Algebra II | West Virginia College- and Career-Readiness Standards for Mathematics 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

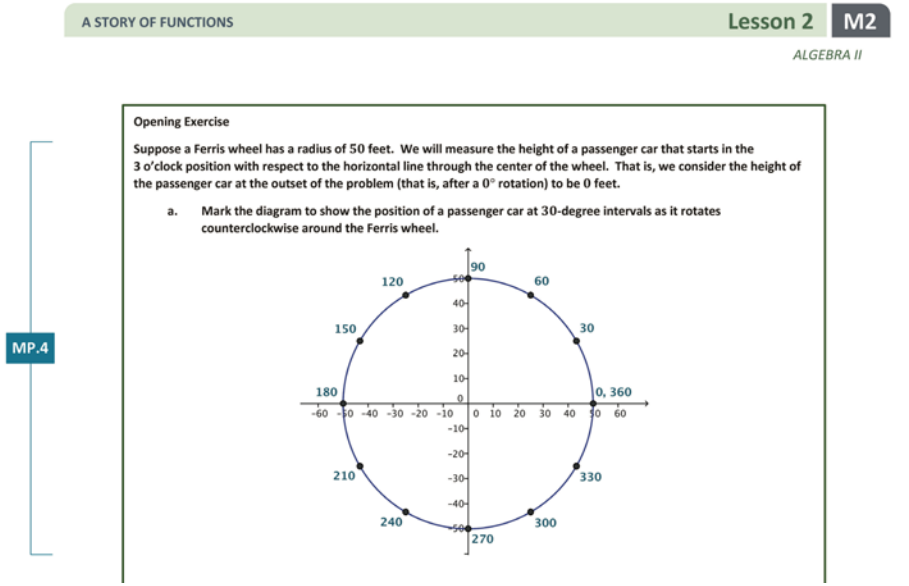
Schools and districts nationwide are experiencing student growth and impressive test scores after using *Eureka Math*. See their stories and data at greatminds.org/data.

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

Mathematical Habits of Mind	Aligned Components of *Eureka Math*
MHM.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: 
MHM.2 Reason abstractly and quantitatively.	
MHM.3 Construct viable arguments and critique the reasoning of others.	
MHM.4 Model with mathematics.	
MHM.5 Use appropriate tools strategically.	
MHM.6 Attend to precision.	
MHM.7 Look for and make use of structure.	
MHM.8 Look for and express regularity in repeated reasoning.	

The Number System

Perform arithmetic operations with complex numbers.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.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 representing real numbers.	Algebra II M1 Lesson 37: A Surprising Boost from Geometry
M.A2HS.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

Expressions and Equations

Use complex numbers in polynomial identities and equations.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.3 Solve quadratic equations with real coefficients that have complex solutions.	Algebra II M1 Lesson 38: Complex Numbers as Solutions to Equations Algebra II M1 Lesson 39: Factoring Extended to the Complex Realm
M.A2HS.4 Factor special case polynomials with real coefficients that produce complex zeros.	Algebra II M1 Lesson 40: Obstacles Resolved—A Surprising Result

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.5 Show that the Fundamental Theorem of Algebra is true for quadratic polynomials with real coefficients.	Algebra II M1 Lesson 40: Obstacles Resolved—A Surprising Result

Expressions and Equations

Interpret the structure of expressions.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.6 Interpret expressions including rational and polynomial expressions that represent a quantity in terms of its context.	Algebra II M1 Lesson 16: Modeling with Polynomials—An Introduction Algebra II M1 Lesson 17: Modeling with Polynomials—An Introduction Algebra II M1 Lesson 23: Comparing Rational Expressions Algebra II M1 Lesson 27: Word Problems Leading to Rational Equations Algebra II M3 Lesson 9: Logarithms—How Many Digits Do You Need?
M.A2HS.6.a Interpret parts of an expression, such as terms, factors, and coefficients.	Algebra I M4 Lesson 1: Multiplying and Factoring Polynomial Expressions Algebra I M4 Lesson 2: Multiplying and Factoring Polynomial Expressions Algebra I M4 Lesson 3: Advanced Factoring Strategies for Quadratic Expressions Algebra I M4 Lesson 4: Advanced Factoring Strategies for Quadratic Expressions

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.6.b Interpret complicated expressions by viewing one or more of their parts as a single entity.	Algebra I M3 Lesson 4: Why Do Banks Pay YOU to Provide Their Services? Algebra I M3 Lesson 5: The Power of Exponential Growth Algebra I M3 Lesson 6: Exponential Growth—U.S. Population and World Population Algebra I M3 Lesson 7: Exponential Decay Algebra I M4 Lesson 6: Solving Basic One-Variable Quadratic Equations Algebra I M4 Lesson 12: Completing the Square Algebra I M4 Lesson 17: Graphing Quadratic Functions from the Standard Form, $f(x) = ax^2 + bx + c$
M.A2HS.7 Use the structure of expressions including polynomial and rational expressions to identify ways to rewrite them.	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 M1 Lesson 22: Equivalent Rational Expressions Algebra II M1 Lesson 23: Comparing Rational Expressions 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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.7 ***continued***	Algebra II M3 Lesson 5: Irrational Exponents 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?

Expressions and Equations

Write expressions in equivalent forms to solve problems.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.8 Derive the formula for the sum of a finite geometric and use the formula to solve problems.	Algebra II M3 Topic E: Geometric Series and Finance

Expressions and Equations

Perform arithmetic operations on polynomials.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.9 Recognize that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. Perform operations on polynomials with degree higher than two.	Algebra II M1 Lesson 1: Successive Differences in Polynomials Algebra II M1 Lesson 2: The Multiplication of Polynomials Algebra II M1 Lesson 5: Putting It All Together

Expressions and Equations

Understand the relationship between zeros and factors of polynomials.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.10 Apply the Remainder Theorem to polynomial functions.	Algebra II M1 Lesson 19: The Remainder Theorem
M.A2HS.11 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.	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 11: The Special Role of Zero in Factoring

Expressions and Equations

Use polynomial identities to solve problems.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.12 Prove polynomial identities and use them to describe numerical relationships.	Algebra II M1 Lesson 2: The Multiplication of Polynomials Algebra II M1 Lesson 3: The Division of Polynomials Algebra II M1 Lesson 6: Dividing by $x - a$ and by $x + a$ Algebra II M1 Lesson 7: Mental Math Algebra II M1 Lesson 8: The Power of Algebra—Finding Primes Algebra II M1 Lesson 10: The Power of Algebra—Finding Pythagorean Triples
M.A2HS.13 Apply the Binomial Theorem for the expansion of $(x + y)^n$ in powers of x and y for a positive integer n with coefficients determined, for example, by Pascal's Triangle.	Precalculus and Advanced Topics M3 Lesson 4: The Binomial Theorem Precalculus and Advanced Topics M3 Lesson 5: The Binomial Theorem

Expressions and Equations

Rewrite rational expressions.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.14 Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in different forms using inspection, long division, synthetic division, or, for the more complicated examples, a computer algebra system.	Algebra II M1 Lesson 3: The Division of Polynomials Algebra II M1 Lesson 4: Comparing Methods—Long Division, Again? Algebra II M1 Lesson 5: Putting It All Together 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 *Supplemental material is necessary to address writing $a(x)/b(x)$ in different forms using synthetic division.*
M.A2HS.15 Recognize that rational expressions form a system analogous to the rational numbers, namely, they are closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.	Precalculus and Advanced Topics M3 Lesson 10: The Structure of Rational Expressions

Expressions and Equations

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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.16 Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.	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

Expressions and Equations

Represent and solve equations and inequalities graphically.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.17 Explain why the x-coordinates of the points where the graphs of the linear, polynomial, rational, absolute value, exponential, and logarithmic equations $y = f(\mathrm{x})$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately (e.g., using technology to graph the functions, make tables of values, or find successive approximations).	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

Expressions and Equations

Solve systems of equations.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.18 Solve a simple 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

Functions

Create equations that describe numbers or relationships.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.19 Create equations and inequalities in one variable, representing linear, quadratic, simple rational, and exponential relationships, and use them to solve problems.	Algebra II M1 Lesson 1: Successive Differences in Polynomials Algebra II M1 Lesson 27: Word Problems Leading to Rational Equations 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 *Supplemental material is necessary to fully address this standard.*

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.20 Create equations in two or more variables, representing linear, exponential, and quadratic relationships, between quantities.	Algebra I M1 Lesson 5: Two Graphing Stories Algebra I M1 Lesson 20: Solution Sets to Equations with Two Variables Algebra I M1 Lesson 23: Solution Sets to Simultaneous Equations Algebra I M4 Lesson 24: Modeling with Quadratic Functions Algebra II M1 Lesson 1: Successive Differences in Polynomials Algebra II M1 Lesson 30: Linear Systems in Three Variables Algebra II M1 Lesson 31: Systems of Equations Algebra II M1 Lesson 32: Graphing Systems of Equations
M.A2HS.21 Represent constraints by linear, exponential, or quadratic equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context.	Algebra I M4 Lesson 24: Modeling with Quadratic Functions Algebra II M1 Lesson 1: Successive Differences in Polynomials Algebra II M1 Lesson 16: Modeling with Polynomials—An Introduction Algebra II M1 Lesson 20: Modeling Riverbeds with Polynomials Algebra II M1 Lesson 30: Linear Systems in Three Variables Algebra II M1 Lesson 31: Systems of Equations Algebra II M1 Lesson 32: Graphing Systems of Equations

Functions

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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.22 Select 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 given a verbal description of the relationship. Relate the domain of a function to its graph based on the behavior of data and context, and where applicable, to the quantitative relationship it describes.	Algebra II M1 Lesson 16: Modeling with Polynomials—An Introduction Algebra II M1 Lesson 17: Modeling with Polynomials—An Introduction Algebra II M1 Lesson 20: Modeling Riverbeds with Polynomials Algebra II M1 Lesson 21: Modeling Riverbeds with Polynomials Algebra II M3 Lesson 6: Euler's Number, e 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 Algebra II M3 Lesson 21: The Graph of the Natural Logarithm Function Algebra II M3 Lesson 27: Modeling with Exponential Functions
M.A2HS.23 Select a model function based on behavior of data and context to calculate and interpret the average rate of change of linear, exponential, quadratic, and model functions based on behavior of data and context (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	Algebra I M3 Lesson 6: Exponential Growth—U.S. Population and World Population Algebra I M3 Lesson 21: Comparing Linear and Exponential Models Again Algebra I M3 Lesson 22: Modeling an Invasive Species Population Algebra I M4 Lesson 24: Modeling with Quadratic Functions Algebra I M5 Lesson 4: Modeling a Context from a Graph Algebra II M3 Lesson 6: Euler's Number, e Algebra II M3 Lesson 22: Choosing a Model Algebra II M3 Lesson 25: Geometric Sequences and Exponential Growth and Decay Algebra II M3 Lesson 27: Modeling with Exponential Functions

Functions

Analyze functions using different representations.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.24 Graph quadratic, polynomial, square root, cube root, piecewise-defined functions, including step functions and absolute value functions, exponential, and logarithmic functions expressed symbolically and show key features of the graph. Use applications and how key features relate to characteristics of a situation, making selection of a particular type of function model appropriate.	Algebra I M1 Lesson 1: Graphs of Piecewise Linear Functions Algebra I M3 Lesson 15: Piecewise Functions Algebra I M3 Lesson 24: Piecewise and Step Functions in Context Algebra I M4 Lesson 8: Exploring the Symmetry in Graphs of Quadratic Functions Algebra I M4 Lesson 9: Graphing Quadratic Functions from Factored Form, $f(x) = a(x - m)(x - n)$ Algebra I M4 Lesson 16: Graphing Quadratic Equations from the Vertex Form, $y = a(x - h)^2 + k$ Algebra I M4 Lesson 17: Graphing Quadratic Functions from the Standard Form, $f(x) = ax^2 + bx + c$ Algebra I M4 Lesson 18: Graphing Cubic, Square Root, and Cube Root Functions Algebra II M1 Lesson 14: Graphing Factored Polynomials Algebra II M1 Lesson 15: Structure in Graphs of Polynomial Functions 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 21: The Graph of the Natural Logarithm Function Algebra II M3 Lesson 22: Choosing a Model
M.A2HS.24.a For polynomial functions, focus on identifying zeros and showing end behavior.	Algebra II M1 Lesson 14: Graphing Factored Polynomials Algebra II M1 Lesson 15: Structure in Graphs of Polynomial Functions Algebra II M1 Lesson 16: Modeling with Polynomials—An Introduction

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.24.b For exponential and logarithmic functions, focus on showing intercepts and end behavior.	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 21: The Graph of the Natural Logarithm Function
M.A2HS.25 Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function focusing on applications and how key features relate to characteristics of a situation, making selection of a particular type of function model appropriate.	Algebra II M3 Lesson 22: Choosing a Model 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
M.A2HS.26 Compare properties of two functions each represented in a different way, such as algebraically, graphically, numerically in tables, or by verbal descriptions. Focus on applications and how key features relate to characteristics of a situation.	Algebra I M4 Lesson 22: Comparing Quadratic, Square Root, and Cube Root Functions Represented in Different Ways 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

Functions

Build a function that models a relationship between two quantities.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.27 Write a function that describes a relationship between two quantities. Combine standard function types using arithmetic operations.	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

Functions

Build new functions from existing functions.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.28 Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $kf(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. Observe the effect of multiple transformations on a single graph and the common effect of each transformation across function types and use transformations to model situations.	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 I M4 Lesson 21: Transformations of the Quadratic Parent Function, $f(x) = x^2$ Algebra II M3 Lesson 17: Graphing the Logarithm Function 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 Algebra II M3 Lesson 28: Newton's Law of Cooling, Revisited

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.29 Find inverse functions for simple polynomial, simple rational, simple radical, and use simple exponential functions. 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. Consider situations where the domain of the function must be restricted in order for the inverse to exist.	Algebra II M3 Lesson 19: The Inverse Relationship Between Logarithmic and Exponential Functions Precalculus and Advanced Topics M3 Topic C: Inverse Functions

Functions

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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.30 For exponential models, express as a logarithm the solution to $a \cdot b^{ct} = d$, where a, c, and d are numbers and the base b is 2, 10, or e; 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

Statistics and Probability

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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.31 Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.	Algebra II M4 Topic B: Modeling Data Distributions

Statistics and Probability

Understand and evaluate random processes underlying statistical experiments.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.32 Understand statistics as a process for making inferences about population parameters based on a random sample from that population. Compare theoretical and empirical results to evaluate the effectiveness.	Algebra II M4 Lesson 1: Chance Experiments, Sample Spaces, and Events Algebra II M4 Lesson 13: Using Sample Data to Estimate a Population Characteristic Algebra II M4 Lesson 14: Sampling Variability in the Sample Proportion Algebra II M4 Lesson 15: Sampling Variability in the Sample Proportion Algebra II M4 Lesson 16: Margin of Error When Estimating a Population Proportion Algebra II M4 Lesson 17: Margin of Error When Estimating a Population Proportion Algebra II M4 Lesson 18: Sampling Variability in the Sample Mean Algebra II M4 Lesson 19: Sampling Variability in the Sample Mean Algebra II M4 Lesson 20: Margin of Error When Estimating a Population Mean Algebra II M4 Lesson 21: Margin of Error When Estimating a Population Mean
M.A2HS.33 Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation.	Algebra II M4 Lesson 1: Chance Experiments, Sample Spaces, and Events

Statistics and Probability

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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.34 Recognize the purposes of and differences among sample 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
M.A2HS.35 Use data from a sample survey to estimate a population mean or proportion; develop a margin of error using simulation models for random sampling. Informally develop the concepts of statistical significance and variability.	Algebra II M4 Lesson 14: Sampling Variability in the Sample Proportion Algebra II M4 Lesson 15: Sampling Variability in the Sample Proportion Algebra II M4 Lesson 16: Margin of Error When Estimating a Population Proportion Algebra II M4 Lesson 17: Margin of Error When Estimating a Population Proportion Algebra II M4 Lesson 18: Sampling Variability in the Sample Mean Algebra II M4 Lesson 19: Sampling Variability in the Sample Mean Algebra II M4 Lesson 20: Margin of Error When Estimating a Population Mean Algebra II M4 Lesson 21: Margin of Error When Estimating a Population Mean Algebra II M4 Lesson 26: Ruling Out Chance Algebra II M4 Lesson 27: Ruling Out Chance

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.36 Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant. Recognize that some unlikely results can occur solely through randomness inherent in the system and "statistical significance" represents this likelihood. Make use of statistics as a way of dealing with, not eliminating, this inherent randomness.	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
M.A2HS.37 Evaluate reports based on data. Focus on data collection and how conclusions can be drawn from data.	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

Statistics and Probability

Use probability to evaluate outcomes of decisions.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.A2HS.38 Use probabilities to make fair decisions, including situations involving quality control, false positive, and false negative results.	Precalculus and Advanced Topics M5 Lesson 16: Making Fair Decisions Precalculus and Advanced Topics M5 Lesson 17: Fair Games
M.A2HS.39 Analyze decisions and strategies using probability concepts, including situations involving quality control, false positive, and false negative results.	Precalculus and Advanced Topics M5 Lesson 15: Using Expected Values to Compare Strategies Precalculus and Advanced Topics M5 Lesson 18: Analyzing Decisions and Strategies Using Probability Precalculus and Advanced Topics M5 Lesson 19: Analyzing Decisions and Strategies Using Probability