Algebra II | New York Next Generation Mathematics Learning Standards Correlation to *Eureka Math*®

About *Eureka Math*

Created by Great Minds®, a mission-driven Public Benefit Corporation, *Eureka Math*® helps teachers deliver unparalleled math instruction that provides students with a deep understanding and fluency in math. Crafted by teachers and math scholars, the curriculum carefully sequences the mathematical progressions to maximize coherence from Prekindergarten through Precalculus—a principle tested and proven to be essential in students' mastery of math.

Teachers and students using *Eureka Math* find the trademark "Aha!" moments in *Eureka Math* to be a source of joy and inspiration, lesson after lesson, year after year.

Aligned

Great Minds offers detailed analyses that demonstrate how each grade of *Eureka Math* aligns with specific state standards. Access these free alignment studies at greatminds.org/state-studies.

Data

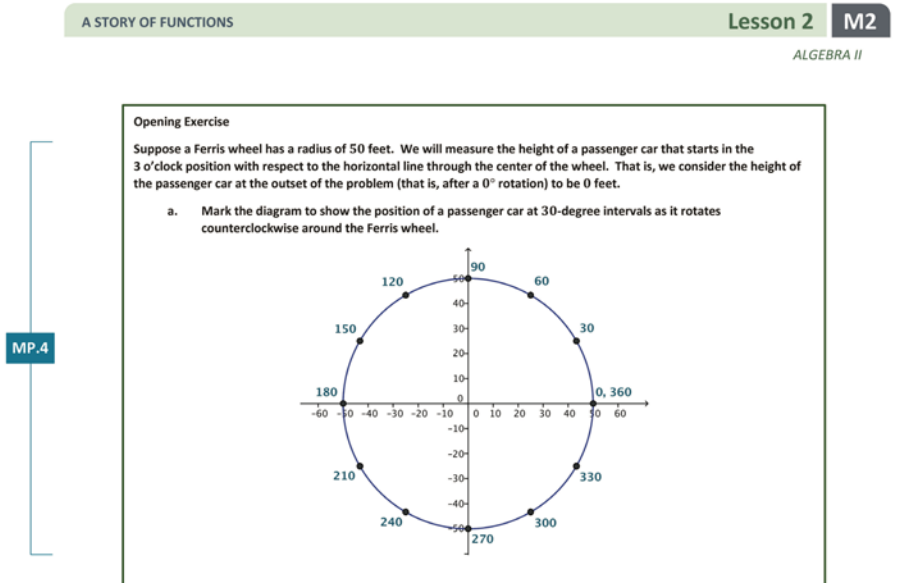
Schools and districts nationwide are experiencing student growth and impressive test scores after using *Eureka Math*. See their stories and data at greatminds.org/data.

Full Suite of Resources

Great Minds offers the *Eureka Math* curriculum as PDF downloads for free, noncommercial use. Access the free PDFs at greatminds.org/math/curriculum.

The teacher–writers who created the curriculum have also developed essential resources, available only from Great Minds, including the following:

- Printed material in English and Spanish
- Digital resources
- Professional development
- Classroom tools and manipulatives
- Teacher support materials
- Parent resources

Standards for Mathematical Practice	Aligned Components of *Eureka Math*
MP.1 Make sense of problems and persevere in solving them.	Lessons in every module engage students in mathematical practices. These are designated in the Module Overview and labeled in lessons. For example: 
MP.2 Reason abstractly and quantitatively.	
MP.3 Construct viable arguments and critique the reasoning of others.	
MP.4 Model with mathematics.	
MP.5 Use appropriate tools strategically.	
MP.6 Attend to precision.	
MP.7 Look for and make use of structure.	
MP.8 Look for and express regularity in repeated reasoning.	

The Real Number System

Extend the properties of exponents to rational exponents.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-N.RN.1 Explore how the meaning of rational exponents follows from extending the properties of integer exponents.	Algebra II M3 Lesson 3: Rational Exponents Algebra II M3 Lesson 4: Properties of Exponents and Radicals Algebra II M3 Lesson 5: Irrational Exponents
AII-N.RN.2 Convert between radical expressions and expressions with rational exponents using the properties of exponents.	Algebra II M3 Lesson 1: Integer Exponents Algebra II M3 Lesson 2: Base 10 and Scientific Notation Algebra II M3 Lesson 3: Rational Exponents Algebra II M3 Lesson 4: Properties of Exponents and Radicals

The Complex Number System

Perform arithmetic operations with complex numbers.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-N.CN.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.	Algebra II M1 Lesson 37: A Surprising Boost from Geometry
AII-N.CN.2 Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.	Algebra II M1 Lesson 37: A Surprising Boost from Geometry

Seeing Structure in Expressions

Interpret the structure of expressions.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-A.SSE.2 Recognize and use the structure of an expression to identify ways to rewrite it.	Algebra II M1 Lesson 2: The Multiplication of Polynomials Algebra II M1 Lesson 3: The Division of Polynomials Algebra II M1 Lesson 5: Putting It All Together Algebra II M1 Lesson 6: Dividing by $x - a$ and by $x + a$ Algebra II M1 Lesson 7: Mental Math Algebra II M1 Lesson 9: Radicals and Conjugates Algebra II M1 Lesson 10: The Power of Algebra—Finding Pythagorean Triples Algebra II M1 Lesson 12: Overcoming Obstacles in Factoring Algebra II M1 Lesson 13: Mastering Factoring Algebra II M3 Lesson 10: Building Logarithmic Tables Algebra II M3 Lesson 11: The Most Important Property of Logarithms Algebra II M3 Lesson 12: Properties of Logarithms Algebra II M3 Lesson 14: Solving Logarithmic Equations Algebra II M3 Lesson 15: Why Were Logarithms Developed?

Seeing Structure in Expressions

Write expressions in equivalent forms to reveal their characteristics.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-A.SSE.3 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.	*This standard is fully addressed by the lessons aligned to its subsections.*
AII-A.SSE.3.a Factor quadratic expressions including leading coefficients other than 1 to reveal the zeros of the function it defines.	Algebra I M4 Lesson 9: Graphing Quadratic Functions from Factored Form, $f(x) = a(x - m)(x - n)$ Algebra I M4 Lesson 15: Using the Quadratic Formula Algebra II M1 Lesson 14: Graphing Factored Polynomials
AII-A.SSE.3.c Use the properties of exponents to rewrite exponential expressions.	Algebra II M3 Lesson 26: Percent Rate of Change

Arithmetic with Polynomials and Rational Expressions

Understand the relationship between zeros and factors of polynomials.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-A.APR.2 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 $p(x)$.	Algebra II M1 Lesson 19: The Remainder Theorem

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-A.APR.3 Identify zeros of polynomial functions when suitable factorizations are available.	Algebra II M1 Lesson 11: The Special Role of Zero in Factoring

Arithmetic with Polynomials and Rational Expressions

Rewrite rational expressions.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-A.APR.6 Rewrite rational expressions in different forms: Write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$.	Algebra II M1 Lesson 4: Comparing Methods—Long Division, Again? Algebra II M1 Lesson 18: Overcoming a Second Obstacle in Factoring—What If There Is a Remainder? Algebra II M1 Lesson 22: Equivalent Rational Expressions Algebra II M1 Lesson 24: Multiplying and Dividing Rational Expressions Algebra II M1 Lesson 25: Adding and Subtracting Rational Expressions

Creating Equations

Create equations that describe numbers or relationships.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-A.CED.1 Create equations and inequalities in one variable to represent a real-world context.	Algebra II M3 Lesson 7: Bacteria and Exponential Growth Algebra II M3 Lesson 26: Percent Rate of Change Algebra II M3 Lesson 27: Modeling with Exponential Functions

Reasoning with Equations and Inequalities

Understand solving equations as a process of reasoning and explain the reasoning.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-A.REI.1b Explain each step when solving rational or radical equations 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.	Algebra I M1 Lesson 18: Equations Involving a Variable Expression in the Denominator Algebra II M1 Lesson 26: Solving Rational Equations Algebra II M1 Lesson 28: A Focus on Square Roots
AII-A.REI.2 Solve rational and radical equations in one variable, identify extraneous solutions, and explain how they arise.	Algebra II M1 Lesson 22: Equivalent Rational Expressions Algebra II M1 Lesson 23: Comparing Rational Expressions Algebra II M1 Lesson 26: Solving Rational Equations Algebra II M1 Lesson 27: Word Problems Leading to Rational Equations Algebra II M1 Lesson 28: A Focus on Square Roots Algebra II M1 Lesson 29: Solving Radical Equations

Reasoning with Equations and Inequalities

Solve equations and inequalities in one variable.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-A.REI.4 Solve quadratic equations in one variable.	*This standard is fully addressed by the lessons aligned to its subsection.*

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-A.REI.4.b Solve quadratic equations by: i) inspection, ii) taking square roots, iii) factoring, iv) completing the square, v) the quadratic formula, and vi) graphing. Write complex solutions in $a + bi$ form.	Algebra I M4 Lesson 5: The Zero Product Property Algebra I M4 Lesson 6: Solving Basic One-Variable Quadratic Equations Algebra I M4 Lesson 7: Creating and Solving Quadratic Equations in One Variable Algebra I M4 Lesson 13: Solving Quadratic Equations by Completing the Square Algebra I M4 Lesson 14: Deriving the Quadratic Formula Algebra I M4 Lesson 15: Using the Quadratic Formula Algebra II M1 Lesson 31: Systems of Equations Algebra II M1 Lesson 38: Complex Numbers as Solutions to Equations

Reasoning with Equations and Inequalities

Solve systems of equations.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-A.REI.7b Solve a system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically.	Algebra II M1 Lesson 31: Systems of Equations Algebra II M1 Lesson 32: Graphing Systems of Equations

Reasoning with Equations and Inequalities

Represent and solve equations and inequalities graphically.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-A.REI.11 Given the equations $y = f(x)$ and $y = g(x)$: i) recognize that each x-coordinate of the intersection(s) is the solution to the equation $f(x) = g(x)$; ii) find the solutions approximately using technology to graph the functions or make tables of values; iii) find the solution of $f(x) < g(x)$ or $f(x) \leq g(x)$ graphically; and iv) interpret the solution in context.	Algebra II M1 Lesson 36: Overcoming a Third Obstacle to Factoring—What If There Are No Real Number Solutions? Algebra II M3 Lesson 24: Solving Exponential Equations

Interpreting Functions

Understand the concept of a function and use function notation.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-F.IF.3 Recognize that a sequence is a function whose domain is a subset of the integers.	Algebra II M3 Lesson 26: Percent Rate of Change

Interpreting Functions

Interpret functions that arise in applications in terms of the context.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-F.IF.4 For a function that models a relationship between two quantities: i) interpret key features of graphs and tables in terms of the quantities; and ii) sketch graphs showing key features given a verbal description of the relationship.	Algebra II M1 Lesson 16: Modeling with Polynomials—An Introduction Algebra II M1 Lesson 17: Modeling with Polynomials—An Introduction Algebra II M3 Lesson 18: Graphs of Exponential Functions and Logarithmic Functions Algebra II M3 Lesson 20: Transformations of the Graphs of Logarithmic and Exponential Functions Algebra II M3 Lesson 21: The Graph of the Natural Logarithm Function
AII-F.IF.6 Calculate and interpret the average rate of change of a function over a specified interval.	Algebra II M3 Lesson 6: Euler's Number, e Algebra II M3 Lesson 27: Modeling with Exponential Functions

Interpreting Functions

Analyze functions using different representations.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-F.IF.7 Graph functions and show key features of the graph by hand and using technology when appropriate.	*This standard is fully addressed by the lessons aligned to its subsections.*

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-F.IF.7.c Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.	Algebra II M1 Lesson 15: Structure in Graphs of Polynomial Functions Algebra II M1 Lesson 16: Modeling with Polynomials—An Introduction
AII-F.IF.7.e Graph cube root, exponential and logarithmic functions, showing intercepts and end behavior; and trigonometric functions, showing period, midline, and amplitude.	Algebra I M4 Lesson 18: Graphing Cubic, Square Root, and Cube Root Functions Algebra II M2 Lesson 8: Graphing the Sine and Cosine Functions Algebra II M2 Lesson 11: Transforming the Graph of the Sine Function Algebra II M2 Lesson 12: Ferris Wheels—Using Trigonometric Functions to Model Cyclical Behavior Algebra II M2 Lesson 14: Graphing the Tangent Function Algebra II M3 Lesson 16: Rational and Irrational Numbers Algebra II M3 Lesson 17: Graphing the Logarithm Function Algebra II M3 Lesson 18: Graphs of Exponential Functions and Logarithmic Functions Algebra II M3 Lesson 20: Transformations of the Graphs of Logarithmic and Exponential Functions Precalculus and Advanced Topics M4 Lesson 11: Revisiting the Graphs of the Trigonometric Functions

Interpreting Functions

Analyze functions using different representations.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-F.IF.8 Write a function in different but equivalent forms to reveal and explain different properties of the function.	*This standard is fully addressed by the lessons aligned to its subsection.*

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-F.IF.8.b Use the properties of exponents to interpret exponential functions, and classify them as representing exponential growth or decay.	Algebra II M3 Lesson 23: Bean Counting Algebra II M3 Lesson 27: Modeling with Exponential Functions Algebra II M3 Topic E: Geometric Series and Finance
AII-F.IF.9 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	Algebra II M3 Lesson 27: Modeling with Exponential Functions Algebra II M3 Lesson 28: Newton's Law of Cooling, Revisited Algebra II M3 Lesson 30: Buying a Car Algebra II M3 Lesson 31: Credit Cards

Building Functions

Build a function that models a relationship between two quantities.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-F.BF.1 Write a function that describes a relationship between two quantities.	Algebra II M1 Lesson 1: Successive Differences in Polynomials Algebra II M3 Lesson 5: Irrational Exponents Algebra II M3 Lesson 6: Euler's Number, e Algebra II M3 Lesson 7: Bacteria and Exponential Growth Algebra II M3 Lesson 22: Choosing a Model Algebra II M3 Lesson 26: Percent Rate of Change Algebra II M3 Lesson 27: Modeling with Exponential Functions Algebra II M3 Lesson 28: Newton's Law of Cooling, Revisited Algebra II M3 Lesson 30: Buying a Car Algebra II M3 Lesson 33: The Million Dollar Problem

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-F.BF.1.a Determine a function from context. Determine an explicit expression, a recursive process, or steps for calculation from a context.	Algebra II M1 Lesson 1: Successive Differences in Polynomials Algebra II M3 Lesson 5: Irrational Exponents Algebra II M3 Lesson 6: Euler's Number, e Algebra II M3 Lesson 7: Bacteria and Exponential Growth Algebra II M3 Lesson 26: Percent Rate of Change Algebra II M3 Lesson 27: Modeling with Exponential Functions
AII-F.BF.1.b Combine standard function types using arithmetic operations.	Algebra II M3 Lesson 28: Newton's Law of Cooling, Revisited Algebra II M3 Lesson 30: Buying a Car Algebra II M3 Lesson 33: The Million Dollar Problem
AII-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.	Algebra II M3 Lesson 25: Geometric Sequences and Exponential Growth and Decay Algebra II M3 Lesson 26: Percent Rate of Change Algebra II M3 Lesson 29: The Mathematics Behind a Structured Savings Plan

Building Functions

Build new functions from existing functions.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-F.BF.3b Using $f(x) + k$, $kf(x)$, $f(kx)$, and $f(x + k)$: i) identify the effect on the graph when replacing $f(x)$ by $f(x) + k$, $kf(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); ii) find the value of k given the graphs; iii) write a new function using the value of k; and iv) use technology to experiment with cases and explore the effects on the graph. Include recognizing even and odd functions from their graphs.	Algebra I M3 Lesson 17: Four Interesting Transformations of Functions Algebra I M3 Lesson 18: Four Interesting Transformations of Functions Algebra I M3 Lesson 19: Four Interesting Transformations of Functions Algebra I M3 Lesson 20: Four Interesting Transformations of Functions Algebra I M4 Lesson 19: Translating Graphs of Functions Algebra I M4 Lesson 20: Stretching and Shrinking Graphs of Functions Algebra II M1 Lesson 15: Structure in Graphs of Polynomial Functions Algebra II M3 Lesson 20: Transformations of the Graphs of Logarithmic and Exponential Functions
AII-F.BF.4a Find the inverse of a one-to-one function both algebraically and graphically.	Algebra II M3 Lesson 7: Bacteria and Exponential Growth Algebra II M3 Lesson 8: The “WhatPower” Function Algebra II M3 Lesson 19: The Inverse Relationship Between Logarithmic and Exponential Functions Algebra II M3 Lesson 24: Solving Exponential Equations Precalculus and Advanced Topics M3 Topic C: Inverse Functions
AII-F.BF.5a Understand inverse relationships between exponents and logarithms algebraically and graphically.	Algebra II M3 Lesson 19: The Inverse Relationship Between Logarithmic and Exponential Functions Precalculus and Advanced Topics M3 Lesson 20: Inverses of Logarithmic and Exponential Functions Precalculus and Advanced Topics M3 Lesson 21: Logarithmic and Exponential Problem Solving

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-F.BF.6 Represent and evaluate the sum of a finite arithmetic or finite geometric series, using summation (sigma) notation.	Algebra II M3 Topic E: Geometric Series and Finance
AII-F.BF.7 Explore the derivation of the formulas for finite arithmetic and finite geometric series. Use the formulas to solve problems.	Algebra II M3 Topic E: Geometric Series and Finance

Linear, Quadratic, and Exponential Models

Construct and compare linear, quadratic, and exponential models and solve problems.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-F.LE.2 Construct a linear or exponential function symbolically given: i) a graph; ii) a description of the relationship; and iii) two input-output pairs (include reading these from a table).	Algebra II M3 Lesson 1: Integer Exponents Algebra II M3 Lesson 6: Euler's Number, e Algebra II M3 Lesson 22: Choosing a Model

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-F.LE.4 Use logarithms to solve exponential equations, such as $ab^{ct} = d$ (where a, b, c, and d are real numbers and $b > 0$) and evaluate the logarithm using technology.	Algebra II M3 Lesson 8: The "WhatPower" Function Algebra II M3 Lesson 12: Properties of Logarithms Algebra II M3 Lesson 13: Changing the Base Algebra II M3 Lesson 14: Solving Logarithmic Equations Algebra II M3 Lesson 15: Why Were Logarithms Developed? Algebra II M3 Lesson 19: The Inverse Relationship Between Logarithmic and Exponential Functions Algebra II M3 Lesson 24: Solving Exponential Equations Algebra II M3 Lesson 27: Modeling with Exponential Functions Algebra II M3 Lesson 28: Newton's Law of Cooling, Revisited Precalculus and Advanced Topics M3 Lesson 20: Inverses of Logarithmic and Exponential Functions Precalculus and Advanced Topics M3 Lesson 21: Logarithmic and Exponential Problem Solving

Linear, Quadratic, and Exponential Models

Interpret expressions for functions in terms of the situation they model.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-F.LE.5 Interpret the parameters in a linear or exponential function in terms of a context.	Algebra II M3 Lesson 23: Bean Counting Algebra II M3 Topic E: Geometric Series and Finance

Trigonometric Functions

Extend the domain of trigonometric functions using the unit circle.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-F.TF.1 Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.	Algebra II M2 Lesson 9: Awkward! Who Chose the Number 360, Anyway?
AII-F.TF.2 Apply concepts of the unit circle in the coordinate plane to calculate the values of the six trigonometric functions given angles in radian measure.	Algebra II M2 Lesson 1: Ferris Wheels—Tracking the Height of a Passenger Car Algebra II M2 Lesson 2: The Height and Co-Height Functions of a Ferris Wheel Algebra II M2 Lesson 3: The Motion of the Moon, Sun, and Stars—Motivating Mathematics Algebra II M2 Lesson 4: From Circle-ometry to Trigonometry Algebra II M2 Lesson 5: Extending the Domain of Sine and Cosine to All Real Numbers Algebra II M2 Lesson 7: Secant and the Co-Functions
AII-F.TF.4 Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.	Precalculus and Advanced Topics M4 Lesson 2: Properties of Trigonometric Functions

Trigonometric Functions

Model periodic phenomena with trigonometric functions.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-F.TF.5 Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, horizontal shift, and midline.	Algebra II M2 Lesson 11: Transforming the Graph of the Sine Function Algebra II M2 Lesson 12: Ferris Wheels—Using Trigonometric Functions to Model Cyclical Behavior Algebra II M2 Lesson 13: Tides, Sound Waves, and Stock Markets Algebra II M2 Lesson 14: Graphing the Tangent Function Precalculus and Advanced Topics M4 Lesson 6: Waves, Sinusoids, and Identities

Trigonometric Functions

Prove and apply trigonometric identities.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-F.TF.8 Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$. Find the value of any of the six trigonometric functions given any other trigonometric function value and when necessary find the quadrant of the angle.	Algebra II M2 Lesson 15: What Is a Trigonometric Identity? Algebra II M2 Lesson 16: Proving Trigonometric Identities

Interpreting Categorical and Quantitative Data

Summarize, represent, and interpret data on a single count or measurement variable.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-S.ID.4a Recognize whether or not a normal curve is appropriate for a given data set.	Algebra II M4 Topic B: Modeling Data Distributions
AII-S.ID.4b If appropriate, determine population percentages using a graphing calculator for an appropriate normal curve.	Algebra II M4 Topic B: Modeling Data Distributions

Interpreting Categorical and Quantitative Data

Summarize, represent, and interpret data on two categorical and quantitative variables.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-S.ID.6 Represent bivariate data on a scatter plot, and describe how the variables' values are related.	*This standard is fully addressed by the lessons aligned to its subsection.*
AII-S.ID.6.a Fit a function to real-world data; use functions fitted to data to solve problems in the context of the data.	Algebra II M1 Lesson 20: Modeling Riverbeds with Polynomials Algebra II M1 Lesson 21: Modeling Riverbeds with Polynomials Algebra II M2 Lesson 13: Tides, Sound Waves, and Stock Markets

Making Inferences and Justifying Conclusions

Understand and evaluate random processes underlying statistical experiments.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-S.IC.2 Determine if a value for a sample proportion or sample mean is likely to occur based on a given simulation.	Algebra II M4 Lesson 1: Chance Experiments, Sample Spaces, and Events

Making Inferences and Justifying Conclusions

Make inferences and justify conclusions from sample surveys, experiments, and observational studies.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-S.IC.3 Recognize the purposes of and differences among surveys, experiments, and observational studies. Explain how randomization relates to each.	Algebra II M4 Lesson 12: Types of Statistical Studies Algebra II M4 Lesson 23: Experiments and the Role of Random Assignment Algebra II M4 Lesson 24: Differences Due to Random Assignment Alone Algebra II M4 Lesson 25: Ruling Out Chance Algebra II M4 Lesson 26: Ruling Out Chance Algebra II M4 Lesson 27: Ruling Out Chance Algebra II M4 Lesson 28: Drawing a Conclusion from an Experiment Algebra II M4 Lesson 29: Drawing a Conclusion from an Experiment

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-S.IC.4 Given a simulation model based on a sample proportion or mean, construct the 95% interval centered on the statistic (+/− two standard deviations) and determine if a suggested parameter is plausible.	Algebra II M4 Lesson 25: Ruling Out Chance Algebra II M4 Lesson 26: Ruling Out Chance Algebra II M4 Lesson 27: Ruling Out Chance Algebra II M4 Lesson 28: Drawing a Conclusion from an Experiment Algebra II M4 Lesson 29: Drawing a Conclusion from an Experiment
AII-S.IC.6a Use the tools of statistics to draw conclusions from numerical summaries.	Algebra II M4 Lesson 22: Evaluating Reports Based on Data from a Sample Algebra II M4 Lesson 25: Ruling Out Chance Algebra II M4 Lesson 26: Ruling Out Chance Algebra II M4 Lesson 27: Ruling Out Chance Algebra II M4 Lesson 28: Drawing a Conclusion from an Experiment Algebra II M4 Lesson 29: Drawing a Conclusion from an Experiment Algebra II M4 Lesson 30: Evaluating Reports Based on Data from an Experiment
AII-S.IC.6b Use the language of statistics to critique claims from informational texts. For example, causation vs correlation, bias, measures of center and spread.	*Supplemental material is necessary to address this standard.*

Conditional Probability and the Rules of Probability

Understand independence and conditional probability and use them to interpret data.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-S.CP.1 Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").	Algebra II M4 Lesson 1: Chance Experiments, Sample Spaces, and Events Algebra II M4 Lesson 3: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables Algebra II M4 Lesson 4: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables Algebra II M4 Lesson 5: Events and Venn Diagrams Algebra II M4 Lesson 6: Probability Rules Algebra II M4 Lesson 7: Probability Rules
AII-S.CP.4 Interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and calculate conditional probabilities.	Algebra II M4 Lesson 2: Calculating Probabilities of Events Using Two-Way Tables Algebra II M4 Lesson 3: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables Algebra II M4 Lesson 4: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables

Conditional Probability and the Rules of Probability

Use the rules of probability to compute probabilities of compound events in a uniform probability model.

New York Next Generation Mathematics Learning Standards	Aligned Components of *Eureka Math*
AII-S.CP.7 Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.	Algebra II M4 Lesson 7: Probability Rules