable equations and inequalities to solve problems, including linear, quadratic, rational, and exponential functions. F.BF.B.5: Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents. F.BF.B.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. A.SSE.A.1: Interpret expressions that represent a quantity in terms of its context	• rewrite equations between exponential and logarithmic functions using properties of logs. • solve and evaluate logarithmic functions. • identify the different properties of logarithmic function graphs and graph. • solve application problems that involve logarithmic functions.
Lesson 1: Introduction to Logs and Simplifying	
Lesson Objectives 1. change between log functions and exponential functions. ◦ correlation: F.LE.A.4, F.IF.C.8 2. simplify log expressions. ◦ correlation: F.BF.B.5	Assessments • Objective 1: U3A1: Introduction to Logs and Simplifying • Objective 2: U3A1: Introduction to Logs and Simplifying
Lesson 2: Properties of Logs	
Lesson Objectives 1. use logarithms to solve equations. ◦ correlation: F.LE.A.4 2. simplify expressions using the properties of logarithms. ◦ correlation: F.LE.A.4	Assessments • Objective 1: U3A2: Properties of Logs, U3D1: Investigating the Properties of Logarithms • Objective 2: U3A2: Properties of Logs, U3D1: Investigating the Properties of Logarithms

Lesson 3: Graphing Log Functions	
Lesson Objectives - graph logarithmic functions. - correlation: F.IF.C.7, F.BF.B.3 - compare graphs of logarithms to the parent function. - correlation: F.IF.C.7, F.BF.B.3	Assessments - Objective 1: U3A3: Graphing Log Functions - Objective 2: U3A3: Graphing Log Functions
Lesson 4: Solving Log Equations	
Lesson Objectives - use log expressions to solve exponential equations. - correlation: F.LE.A.4 - use the properties of logs to solve equations. - correlation: F.LE.A.4	Assessments - Objective 1: U3A4: Solving Log Equations - Objective 2: U3A4: Solving Log Equations
Lesson 5: Log Functions in the Real World	
Lesson Objectives - show how to solve real-life applications using mathematics. - correlation: F.LE.A.4, A.CED.A.1 - use logarithms in real life. - correlation: F.LE.A.4, A.CED.A.1	Assessments - Objective 1: U3A5: Log Functions in the Real World, U3A6: Log Functions in the Real World - Objective 2: U3A5: Log Functions in the Real World, U3A6: Log Functions in the Real World

Unit 4: Rational Functions

Idaho Standards	Unit Objectives
F.IF.C.7d: Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior. F.IF.B.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 give a verbal description of the relationship. A.APR.D.6: Rewrite simple rational expressions in different	- perform operations with rational expressions. - identify the extraneous solutions of rational expressions. - identify the different properties of rational function graphs. - solve rational equations.

forms using inspection, long division, or, for the more complicated examples, a computer algebra system. A.APR.D.7: Demonstrate understanding that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions. A.CED.A.1: Create one-variable equations and inequalities to solve problems, including linear, quadratic, rational, and exponential functions. A.REI.A.2: Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.	
Lesson 1: Simplifying Rational Expressions	
Lesson Objectives - express, evaluate, model, and apply information about rational expressions. - correlation: A.APR.D.6, A.APR.D.7	Assessments Objective 1: U4A1: Simplifying Rational Expressions, U4D1: Rational Expressions
Lesson 2: Multiplying and Dividing Rational Expressions	
Lesson Objectives - multiply and divide rational expressions. - correlation: A.APR.D.6, A.APR.D.7 - find the extraneous solutions after multiplying and dividing rational expressions. - correlation: A.APR.D.6, A.APR.D.7	Assessments - Objective 1: U4A2: Multiplying and Dividing Rational Expressions - Objective 2: U4A2: Multiplying and Dividing Rational Expressions
Lesson 3: Adding and Subtracting Rational Expressions	
Lesson Objectives - add and subtract rational expressions. - correlation: A.APR.D.6, A.APR.D.7	Assessments Objective 1: U4A3: Adding and Subtracting Rational Expressions
Lesson 4: Rational Equations	
Lesson Objectives	Assessments

1. solve rational equations to find an unknown variable. ○ correlation: A.CED.A.1, A.REI.A.2 2. apply rational equations to real world situations. ○ correlation: A.CED.A.1, A.REI.A.2	● Objective 1: U4A4: Rational Equations; U4A6: Rational Functions Investigative Task ● Objective 2: U4A4: Rational Equations; U4A6: Rational Functions Investigative Task
Lesson 5: Graphing Rational Functions	
Lesson Objectives 1. make observations about graphs of rational functions. ○ correlation: F.IF.C.7d, F.IF.B.4 2. identify key points on the graph of a rational function. ○ correlation: F.IF.C.7d, F.IF.B.4	Assessments ● Objective 1: U4A5: Graphing Rational Functions ● Objective 2: U4A5: Graphing Rational Functions

Unit 5: Radical Functions

Idaho Standards	Unit Objectives
A.CED.A.2a: Interpret the relationship between two or more quantities. Define variables to represent the quantities and write equations to show the relationship. A.CED.A.2b: Interpret the relationship between two or more quantities. Use graphs to show a visual representation of the relationship while adhering to appropriate labels and scales. A.CED.A.3: Represent constraints using equations or inequalities and interpret solutions as viable or non-viable options in a modeling context. A.REI.A.2: Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise. F.IF.B.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 give a verbal description of the relationship. F.IF.C.7b: Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	● explain how radical functions model real-world problems and their solutions. ● identify and graph different properties of radical functions. ● solve systems of non-linear equations.

Lesson 1: Radical Equations	
Lesson Objectives - solve radical equations. - correlation: A.REI.A.2 - identify extraneous solutions of a radical equation. - correlation: A.REI.A.2, A.CED.A.3	Assessments - Objective 1: U5A1: Radical Equations, U5D1: Radical Equations, U5A4: Radical Equations Investigative Task - Objective 2: U5A1: Radical Equations, U5D1: Radical Equations, U5A4: Radical Equations Investigative Task
Lesson 2: Graphing Radical Functions	
Lesson Objectives - show what happens to the graph of a radical function when the function is modified. - correlation: F.IF.B.4, F.IF.C.7b - identify key features of a radical function graph mean. - correlation: F.IF.B.4, F.IF.C.7b	Assessments - Objective 1: U5A2: Graphing Radical Functions - Objective 2: U5A2: Graphing Radical Functions
Lesson 3: Systems of Equations Not Just Linear	
Lesson Objectives - solve systems of non-linear equations. - correlation: A.CED.A.2a, A.CED.A.2b, A.CED.A.3	Assessments Objective 1: U5A3: Systems of Equations Not Just Linear

Unit 6: Mathematical Modeling

Idaho Standards	Unit Objectives
F.BF.B.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. F.BF.B.4a: Solve an equation of the form $f(x) = c$ for a simple function f that has an inverse and write an expression for the inverse. F.IF.B.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 give a verbal description of the relationship.	- use functions to solve real world problems. - apply properties to rewrite, solve and interpret functions. - identify and categorize the key features of a graph. - find inverses of functions.

F.IF.B.5: Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. F.IF.C.7: Graph functions expressed symbolically and show key features of the graph. Graph simple cases by hand, and use technology to show more complicated cases. F.IF.C.8: Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. F.IF.C.9: Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). F.BF.A.1b: Write a function that describes a relationship between two quantities. Functions could include linear, exponential, quadratic, simple rational, radical, logarithmic, and trigonometric. Combine standard function types using arithmetic operations. F.BF.A.1c: Write a function that describes a relationship between two quantities. Functions could include linear, exponential, quadratic, simple rational, radical, logarithmic, and trigonometric. (+) Compose functions.	
Lesson 1: Key Features of Quadratic Function Graphs	
Lesson Objectives - demonstrate how changes to quadratic functions affect their graphs. - correlation: F.IF.B.4, F.BF.B.3, F.IF.C.7, F.IFB..5 - identify key features of quadratic function graphs. - correlation: F.IF.B.4, F.BF.B.3, F.IF.C.7, F.IFB..5	Assessments - Objective 1: U6A1: Key Features of Quadratic Function Graphs, U6D1: Math on the Job, U6A5: Quest for a Tablet Project - Objective 2: U6A1: Key Features of Quadratic Function Graphs, U6D1: Math on the Job
Lesson 2: Using Functions	
Lesson Objectives - solve real world applications using functions. - correlation: F.IF.B.4, F.BF.A.1c	Assessments Objective 1: U6A2: Using Functions, U6A5: Quest for a Tablet
Lesson 3: Operations with Functions	

Lesson Objectives - demonstrate how mathematical operations are applied when working with functions. - correlation: F.IF.C.8, F.BF.A.1b - evaluate using functions. - correlation: F.IF.C.8, F.BF.A.1b	Assessments - Objective 1: U6A3: Operations with Functions, U6A5: Quest for a Tablet - Objective 2: U6A3: Operations with Functions, U6A5: Quest for a Tablet
Lesson 4: Inverse Functions	
Lesson Objectives - find the inverse of a function. - correlation: F.BF.B.4a - distinguish between a function and its inverse. - correlation: F.BF.B.4a	Assessments - Objective 1: U6A4: Inverse Functions - Objective 2: U6A4: Inverse Functions

Unit 7: Trigonometric Functions

Idaho Standards	Unit Objectives
F.TF.A.1: Demonstrate radian measure as the ratio of the arc length subtended by a central angle to the length of the radius of the unit circle. F.TF.A.2: Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle. F.TF.B.5: Model periodic phenomena using trigonometric functions with specified amplitude, frequency, and midline. F.IF.C.7e: Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude. F.IF.C.10: Given algebraic, numeric and/or graphical representations of functions, recognize the function as polynomial, rational, logarithmic, exponential, or trigonometric.	- convert between radians and degrees and find coterminal angles. - analyze common trig ratios using the unit circle. - explain the characteristics, including period, midline, and amplitude of the graphs of trigonometric functions. - show how trigonometric functions are used to model real-life periodic phenomena.
Lesson 1: The Study of Angles	

Lesson Objectives - determine co-terminal angles. - correlation: F.TF.A.1 - compute both degree measure and radian measure used for measurement and how can you convert between the two. - correlation: F.TF.A.1	Assessments - Objective 1: U7A1: The Study of Angles - Objective 2: U7A1: The Study of Angles, U7D1: Music and Math
Lesson 2: The Unit Circle and Identities	
Lesson Objectives - use the unit circle to evaluate trigonometric functions. - correlation: F.TF.A.2 - use reference angles to evaluate trigonometric functions. - correlation: F.TF.A.2	Assessments - Objective 1: U7A2: The Unit Circle and Identities - Objective 2: U7A2: The Unit Circle and Identities
Lesson 3: Graphs of Trigonometric Functions	
Lesson Objectives - identify the key features in graphs such as the period, amplitude and midline tell us about the trig functions they represent. - correlation: F.IF.C.7e - graph trig functions. - correlation: F.IF.C.7e, F.IF.C.10	Assessments - Objective 1: U7A3: Graphs of Trigonometric Functions, U7A5: Trig Values and Graph Characteristics - Objective 2: U7A3: Graphs of Trigonometric Functions, U7A5: Trig Values and Graph Characteristics
Lesson 4: Trigonometric Models	
Lesson Objectives - use a graph to find trig equations. - correlation: F.TF.B.5 - explain real world applications exist in relation to trigonometric models. - correlation: F.TF.B.5	Assessments - Objective 1: U7A4: Trigonometric Models - Objective 2: U7A4: Trigonometric Models

Unit 8: Inferences and Conclusions from Data

Idaho Standards	Unit Objectives
S.IC.A.1: Understand statistics as a process for making inferences about population parameters based on a random sample from that population. S.IC.A.2: Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. S.IC.B.3: Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each. S.IC.B.4: Use data from a sample survey to estimate a population mean or proportion and a margin of error. S.IC.B.5: Use data from a randomized and controlled experiment to compare two treatments; use margins of error to decide if differences between treatments are significant. S.IC.B.6: Evaluate reports of statistical information based on data. S.ID.A.4: Interpret differences in shape, center, and spread in the context of the variables accounting for possible effects of extreme data points (outliers) for measurement variables.	• compute the center and spread measurements for a set of data. • explain what normal distribution is and how it works for all data sets. • analyze how sample surveys, experiments, and observational studies are used. • explain if randomization relates to real world data.
Lesson 1: Measures of Data	
Lesson Objectives 1. find measures of central tendency. ◦ correlation: S.IC.A.1, S.IC.B.4 2. find the measures of dispersion. ◦ correlation: S.IC.A.1, S.IC.B.4	Assessments • Objective 1: U8A1: Measures of Data, U8D1: Olympics, U8A6: Final Grades Project • Objective 2: U8A1: Measures of Data, U8D1: Olympics
Lesson 2: Normal Distribution	
Lesson Objectives 1. describe how continuous data is different from discrete data.	Assessments • Objective 1: U8A2: Normal Distribution • Objective 2: U8A2: Normal Distribution, U8A6: Final

○ correlation: S.IC.A.1, S.IC.B.4 2. describe how normal distributions are used when analyzing continuous data. ○ correlation: S.IC.A.1, S.IC.B.4 3. analyze how the empirical rules be used to determine probability of data. ○ correlation: S.IC.A.2	Grades Project ● Objective 3: U8A2: Normal Distribution
Lesson 3: Sampling in Data	
Lesson Objectives 1. use sampling when analyzing data. ○ correlation: S.IC.B.3, S.IC.B.4, S.IC.B.5 2. identify different techniques used when sampling data. ○ correlation: S.IC.B.3, S.IC.B.4, S.IC.B.5	Assessments ● Objective 1: U8A3: Sampling in Data, U8A6: Final Grades Project ● Objective 2: U8A3: Sampling in Data, U8A6: Final Grades Project
Lesson 4: Experiments and Observational Studies	
Lesson Objectives 1. use experimental and observational studies to answer real-world questions. ○ correlation: S.IC.B.3, S.IC.B.4, S.IC.B.5	Assessments ● Objective 1: U8A4: Experiments and Observational Studies, U8A6: Final Grades Project
Lesson 5: Conclusions from Data	
Lesson Objectives 1. explain why the process used to collect data is important. ○ correlation: S.IC.B.6 2. demonstrate the guidelines that exist when designing a statistical study. ○ correlation: S.IC.B.6 3. explain why the Central Limit Theorem is a powerful tool when sampling distributions. ○ correlation: S.IC.B.6	Assessments ● Objective 1: U8A5: Conclusions from Data, U8A6: Final Grades Project ● Objective 2: U8A5: Conclusions from Data ● Objective 3: U8A5: Conclusions from Data