Illustrative Mathematics: Algebra I Pacing

*Total of 149 days of instruction including the optional lessons.

Unit 2 – Linear Equations, Inequalities, and Systems (29 days)

Date		Lesson	Standards
___/___/___	Pre-Unit Assessment (Complete on the 1st day of school)		
___/___/___	Writing & Modeling with Equations	L1: Planning a Pizza Party	HSA-CED.A.2, HSA-CED.A.3, HSN-Q.A.2
___/___/___		L2: Writing Equations to Model Relationships (Part 1)	HSA-CED.A.2, HSA-CED.A.3
___/___/___		L3: Writing Equations to Model Relationships (Part 2)	HSA-CED.A.2, HSA-CED.A.3, HSF-LE.A.2
___/___/___		L4: Equations & Their Solutions	HSA-REI.A, HSA-REI.B.3
___/___/___		L5: Equations & Their Graphs	HSA-CED.A.2, HSA-CED.A.3, HSA-REI.D.10
___/___/___	Manipulating Equations & Understanding Their Structure	L6: Equivalent Equations	HSA-CED.A.2, HSA-REI.A, HSA-REI.A.1, HSA-SSE.A.1
___/___/___		L7: Explaining Steps for Rewriting Equations	HSA-REI.A, HSA-REI.A.1
___/___/___		L8: Which Variable to Solve for? (Part 1)	HSA-CED.A.4, HSA-REI.B.3
___/___/___		L9: Which Variable to Solve for? (Part 2)	HSA-CED.A.3, HSA-CED.A.4, HSA-REI.B.3
___/___/___		L10: Connecting Equations to Graphs (Part 1)	HSA-CED.A.3, HSA-CED.A.4, HSA-REI.D.10
___/___/___		L11: Connecting Equations to Graphs (Part 2)	HSA-CED.A.4, HSA-REI.D.10
___/___/___	Systems of Linear Equations in Two Variables	L12: Writing & Graphing Systems of Linear Equations	HSA-CED.A.3, HSA-REI.A, HSA-REI.C.6
___/___/___		L13: Solving Systems by Substitution	HSA-REI.C.6
___/___/___		L14: Solving Systems by Elimination (Part 1)	HSA-REI.C.5, HSA-REI.C.6
___/___/___		L15: Solving Systems by Elimination (Part 2)	HSA-REI.C.5, HSA-REI.C.6
___/___/___		L16: Solving Systems by Elimination (Part 3)	HSA-REI.C.5, HSA-REI.C.6

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Date	Unit	Lesson	Standards
___/___/___		L17: Systems of Linear Equations & Their Solutions	HSA-CED.A.3, HSA-REI.C.6
___/___/___	Mid-Unit Assessment		
___/___/___	Linear Inequalities in One Variable	L18: Representing Situations with Inequalities	HSA-CED.A.3, HSN-Q.A.2
___/___/___		L19: Solutions to Inequalities	HSA-CED.A.1, HSA-REI.B.3
___/___/___		L20: Writing & Solving Inequalities in One Variable	HSA-CED.A.1, HSA-CED.A.3, HSA-REI.B.3
___/___/___	Linear Inequalities in Two Variables	L21: Graphing Linear Inequalities in Two Variables (Part 1)	HSA-REI.D.12
___/___/___		L22: Graphing Linear Inequalities in Two Variables (Part 2)	HSA-CED.A.3, HSA-REI.D.10, HSA-REI.D.12
___/___/___		L23: Solving Problems with Inequalities in Two Variables	HSA-CED.A.3, HSA-REI.D.12
___/___/___	Systems of Linear Inequalities in Two Variables	L24: Solutions to Systems of Linear Inequalities in Two Variables	HSA-CED.A.3, HSA-REI.D.12
___/___/___		L25: Solving Problems with Systems of Linear Inequalities in Two Variables	HSA-REI.D.12
___/___/___		L26: Modeling with Systems of Inequalities in Two Variables	HSA-CED.A.3, HSA-REI.D.12, HSN-Q.A.2
___/___/___	End-Unit Assessment		

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Unit 3 – Two Variable Statistics (11 days)

Date		Lesson	Standards
___/___/___	Pre-Unit Assessment (Complete this after the end of unit 2 assessment)		
___/___/___	Two-way Tables	L1: Two-way Tables	HSS-ID.B.5
___/___/___		L2: Relative Frequency Tables	HSS-ID.B.5
___/___/___		L3: Associations in Categorical Data	HSS-ID.B.5
___/___/___	Scatterplots	L4: Linear Models	HSS-ID.B.6, HSS-ID.B.6.a, HSS-ID.B.6.c, HSS-ID.C.7
___/___/___		L5: Fitting Lines	HSS-ID.B.6, HSS-ID.B.6.b, HSS-ID.B.6.c, HSS-ID.C.7
___/___/___		L6: Residuals	HSN-Q.A.3, HSS-ID.B.6.a, HSS-ID.B.6.b, HSS-ID.B.6.c
___/___/___	Correlation Coefficients	L7: The Correlation Coefficient	HSS-ID.B.6, HSS-ID.C.8
___/___/___		L8: Using the Correlation Coefficient	HSS-ID.B.6, HSS-ID.B.6.a, HSS-ID.C.7, HSS-ID.C.8, HSS-ID.C.9
___/___/___		L9: Casual Relationships	HSS-ID.A, HSS-ID.B.5, HSS-ID.B.6, HSS-ID.C.7, HSS-ID.C.8, HSS-ID.C.9
___/___/___	Estimating Lengths	L10: Fossils and Flags*optional lesson*	HSS-ID.B.6, HSS-ID.C.7, HSS-ID.C.8, HSS-ID.C.9
___/___/___	End-Unit Assessment		

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Unit 4 – Functions (21 days)

Date		Lesson	Standards
___/___/___	Pre-Unit Assessment (Complete this after the end of unit 3 assessment)		
___/___/___	Functions & Their Representations	L1: Describing & Graphing Situations	HSF-IF.A.1, HSF-IF.B.4
___/___/___		L2: Function Notation	HSF-IF.A.1, HSF-IF.A.2, HSF-IF.B.4
___/___/___		L3: Interpreting & Using Function Notation	HSF-IF.A.2, HSF-IF.B.4
___/___/___		L4: Using Function Notation to Describe Rules (Part 1)	HSF-BF.A.1, HSF-BF.A.1.a, HSF-IF.A.1, HSF-IF.A.2, HSF-IF.B.4, HSF-IF.C
___/___/___		L5: Using Function Notation to Describe Rules (Part 2)*	HSA-REI.A.1, HSF-IF.A.2, HSF-IF.B.4, HSF-IF.C.7
___/___/___	Analyzing & Creating Graphs of Functions	L6: Features of Graphs	HSF-IF.B.4
___/___/___		L7: Using Graphs to Find Average Rate of Change	HSF-IF.B.6
___/___/___		L8: Interpreting & Creating Graphs	HSF-IF.B.4, HSF-IF.B.6, HSN-Q.A, HSN-Q.A.2
___/___/___		L9: Comparing Graphs	HSA-REI.D.11, HSF-IF.B.4, HSF-IF.B.6
___/___/___	Mid-Unit Assessment		
___/___/___	A Closer Look at Inputs & Outputs	L10: Domain & Range (Part 1)	HSF-IF.B, HSF-IF.B.5
___/___/___		L11: Domain & Range (Part 2)	HSF-IF.B.4, HSF-IF.B.5
___/___/___		L12: Piecewise Functions	HSF-IF.A.2, HSF-IF.B.5, HSF-IF.C, HSF-IF.C.7, HSF-IF.C.7.b
___/___/___		L13: Absolute Value Functions (part 1)	HSF-IF.C, HSF-IF.C.7.b
___/___/___		L14: Absolute Value Functions (part 2)	HSF-BF.A.1, HSF-BF.A.1.a, HSF-BF.B.3, HSF-IF.C, HSF-IF.C.7.b
___/___/___	Inverse Functions	L15: Inverse Functions	HSF-BF.B.4
___/___/___		L16: Finding & Interpreting Inverse Functions	HSA-CED.A.4, HSF-BF.B.4
___/___/___		L17: Writing Inverse Functions to Solve Problems	HSF-BF.A.1, HSF-BF.B.4, HSF-BF.B.4.a, HSF-IF.A.2, HSF-IF.B.4, HSS-ID.B.6.a, HSS-ID.B.6.c

___/___/___	Putting it All Together	L18: Using Functions to Model Battery Power *Optional Lesson*	HSA-SSE.A.1, HSF-BF.A.1, HSF-IF.B, HSF-IF.B.4, HSF-IF.B.6, HSS-ID.B.6, HSS-ID.B.6.a, HSS-ID.B.6.c
___/___/___	End-Unit Assessment		

Unit 5 – Introduction to Exponential Functions (23 days)

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Date		Lesson	Standards
<mark>___/___/___</mark>	<mark>Pre-Unit Assessment (Complete this after the end of unit 4 assessment)</mark>		
___/___/___	Looking at Growth	L1: Growing & Growing	HSF-BF.A.1.a, HSF-IF.B.4, HSF-LE.A.3
___/___/___		L2: Patterns of Growth	HSF-BF.A, HSF-BF.A.1.a, HSF-IF.B.4, HSF-LE.A.1, HSF-LE.A.2
___/___/___	A New Kind of Relationship	L3: Representing Exponential Growth	HSA-CED.A.2, HSF-BF.A.1.a, HSF-IF.C.7, HSF-LE.B.5
___/___/___		L4: Understanding Decay	HSA-CED.A.2, HSA-SSE.A.1, HSF-BF.A, HSF-BF.A.1.a, HSF-LE.A.2, HSF-LE.B.5
___/___/___		L5: Representing Exponential Decay*	HSA-CED.A.2, HSF-BF.A, HSF-IF.B.4, HSF-IF.C.7.e, HSF-LE.A.2, HSF-LE.B.5
___/___/___		L6: Analyzing Graphs	HSA-CED.A.2, HSF-BF.A.1, HSF-IF.B.4
___/___/___		L7: Using Negative Exponents	HSA-CED.A.2, HSA-SSE.A.1, HSF-IF.B.4, HSF-IF.C.7.e, HSF-LE.B.5, HSN-Q.A.1
___/___/___	Exponential Functions	L8: Exponential Situations as Functions	HSF-IF.A.2, HSF-IF.B, HSF-IF.B.5, HSF-IF.C.7, HSF-LE.A.2, HSN-Q.A.1
___/___/___		L9: Interpreting Exponential Functions	HSA-SSE.A, HSF-IF.A.2, HSF-IF.B.5, HSF-IF.C.7.e, HSF-LE.A.2
___/___/___		L10: Looking at Rates of Change	HSF-IF.B.6
___/___/___		L11: Modeling Exponential Behavior	HSF-BF.A.1, HSF-IF.A.2, HSF-IF.B.4, HSF-IF.B.5, HSF-LE.A.1, HSF-LE.A.1.c, HSF-LE.A.2, HSF-LE.B.5, HSN-Q.A.1, HSN-Q.A.3, HSS-ID.B.6.a
___/___/___		L12: Reasoning about Exponential Graphs (Part 1)	HSF-IF.B.4, HSF-LE.B.5
___/___/___		L13: Reasoning about Exponential Graphs (Part 2)	HSF-IF.B.4, HSF-LE.A.2, HSF-LE.B.5
<mark>___/___/___</mark>	<mark>Mid-Unit Assessment</mark>		
___/___/___		L14: Recalling Percent Change<mark>*Optional Lesson*</mark>	HSF-LE.A.2

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Date	Unit	Lesson	Standards
___/___/___	Percent Growth & Decay	L15: Functions Involving Percent Change	HSF-BF.A.1, HSF-BF.A.1.a, HSF-IF.B.6, HSF-IF.C.7.e, HSF-LE.A.2
___/___/___		L16: Compounding interest	HSF-BF.A.1.a
___/___/___		L17: Different Compounding Intervals	HSA-SSE.A, HSA-SSE.A.1, HSF-BF.A.1, HSF-BF.A.1.a, HSF-IF.A.2, HSF-LE.A.1, HSF-LE.A.2, HSF-LE.B.5, HSN-Q.A.2
___/___/___		L18: Expressed in Different Ways	HSA-SSE.A.1.b, HSA-SSE.B.3.c, HSF-IF.A.2, HSF-IF.C.8, HSF-IF.C.8.b
___/___/___	Comparing Linear & Exponential Functions	L19: Which One Changes Faster?	HSF-IF.A.2, HSF-IF.B.4, HSF-IF.B.5, HSF-LE.A.1, HSF-LE.A.2, HSF-LE.A.3
___/___/___		L20: Changes over Equal Intervals	HSF-LE.A.1.a, HSF-LE.A.1.b, HSF-LE.A.2
___/___/___	Putting It All Together	L21: Predicting Populations *Optional Lesson*	HSF-LE.A.1, HSF-LE.A.1.b, HSF-LE.A.1.c, HSF-LE.A.2, HSN-Q.A.3, HSS-ID.B.6.a
___/___/___	End-Unit Assessment		

Unit 6 – Introduction to Quadratic Functions (19 days)

Date		Lesson	Standards
___/___/___	Pre-Unit Assessment (Complete this after the end of unit 5 assessment)		
___/___/___	A Different Kind of Change	L1: A Different Kind of Change	HSF-BF.A.1.a, HSF-LE.A
___/___/___		L2: How Does it Change?	HSA-SSE.A.1, HSA-SSE.B.3, HSF-BF.A.1.a
___/___/___	Quadratic Functions	L3: Building Quadratic Functions from Geometric Patterns	HSA-SSE.A.1, HSF-BF.A.1.a, HSF-IF.A.2
___/___/___		L4: Comparing Quadratic & Exponential Functions	HSF-BF.A.1.a, HSF-IF.C, HSF-LE.A.3
___/___/___		L5: Building Quadratic Functions to Describe Situations (Part 1)	HSF-BF.A.1, HSF-BF.A.1.a, HSF-IF.A.2
___/___/___		L6: Building Quadratic Functions to Describe Situations (Part 2)	HSF-BF.A.1, HSF-BF.A.1.a, HSF-IF.B.5, HSF-IF.C, HSF-IF.C.7.a
___/___/___		L7: Building Quadratic Functions to Describe Situations (Part 3)	HSF-BF.A.1.a, HSF-IF.B.5, HSF-IF.C.7.a
___/___/___	Working with Quadratic Expressions	L8: Equivalent Quadratic Expressions	HSA-SSE.A, HSA-SSE.A.2, HSA-SSE.B.3, HSF-IF.C.8
___/___/___		L9: Standard Form & Factored Form	HSA-SSE.A.2, HSA-SSE.B.3, HSF-IF.C.8
___/___/___		L10: Graphs of Functions in Standard & Factored Forms	HSA-SSE.B.3

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___/___/___	Mid-Unit Assessment		
___/___/___	Features of Graphs of Quadratic Functions	L11: Graphing from the Factored Form	HSA-SSE.A, HSF-IF.C.7.a
___/___/___		L12: Graphing from the Standard Form (Part 1)	HSF-BF.B.3, HSF-IF.C, HSF-IF.C.7, HSF-LE.A.2
___/___/___		L13: Graphing from the Standard Form (Part 2)*Optional Lesson*	HSA-SSE.B.3, HSF-BF.B.3, HSF-IF.C.7, HSF-IF.C.7.a
___/___/___		L14: Graphs That Represent Situations	HSF-IF.A.2, HSF-IF.C.7.a, HSF-IF.C.8, HSF-IF.C.9
___/___/___		L15: Vertex Form	HSF-BF.B.3, HSF-IF.C, HSF-IF.C.7.a
___/___/___		L16: Graphing from the Vertex Form	HSF-IF.C, HSF-IF.C.7.a
___/___/___		L17: Changing the Vertex	HSF-BF.B.3, HSF-IF.C, HSF-IF.C.7.a
___/___/___	End-Unit Assessment		

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Unit 7 – Quadratic Equations (28 days)

Date		Lesson	Standards
___/___/___	Pre-Unit Assessment (Complete this after the end of unit 6 assessment)		
___/___/___	Finding Unknown Inputs	L1: Funding Unknown Inputs	HSA-CED.A.1, HSA-CED.A.3
___/___/___		L2: When & Why Do We Write Quadratic Equations?	HSA-CED.A.1, HSA-CED.A.2, HSA-REI.B.4, HSN-Q.A
___/___/___	Solving Quadratic Equations	L3: Solving Quadratic Equations by Reasoning	HSA-REI.A.1, HSA-REI.B.4.b
___/___/___		L4: Solving Quadratic Equations with Zero Product Property	HSA-CED.A.1, HSA-REI.B.4, HSA-REI.B.4.b, HSA-SSE.B.3
___/___/___		L5: How Many Solutions?	HSA-REI.A.1, HSA-REI.B.4, HSA-REI.B.4.b, HSA-REI.D, HSA-REI.D.10
___/___/___		L6: Rewriting Quadratic Expressions in Factored Form (Part 1)	HSA-REI.B.4.b, HSA-SSE.A.2, HSA-SSE.B.3.a
___/___/___		L7: Rewriting Quadratic Expressions in Factored Form (Part 2)	HSA-REI.B.4.b, HSA-SSE.A.2, HSA-SSE.B.3.a
___/___/___		L8: Rewriting Quadratic Expressions in Factored Form (Part 3)	HSA-REI.B.4.b, HSA-SSE.A.2, HSA-SSE.B.3.a
___/___/___		L9: Solving Quadratic Equations by Using Factored Form	HSA-REI.B.4, HSA-REI.B.4.b, HSA-SSE.B.3.a
___/___/___		L10: Rewriting Quadratic Expressions in Factored Form (Part 4)	HSA-REI.B.4.b, HSA-REI.D, HSA-SSE.A, HSA-SSE.A.2, HSA-SSE.B.3.a, HSF-IF.B.4
___/___/___	Mid-Unit Assessment		
___/___/___	Completing the Square	L11: What are Perfect Squares?	HSA-REI.B.4.a, HSA-REI.B.4.b, HSA-SSE.A.2
___/___/___		L12: Completing the Square (Part 1)	HSA-REI.B.4.a, HSA-REI.B.4.b, HSA-SSE.A, HSA-SSE.A.2
___/___/___		L13: Completing the Square (Part 2)	HSA-REI.A, HSA-REI.B.4.b
___/___/___		L14: Completing the Square (Part 3)	HSA-REI.B.4.a, HSA-REI.B.4.b, HSA-SSE.A.2
___/___/___		L15: Quadratic Equations with Irrational Solutions	HSA-REI.B.4.a, HSA-REI.B.4.b, HSA-REI.D, HSN-RN.B
___/___/___	The	L16: The Quadratic Formula	HSA-REI.B.4.b, HSA-SSE.A

___/___/___	Quadratic Formula	L17: Applying the Quadratic Formula (Part 1)	HSA-CED.A.1, HSA-REI.A, HSA-REI.B.4, HSA-REI.B.4.b, HSF-IF.B.5
___/___/___		L18: Applying the Quadratic Formula (Part 2)	HSA-CED.A.1, HSA-REI.B.4.b, HSF-IF.A.2
		L19: Deriving the Quadratic Formula	HSA-REI.B.4.a, HSA-SSE.A.2
		L20: Rational & Irrational Solutions	HSA-REI.B.4.b, HSF-IF.C.7.a, HSN-RN.B.3
		L21: Sums & Products of Rationals & Irrational Numbers	HSA-REI.B.4.b, HSN-RN.B, HSN-RN.B.3
	Vertex Form Revisited	L22: Rewriting Quadratic Expressions in Vertex Form	HSA-SSE.A.2, HSA-SSE.B.3, HSA-SSE.B.3.b, HSF-IF.C
		L23: Using Quadratic Expressions in Vertex Form to Solve Problems	HSA-SSE.B.3.b, HSF-IF.C, HSF-IF.C.9
	Putting It All Together	L24: Using Quadratic Equations to Model Situations & Solve Problems*Optional Lesson*	HSA-REI.B.4.b, HSA-REI.C.7, HSF-IF.C.8.a
___/___/___	End-Unit Assessment		

Unit 1 – One-Variable Statistics (18 days) (I moved this to the end of the year, this unit is needed for Algebra 2, but not any other units in Algebra 1)

Date		Lesson	Standards
___/___/___	Pre-Unit Assessment		
___/___/___	Getting to Know You	L1: Getting to Know You	HSS-ID.A.1
___/___/___		L2: Data Representations*	HSS-ID.A.1, HSS-ID.A.2

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Date	Section	Lesson	Standards
___/___/___		L3: A Gallery of Data	HSS-ID.A.1, HSS-ID.A.2
___/___/___	Distribution Shapes	L4: The Shape of Distributions	HSS-ID.A.1, HSS-ID.A.2
___/___/___		L5: Calculating Measures of Center & Variability*	HSS-ID.A.1, HSS-ID.A.2
___/___/___	How to Use Spreadsheets	L6: Mystery Computations*	
___/___/___		L7: Spreadsheet Computations*	
___/___/___		L8: Spreadsheet Shortcuts*	
___/___/___	Manipulating Data	L9: Technological Graphing	HSS-ID.A.1, HSS-ID.A.2, HSS-ID.A.3
___/___/___		L10: The Effect of Extremes	HSS-ID.A.1, HSS-ID.A.2, HSS-ID.A.3
___/___/___		L11: Comparing & Contrasting Data Distributions	HSS-ID.A.2, HSS-ID.A.3
___/___/___		L12: Standard Deviation	HSS-ID.A.2, HSS-ID.A.3
___/___/___		L13: More Standard Deviation	HSS-ID.A.2, HSS-ID.A.3
___/___/___		L14: Outliers	HSS-ID.A.1, HSS-ID.A.2, HSS-ID.A.3
___/___/___		L15: Comparing Data Sets	HSS-ID.A.1, HSS-ID.A.2, HSS-ID.A.3
___/___/___	Analyzing Data	L16: Analyzing Data	HSS-ID.A.1, HSS-ID.A.2, HSS-ID.A.3
___/___/___	End-Unit Assessment		

Modeling Prompts

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MODELING PROMPT 1

Modeling Prompt 0

Use after Unit 1, Lesson 1

MODELING PROMPT 2

Display Your Data

Use after Unit 1, Lesson 15
- HSS-ID.A.1
- HSS-ID.A.2
- HSS-ID.A.3

MODELING PROMPT 3

College Characteristics

Use after Unit 3, Lesson 9
- HSS-ID.A
- HSS-ID.B.5
- HSS-ID.B.6
- HSS-ID.C.7
- HSS-ID.C.8
- HSS-ID.C.9

MODELING PROMPT 4

Critically Examining National Debt

Use after Unit 5, Lesson 17
- HSF-BF.A.1
- HSF-LE.A.1
- HSF-LE.A.2
- HSF-LE.B.5