Mathematics Algebra I Year-Long Curriculum Map
11" x 17"

Sequential

Inquiry Modules	Critical Focus Areas	Student Focal Points	Sense-Making CONCEPTS Standards	Sense-Making STRATEGIES Standards	Sense-Making APPLICATION/ MODELING Standards
A. Relationships Between Quantities and Reasoning with Equations	• Algebra – Writing and Solving Equations and Inequality Systems while Anticipating the Number and Nature of Solutions • Number and Quantity – Relating Complex Numbers to Real Numbers • Number and Quantity – Rates and Quantities are Numbers with Units	1) Reasoning quantitatively and using units to solve problems sand provide a foundation for more complex algebraic manipulation 2) Interpreting the structure of linear expressions and exponential expressions with integer exponents 3) Modeling contextual situations by creating linear equations/inequalities and exponential equations 4) Understanding and communicating the reasoning behind solving linear equations and inequalities 5) Making use of the structure of expressions to find linear scenarios in order to solve equations	A.CED.3, A.CED.4, A.REI.1	A.REI.3	A.CED.1 N.Q.1 N.Q.2, N.Q.3
B. Linear and Exponential Relationships	• Number and Quantity – Relating Complex Numbers to Real Numbers • Algebra – Writing and Solving Equations and Inequalities Systems While Anticipating the Number and Nature of Solutions • Algebra – Using Multiple Representations of Relationships Between Quantities • Function – Using Multiple Representations of Relationships Between Quantities • Function – Using Multiple Representations to Analyze Functions • Functions – Modeling Families of Functions	1) Extending the properties of exponents to rational exponents 2) Solving systems of linear equations, focusing on strategies and solutions 3) Representing and solving linear and exponential equations and inequalities graphically in order to justify solutions 4) Understanding the concept of a function and using function notation, including recursive functions 5) Interpreting functions that arise in context by investigating restrictions and key features of graphs 6) Analyzing linear and exponential functions in context using different representations 7) Building linear and exponential functions that model a relationship between two quantities 8) Building new functions from existing linear and exponential functions through experimentation with transformations 9) Constructing and comparing linear and exponential models to solve problems in context 10) Creating and interpreting expressions for functions in terms of the situation they model	N.RN.1 A.REI.10, A.REI.11 F.IF.1, F.IF.3, F.IF.9 F.IF.9, F.BF.3, F.LE.3	N.RN.2 A.REI.6 A.REI.11, A.REI.12 F.IF.2 F.LE.2	 A.REI.5 F.IF.5, F.IF.7, F.LE.5, F.BF.1 F.IF.4, F.IF.6, F.BF.2 F.LE.1

Sequential

C. Descriptive Statistics	• Statistics and Probability – Analyzing Data	1) Summarizing, representing, and interpreting data appropriately on a single count or measurement variable 2) Summarizing, representing, and interpreting data appropriately on two categorical and quantitative variables 3) Interpreting linear models in context	S.ID.1, S.ID.6, S.ID.9	S.ID.8	S.ID.2, S.ID.3, S.ID.5, S.ID.7
D. Expressions and Equations	• Algebra – Extending the Concept of Expression to Include Polynomial and Rational Expression • Algebra – Writing and Solving Equations and Inequalities Systems While Anticipating the Number and Nature of Solutions • Algebra – Using Multiple Representations of Relationships Between Quantities	1) Interpreting the structure of quadratic expressions and exponential expressions with rational exponents 2) Writing expressions in equivalent forms to reveal the roles of important mathematical features in context 3) Understanding the connection between operations on integers and operations on polynomials 4) Modeling contextual situations by creating linear, exponential, and quadratic equations 5) Solving quadratic equations in one variable in contextual situations 6) Solving a system of equations in context	A.SSE.1, A.APR.1 A.CED.4	A.SSE.2, ASSE.3 A.CED.1, A.REI.4 A.REI.7	A.CED.2
E. Quadratic Functions and Modeling	• Number and Quantity – Relating Complex Numbers to Real Numbers • Function – Using Multiple Representations to Analyze Functions • Function – Using Multiple Representations of Relationships Between Quantities • Functions – Modeling Families of Functions	1) Interpreting the structure of quadratic expressions and exponential expressions with rational exponents 2) Writing expressions in equivalent forms to reveal the roles of important mathematical features in context 3) Understanding the connection between operations on integers and operations on polynomials 4) Modeling contextual situations by creating linear, exponential, and quadratic equations 5) Solving quadratic equations in one variable in contextual situations 6) Solving a system of equations in context	N.RN.3 F.IF.9, F.BF.3, F.LE.3	F.IF.8 F.BF.4	F.IF.4, F.IF.6 F.BF.1, F.IF.5, F.IF.7