Algebra I | Nebraska's College and Career Ready Standards for Mathematics (2022) Correlation to *Eureka Math²® (2027)*

Eureka Math² is a research-proven math curriculum that empowers teachers to center instructional techniques on student success. Teachers can foster more "aha!" learning moments by providing the support needed for all learners to build a more confident math mindset.

This *Eureka Math²* edition builds on a strong foundation of effective instruction. It provides teachers with guidance on delivering rigorous instruction that honors student choice and encourages confident problem-solving.

Eureka Math² carefully sequences mathematical content to maximize vertical alignment from kindergarten through high school. This kind of sequencing has proven to be essential in students' mastery of math.

Teachability

Eureka Math² employs streamlined materials that allow teachers to plan more efficiently and focus their energy on delivering high-quality instruction that meets the individual needs of their students. Differentiation suggestions, slide decks, digital interactives, and multiple forms of assessment are just a few of the resources built into the teacher materials.

Accessibility

Eureka Math² incorporates Universal Design for Learning (UDL) principles so all learners can access the mathematics and take on challenging math concepts. UDL, Differentiation, and Multilingual Learner supports are built into the instructional design and are clearly identified in the *Teach* book.

The curriculum also carries a focus on readability. By eliminating unnecessary words and using clear sentences, the *Eureka Math²* teacher–writers have created one of the most readable mathematics curricula on the market. The curriculum's readability and accessibility help all students see themselves as mathematical thinkers and doers who are fully capable of owning their mathematics learning.

Math Confidence

Eureka Math² fosters a classroom culture of learning by encouraging student-led discourse and cognitive engagement that results in confident learners. By leveraging consistent models, routines, and progressions, teachers can remove barriers and allow all students an avenue to success. Within the digital platform, each grade includes wordless videos and digital interactives that spark students' curiosity and help them make conceptual connections. Using the *Learn* books, students wonder, explore, and make sense of mathematics, which helps them develop a strong, positive mathematical identity.

Nebraska Mathematical Practice	Aligned Components of *Eureka Math²*
MP.1 Make sense of problems and persevere in solving them.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.2 Reason quantitatively and abstractly and consider the reasoning of others.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.3 Create and use representations to organize, record, and communicate mathematical ideas.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.4 Analyze mathematical relationships to connect mathematical ideas.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.
MP.5 Explain and justify mathematical ideas using precise mathematical language in written or oral communication.	Lessons in every module engage students in mathematical practices. These are indicated in margin notes included with every lesson.

Number: Students will solve problems and reason with number concepts using multiple representations, make connections within math and across disciplines, and communicate their ideas.

HS.N.2 Sets and Operations: Students will use number sets and operations to reason and to solve problems.

Nebraska's College and Career Ready Standards for Mathematics	Aligned Components of *Eureka Math²*
HS.N.1.b Determine if the context of a problem calls for an approximation or an exact value.	A1 M6 Lesson 6: Polynomial Identities
HS.N.1.e Determine the tolerance interval and percent of error in measurement.	A1 M6 Lesson 6: Polynomial Identities
HS.N.2.a Extend the properties of exponents to rational numbers.	A1 M5 Lesson 9: Unit Fraction Exponents A1 M5 Lesson 10: Rational Exponents
HS.N.2.b Use properties of rational and irrational numbers.	A1 M4 Lesson 13: Using Square Roots to Solve Quadratic Equations A1 M4 Lesson 17: Rewriting Square Roots

Number: Students will solve problems and reason with number concepts using multiple representations, make connections within math and across disciplines, and communicate their ideas.

HS.N.3 Interpretation and Sense Making: Students will reason abstractly and quantitatively using units to solve problems and interpret results in context.

Nebraska's College and Career Ready Standards for Mathematics	Aligned Components of *Eureka Math²*
HS.N.3.b Use estimation methods to check the reasonableness of real number computations and decide if the problem calls for an approximation (including appropriate rounding) or an exact number.	A1 M6 Lesson 6: Polynomial Identities
HS.N.3.c Use units to assess the validity of an answer in the context of a problem.	A1 M6 Lesson 5: Solar System Models

Algebra: Students will solve problems and reason with algebra using multiple representations, make connections within math and across disciplines, and communicate their ideas.

HS.A.1 Algebraic Relationships: Students will demonstrate and represent relationships with functions.

Nebraska's College and Career Ready Standards for Mathematics	Aligned Components of *Eureka Math²*
HS.A.1.a Demonstrate that functions are a well mapped subdomain of relations.	A1 M3 Lesson 1: The Definition of a Function
HS.A.1.b Analyze a relation to determine if it is a function given mapping diagrams, function notation (e.g., $f(x) = x^2$), a table, or a graph.	A1 M3 Lesson 1: The Definition of a Function A1 M3 Lesson 2: Representing, Naming, and Evaluating Functions
HS.A.1.c Classify a function given its mapping diagram, function notation, table, or graph as a linear, quadratic, absolute value, exponential, or other function.	A1 M5 Lesson 15: Calculating Interest A1 M5 Lesson 18: Modeling Populations A1 M5 Lesson 21: World Population Prediction A1 M5 Lesson 22: A Closer Look at Populations A1 M5 Lesson 24: Modeling an Invasive Species Population
HS.A.1.d Analyze a function's domain and range to determine if it is one-to-one and has an inverse function both algebraically and graphically.	A1 M3 Lesson 7: Inverses of Linear Functions

Nebraska's College and Career Ready Standards for Mathematics	Aligned Components of *Eureka Math²*
HS.A.1.e Define, interpret, and analyze linear, quadratic, absolute value, and exponential functions using the points of interest of the functions and graphing technology.	A1 M3 Lesson 4: The Graph of the Equation $y = f(x)$ A1 M3 Lesson 5: Using Pseudocode to Compare Graphs of Functions and Graphs of Equations A1 M3 Lesson 6: Representations of Functions A1 M3 Lesson 16: The Absolute Value Function A1 M4 Lesson 1: Falling Objects A1 M4 Lesson 2: Projectile Motion A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion A1 M4 Lesson 4: Graphs of Quadratic Functions A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form A1 M4 Lesson 19: Transforming the Graphs of Quadratic Functions A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts A1 M5 Lesson 11: Graphing Exponential Functions A1 M5 Lesson 12: Using Transformations to Graph Exponential Functions (Bases Greater Than 1) A1 M5 Lesson 13: Using Transformations to Graph Exponential Functions (Bases Between 0 and 1)

Nebraska's College and Career Ready Standards for Mathematics	Aligned Components of *Eureka Math²*
HS.A.1.f Identify, analyze, and apply transformations of existing functions (including translation and dilation).	A1 M3 Lesson 19: Exploring Transformations of the Graphs of Functions A1 M3 Lesson 20: Building New Functions—Translations A1 M3 Lesson 21: Building New Functions—Reflections A1 M3 Lesson 22: Building New Functions—Vertical Scaling A1 M3 Lesson 23: Building New Functions—Horizontal Scaling A1 M3 Lesson 24: A Summary of Transforming the Graph of a Function A1 M4 Lesson 20: Art with Transformations A1 M5 Lesson 12: Using Transformations to Graph Exponential Functions (Bases Greater Than 1) A1 M5 Lesson 13: Using Transformations to Graph Exponential Functions (Bases Between 0 and 1) A1 M5 Lesson 14: Writing Equations for Exponential Functions from Tables or Graphs A1 M5 Lesson 23: Modeling the Temperature of Objects Cooling Over Time
HS.A.1.h Describe arithmetic sequences using tables of values and functions in explicit and recursive forms.	A1 M5 Lesson 5: Arithmetic and Geometric Sequences A1 M5 Lesson 6: Representations of Arithmetic and Geometric Sequences
HS.A.1.i Describe geometric sequences using tables of values and functions in explicit and recursive forms.	A1 M5 Lesson 5: Arithmetic and Geometric Sequences A1 M5 Lesson 6: Representations of Arithmetic and Geometric Sequences A1 M5 Lesson 7: Sierpinski Triangle

Algebra: Students will solve problems and reason with algebra using multiple representations, make connections within math and across disciplines, and communicate their ideas.

HS.A.2 Algebraic Processes: Students will apply the operational properties when evaluating rational expressions and solving linear and quadratic equations, and inequalities.

Nebraska's College and Career Ready Standards for Mathematics	Aligned Components of *Eureka Math²*
HS.A.2.a Analyze and explain the properties used in solving equations, inequalities, systems of linear equations, systems of linear inequalities, and literal equations.	A1 M1 Lesson 9: Solving Linear Equations in One Variable A1 M1 Lesson 10: Some Potential Dangers When Solving Equations A1 M1 Lesson 11: Writing and Solving Equations in One Variable
HS.A.2.b Generate expressions in equivalent forms by using algebraic properties to make different characteristics or features visible.	A1 M4 Lesson 10: Zeros of Functions A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form A1 M4 Lesson 21: Completing the Square to Graph Quadratic Functions A1 M4 Lesson 22: A Summary of Graphing Quadratic Functions A1 M5 Lesson 11: Graphing Exponential Functions A1 M5 Lesson 12: Using Transformations to Graph Exponential Functions (Bases Greater Than 1)

Nebraska's College and Career Ready Standards for Mathematics	Aligned Components of *Eureka Math²*
HS.A.2.c Analyze equations and inequalities to determine and apply efficient methods to solve and use appropriate technology as needed.	A1 M1 Lesson 7: Printing Presses A1 M1 Lesson 8: Solution Sets for Equations and Inequalities in One Variable A1 M1 Lesson 9: Solving Linear Equations in One Variable A1 M1 Lesson 10: Some Potential Dangers When Solving Equations A1 M1 Lesson 11: Writing and Solving Equations in One Variable A1 M1 Lesson 12: Rearranging Formulas A1 M1 Lesson 13: Solving Linear Inequalities in One Variable A1 M1 Lesson 14: Solution Sets of Compound Statements A1 M1 Lesson 15: Solving and Graphing Compound Inequalities A1 M1 Lesson 16: Solving Absolute Value Equations A1 M1 Lesson 17: Solving Absolute Value Inequalities A1 M1 Lesson 18: Applying Absolute Value
HS.A.2.d Calculate the slope (rate of change) of a line given coordinate points, a graph, or a table of values.	8 M4 Lesson 16: Proportional Relationships and Slope 8 M4 Lesson 17: Slopes of Rising Lines 8 M4 Lesson 18: Slopes of Falling Lines 8 M4 Lesson 19: Using Coordinates to Find Slope 8 M4 Lesson 20: Slope-Intercept Form of the Equation of a Line 8 M4 Lesson 21: Slope and Parallel Lines 8 M4 Lesson 22: Point-Slope Form of the Equation of a Line 8 M4 Lesson 23: Comparing Equations in Different Forms A1 M3 Lesson 3: Creating Linear Equations in Two Variables

Nebraska's College and Career Ready Standards for Mathematics	Aligned Components of *Eureka Math²*
HS.A.2.e Write and graph equations of functions (linear, absolute value, quadratic, and exponential) using the points of interest of the function.	A1 M3 Lesson 4: The Graph of the Equation $y = f(x)$ A1 M3 Lesson 16: The Absolute Value Function A1 M4 Lesson 1: Falling Objects A1 M4 Lesson 2: Projectile Motion A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion A1 M4 Lesson 4: Graphs of Quadratic Functions A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form A1 M4 Lesson 19: Transforming the Graphs of Quadratic Functions A1 M4 Lesson 20: Art with Transformations A1 M4 Lesson 21: Completing the Square to Graph Quadratic Functions A1 M4 Lesson 22: A Summary of Graphing Quadratic Functions A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts A1 M5 Lesson 16: Exponential Growth A1 M5 Lesson 17: Exponential Decay A1 M5 Lesson 18: Modeling Populations A1 M5 Lesson 21: World Population Prediction A1 M5 Lesson 22: A Closer Look at Populations A1 M5 Lesson 23: Modeling the Temperature of Objects Cooling Over Time A1 M5 Lesson 24: Modeling an Invasive Species Population
HS.A.2.f Given a line, write the equation of a line that is parallel or perpendicular to it.	8 M4 Lesson 21: Slope and Parallel Lines *Supplemental material is necessary to address writing the equation of a line that is perpendicular to a given line.*

Nebraska's College and Career Ready Standards for Mathematics	Aligned Components of *Eureka Math²*
HS.A.2.g Perform and explain operations such as addition, subtraction, multiplication, division, and factoring on polynomials.	A1 M1 Lesson 3: Polynomial Expressions A1 M1 Lesson 4: Adding and Subtracting Polynomial Expressions A1 M1 Lesson 5: Multiplying Polynomial Expressions A1 M1 Lesson 6: Polynomial Identities *Supplemental material is necessary to address polynomial division.*

Algebra: Students will solve problems and reason with algebra using multiple representations, make connections within math and across disciplines, and communicate their ideas.

HS.A.3 Applications: Students will solve authentic problems using nonlinear functions.

Nebraska's College and Career Ready Standards for Mathematics	Aligned Components of *Eureka Math²*
HS.A.3.a Analyze and model authentic situations using various representations and appropriate technology.	A1 M4 Lesson 1: Falling Objects A1 M4 Lesson 2: Projectile Motion A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form
HS.A.3.b Identify, interpret, relate, and graph the factors, x-intercepts, roots, and zeros of polynomial functions using algebraic and graphing methods.	A1 M4 Lesson 1: Falling Objects A1 M4 Lesson 2: Projectile Motion A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion A1 M4 Lesson 10: Zeros of Functions A1 M4 Lesson 11: Graphing Quadratic Functions from Factored Form A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form A1 M4 Lesson 22: A Summary of Graphing Quadratic Functions

Nebraska's College and Career Ready Standards for Mathematics	Aligned Components of *Eureka Math²*
HS.A.3.c Identify and predict appropriate solutions to equations given context and domain/range (e.g., extraneous solutions, imaginary solutions, no solution, infinitely many solutions).	A1 M4 Lesson 1: Falling Objects A1 M4 Lesson 2: Projectile Motion A1 M4 Lesson 3: Analyzing Functions That Model Projectile Motion A1 M4 Lesson 12: Using Symmetry to Graph Quadratic Functions from Standard Form

Data: Students will solve problems and reason with data/probability using multiple representations, make connections within math and across disciplines, and communicate their ideas.

HS.D.2 Analyze Data and Interpret Results: Students will represent and analyze the data and interpret the results.

Nebraska's College and Career Ready Standards for Mathematics	Aligned Components of *Eureka Math²*
HS.D.2.e Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data and recognize possible associations and trends in the data.	A1 M2 Lesson 22: Summarizing Bivariate Categorical Data with Two-Way Tables A1 M2 Lesson 23: Bivariate Categorical Data and Conditional Relative Frequency Tables A1 M2 Lesson 24: Conditional Relative Frequencies and Association
HS.D.2.f Represent data on two quantitative variables on a scatter plot and describe how the variables are related.	A1 M2 Lesson 15: Relationships Between Quantitative Variables A1 M2 Lesson 21: Analyzing Bivariate Quantitative Data

Nebraska's College and Career Ready Standards for Mathematics	Aligned Components of *Eureka Math²*
HS.D.2.g Use technology to develop regression models for linear and non-linear data to predict unobserved outcomes. Interpret slope and y-intercept in the context of the problem.	A1 M2 Lesson 16: Using Lines to Model Bivariate Quantitative Data A1 M2 Lesson 17: Modeling Relationships with a Line A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts A1 M4 Lesson 26: Modeling Data with Quadratic Functions A1 M4 Lesson 27: Search and Rescue Helicopter A1 M6 Lesson 1: Analyzing Paint Splatters A1 M6 Lesson 2: Using Residual Plots to Select Models for Data A1 M6 Lesson 3: Populations of US Cities
HS.D.2.h Measure the strength of association using correlation coefficients for regression curves and interpret their meanings for the model.	A1 M2 Lesson 20: Interpreting Correlation A1 M2 Lesson 21: Analyzing Bivariate Quantitative Data
HS.D.2.i Use residuals and residual plots to judge the quality of a regression model.	A1 M2 Lesson 18: Calculating and Analyzing Residuals A1 M2 Lesson 19: Analyzing Residuals A1 M6 Lesson 1: Analyzing Paint Splatters A1 M6 Lesson 2: Using Residual Plots to Select Models for Data A1 M6 Lesson 3: Populations of US Cities
HS.D.2.j Recognize and explain when arguments based on data confuse correlation with causation.	A1 M2 Lesson 20: Interpreting Correlation A1 M2 Lesson 21: Analyzing Bivariate Quantitative Data

Algebra: Students will solve problems and reason with algebra using multiple representations, make connections within math and across disciplines, and communicate their ideas.

AT.A.1 Algebraic Relationships: Students will demonstrate and represent relationships with functions.

Nebraska's College and Career Ready Standards for Mathematics	Aligned Components of *Eureka Math²*
AT.A.1.c Given a function, list the sequence of algebraic transformations that changes a parent function to the given function.	A1 M3 Lesson 19: Exploring Transformations of the Graphs of Functions A1 M3 Lesson 20: Building New Functions—Translations A1 M3 Lesson 21: Building New Functions—Reflections A1 M3 Lesson 22: Building New Functions—Vertical Scaling A1 M3 Lesson 23: Building New Functions—Horizontal Scaling A1 M3 Lesson 24: A Summary of Transforming the Graph of a Function A1 M4 Lesson 20: Art with Transformations A1 M5 Lesson 12: Using Transformations to Graph Exponential Functions (Bases Greater Than 1) A1 M5 Lesson 13: Using Transformations to Graph Exponential Functions (Bases Between 0 and 1) A1 M5 Lesson 14: Writing Equations for Exponential Functions from Tables or Graphs A1 M5 Lesson 23: Modeling the Temperature of Objects Cooling Over Time

Algebra: Students will solve problems and reason with algebra using multiple representations, make connections within math and across disciplines, and communicate their ideas.

AT.A.3 Applications: Students will solve authentic problems using nonlinear functions and relations.

Nebraska's College and Career Ready Standards for Mathematics	Aligned Components of *Eureka Math²*
AT.A.3.a Analyze and model authentic situations using various non-linear representations and relations with appropriate technology.	A1 M3 Lesson 18: Piecewise Linear Functions in Context A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts A1 M4 Lesson 25: Maximizing Area A1 M4 Lesson 26: Modeling Data with Quadratic Functions A1 M4 Lesson 27: Search and Rescue Helicopter A1 M5 Lesson 8: Exponential Functions A1 M5 Lesson 15: Calculating Interest A1 M6 Lesson 4: The Deal A1 M6 Lesson 5: Solar System Models A1 M6 Lesson 6: Designing a Fundraiser A1 M6 Lesson 7: World Record Doughnut

Nebraska's College and Career Ready Standards for Mathematics	Aligned Components of *Eureka Math²*
AT.A.3.b Analyze and model authentic application situations using various non-linear representations and relations with appropriate technology.	A1 M3 Lesson 18: Piecewise Linear Functions in Context A1 M4 Lesson 23: Creating Equations of Quadratic Functions to Model Contexts A1 M4 Lesson 25: Maximizing Area A1 M4 Lesson 26: Modeling Data with Quadratic Functions A1 M4 Lesson 27: Search and Rescue Helicopter A1 M5 Lesson 8: Exponential Functions A1 M5 Lesson 15: Calculating Interest A1 M6 Lesson 4: The Deal A1 M6 Lesson 5: Solar System Models A1 M6 Lesson 6: Designing a Fundraiser A1 M6 Lesson 7: World Record Doughnut