EUREKA MATH®

GREAT MINDS®

ABOUT *EUREKA MATH*

Created by the nonprofit Great Minds, *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

Eureka Math is the only curriculum found by EdReports.org to align fully with the Common Core State Standards for Mathematics for all grades, Kindergarten through Grade 8. 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 academic growth and impressive test scores after using *Eureka Math*. See their stories and data at greatminds.org/data.

FULL SUITE OF RESOURCES

As a nonprofit, 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

MATH 2

Eureka Math does not currently offer an integrated curriculum; however, the North Carolina Standard Course of Study for Math 2 is nearly fully covered by the *Eureka Math* curriculum. Standards from this pathway will require the use of *Eureka Math* content from multiple high school courses along with some strategic placement of supplemental materials. A detailed analysis of alignment is provided in the table below.

Conceptual Category	Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
Number and Quantity	**The Real Number System**	**Cluster: Extend the properties of exponents to rational exponents.**	
		NC.M2.N-RN.1 Explain how expressions with rational exponents can be rewritten as radical expressions.	Algebra II M3 Topic A: Real Numbers
		NC.M2.N-RN.2 Rewrite expressions with radicals and rational exponents into equivalent expressions using the properties of exponents.	Algebra II M3 Topic A: Real Numbers
		Cluster: Use properties of rational and irrational numbers.	
		NC.M2.N-RN.3 Use the properties of rational and irrational numbers to explain why: • the sum or product of two rational numbers is rational; • the sum of a rational number and an irrational number is irrational; • the product of a nonzero rational number and an irrational number is irrational.	Algebra I M4 Lesson 13: Solving Quadratic Equations by Completing the Square

Conceptual Category	Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	The Complex Number System	**Cluster: Defining complex numbers.**	
		NC.M2.N-CN.1 Know there is a complex number i such that $i^2 = -1$, and every complex number has the form $a + bi$ where a and b are real numbers.	Algebra II M1 Lesson 37: A Surprising Boost from Geometry
Algebra	**Seeing Structure in Expressions**	**NC.M2.A-SSE.1** Interpret expressions that represent a quantity in terms of its context. a. Identify and interpret parts of a quadratic, square root, inverse variation, or right triangle trigonometric expression, including terms, factors, coefficients, radicands, and exponents. b. Interpret quadratic and square root expressions made of multiple parts as a combination of single entities to give meaning in terms of a context.	

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			Geometry M2 Lesson 27: Sine and Cosine of Complementary Angles and Special Angles Algebra II M1 Lesson 9: Radicals and Conjugates Algebra II M1 Lesson 14: Graphing Factored Polynomials Algebra II M1 Lesson 15: Structure in Graphs of Polynomial Functions Algebra II M1 Lesson 22: Equivalent Rational Expressions Algebra II M1 Lesson 23: Comparing Rational Expressions Algebra II M1 Lesson 28: A Focus on Square Roots
		NC.M2.A-SSE.3 Write an equivalent form of a quadratic expression by completing the square, where a is an integer of a quadratic expression, $ax^2 + bx + c$, to reveal the maximum or minimum value of the function the expression defines.	Algebra I M4 Lesson 12: Completing the Square Algebra I M4 Lesson 17: Graphing Quadratic Functions from the Standard Form, $f(x) = ax^2 + bx + c$

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	Arithmetic with Polynomial and Rational Expressions	**Cluster: Perform arithmetic operations on polynomials.**	
		NC.M2.A-APR.1 Extend the understanding that operations with polynomials are comparable to operations with integers by adding, subtracting, and multiplying polynomials.	Algebra I M1 Topic B: The Structure of Expressions Algebra I M4 Lessons 1–2: Multiplying and Factoring Polynomial Expressions Algebra I M4 Lessons 3–4: Advanced Factoring Strategies for Quadratic Expressions
	Creating Equations	**Cluster: Create equations that describe numbers or relationships.**	
		NC.M2.A-CED.1 Create equations and inequalities in one variable that represent quadratic, square root, inverse variation, and right triangle trigonometric relationships and use them to solve problems.	Algebra I M1 Lesson 18: Equations Involving a Variable Expression in the Denominator 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 M5 Lesson 6: Modeling a Context from Data Algebra I M5 Lesson 9: Modeling a Context from a Verbal Description Geometry M2 Topic E: Trigonometry Algebra II M1 Lessons 20–21: Modeling Riverbeds with Polynomials Algebra II M1 Lesson 27: Word Problems Leading to Rational Equations Algebra II M1 Lesson 29: Solving Radical Equations

Conceptual Category	Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
		NC.M2.A-CED.2 Create and graph equations in two variables to represent quadratic, square root and inverse variation relationships between quantities.	Algebra I M4 Lesson 9: Graphing Quadratic Functions from Factored Form, $f(x) = a(x - m)(x - n)$ Algebra I M4 Lesson 12: Completing the Square Algebra I M4 Lesson 16: Graphing Quadratic Equations from the Vertex Form, $y = a(x - h)^2 + k$ Algebra I M4 Lessons 23–24: Modeling with Quadratic Functions Algebra I M5: A Synthesis of Modeling with Equations and Functions Algebra II M1 Lesson 1: Successive Differences in Polynomials Algebra II M1 Lessons 16–17: Modeling with Polynomials—An Introduction Algebra II M1 Lessons 20–21: Modeling Riverbeds with Polynomials Precalculus and Advanced Topics M3 Lesson 13: Horizontal and Vertical Asymptotes of Graphs of Rational Functions Precalculus and Advanced Topics M3 Lesson 14: Graphing Rational Functions Precalculus and Advanced Topics M3 Lesson 15: Transforming Rational Functions

Conceptual Category	Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
		NC.M2.A-CED.3 Create systems of linear, quadratic, square root, and inverse variation equations to model situations in context.	Algebra II M1 Lessons 20–21: Modeling Riverbeds with Polynomials Algebra II M1 Lesson 31: Systems of Equations *Note: Supplemental material may be necessary to completely address this standard.*
	Reasoning with Equations and Inequalities	**Cluster: Understand solving equations as a process of reasoning and explain the reasoning.**	
		NC.M2.A-REI.1 Justify a chosen solution method and each step of the solving process for quadratic, square root and inverse variation equations using mathematical reasoning.	Algebra I M1 Lesson 17: Equations Involving Factored Expressions 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

Conceptual Category	Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
		NC.M2.A-REI.2 Solve and interpret one variable inverse variation and square root equations arising from a context, and explain how extraneous solutions may be produced.	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

Conceptual Category	Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
		Cluster: Solve equations and inequalities in one variable.	
		NC.M2.A-REI.4 Solve for all solutions of quadratic equations in one variable. a. Understand that the quadratic formula is the generalization of solving $ax^2 + bx + c$ by using the process of completing the square. b. Explain when quadratic equations will have non-real solutions and express complex solutions as $a \pm bi$ for real numbers a and b.	Algebra I M4 Lesson 13: Solving Quadratic Equations by Completing the Square Algebra I M4 Lesson 14: Deriving the Quadratic Formula Algebra II M1 Lesson 38: Complex Numbers as Solutions to Equations
		Cluster: Solve systems of equations.	
		NC.M2.A-REI.7 Use tables, graphs, and algebraic methods to approximate or find exact solutions of systems of linear and quadratic equations, and interpret the solutions in terms of a context.	Algebra II M1 Lesson 31: Systems of Equations Algebra II M1 Lesson 32: Graphing Systems of Equations
		Cluster: Represent and solve equations and inequalities graphically.	
		NC.M2.A-REI.11 Extend the understanding that the x-coordinates of the points where the graphs of two square root and/or inverse variation equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$ and approximate solutions using graphing technology or successive approximations with a table of values.	*Eureka Math* does not explicitly address this standard.

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Functions	**Interpreting Functions**	**Cluster: Understand the concept of a function and use function notation.**	
		NC.M2.F-IF.1 Extend the concept of a function to include geometric transformations in the plane by recognizing that: • the domain and range of a transformation function *f* are sets of points in the plane; • the image of a transformation is a function of its pre-image.	Geometry M1 Lesson 20: Applications of Congruence in Terms of Rigid Motions Geometry M2 Lesson 6: Dilations as Transformations of the Plane *Note: Supplemental material may be necessary to completely address this standard.*
		NC.M2.F-IF.2 Extend the use of function notation to express the image of a geometric figure in the plane resulting from a translation, rotation by multiples of 90 degrees about the origin, reflection across an axis, or dilation as a function of its pre-image.	Geometry M1 Topic C: Transformations/ Rigid Motions Geometry M2 Lesson 6: Dilations as Transformations of the Plane *Note: Supplemental material may be necessary to completely address this standard.*

Conceptual Category	Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
		Cluster: Interpret functions that arise in applications in terms of the context.	
		NC.M2.F-IF.4 Interpret key features of graphs, tables, and verbal descriptions in context to describe functions that arise in applications relating two quantities, including: domain and range, rate of change, symmetries, and end behavior.	Algebra I M3 Lesson 13: Interpreting the Graph of a Function Algebra I M3 Lesson 14: Linear and Exponential Models— Comparing Growth Rates Algebra I M3 Topic D: Using Functions and Graphs to Solve Problems 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 10: Interpreting Quadratic Functions from Graphs and Tables Algebra I M4 Lesson 17: Graphing Quadratic Functions from the Standard Form, $f(x) = ax^2 + bx + c$ Algebra I M4 Lesson 22: Comparing Quadratic, Square Root, and Cube Root Functions Represented in Different Ways

Conceptual Category	Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
		Cluster: Analyze functions using different representations.	
		NC.M2.F-IF.7 Analyze quadratic, square root, and inverse variation functions by generating different representations, by hand in simple cases and using technology for more complicated cases, to show key features, including: domain and range; intercepts; intervals where the function is increasing, decreasing, positive, or negative; rate of change; maximums and minimums; symmetries; and end behavior.	Algebra I M3 Lesson 11: The Graph of a Function Algebra I M3 Lesson 12: The Graph of the Equation $y = f(x)$ Algebra I M3 Lesson 16: Graphs Can Solve Equations Too Algebra I M3 Lesson 19: Four Interesting Transformations of Functions 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 I M4 Lesson 19: Translating Graphs of Functions

Conceptual Category	Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
			Algebra I M4 Lesson 20: Stretching and Shrinking Graphs of FunctionsAlgebra II M1 Lesson 14: Graphing Factore Polynomials Algebra II M1 Lesson 15: Stucture in Graphs of Polynomial Function Algebra II M1 Lesson 16: Modeling with Polynomials—An Introduction Precalculus and Advanced Topics M3 Topic B: Rational Functions and Composition of Functions

Conceptual Category	Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
		NC.M2.F-IF.8 Use equivalent expressions to reveal and explain different properties of a function by developing and using the process of completing the square to identify the zeros, extreme values, and symmetry in graphs and tables representing quadratic functions, and interpret these in terms of a context.	Algebra I M4 Lesson 9: Graphing Quadratic Functions from Factored Form, $f(x) = a(x - m)(x - n)$ Algebra I M4 Topic B: Using Different Forms for Quadratic Functions Algebra I M4 Lesson 21: Transformations of the Quadratic Parent Function, $f(x) = x^2$ Algebra I M4 Lesson 23: Modeling with Quadratic Functions
		NC.M2.F-IF.9 Compare key features of two functions (linear, quadratic, square root, or inverse variation functions) each with a different representation (symbolically, graphically, numerically in tables, or by verbal descriptions).	Algebra I M4 Lesson 22: Comparing Quadratic, Square Root, and Cube Root Functions Represented in Different Ways Algebra I M5: A Synthesis of Modeling with Equations and Functions *Note: Supplemental material may be necessary to completely address this standard.*

Conceptual Category	Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
	Building Functions	**Cluster: Build a function that models a relationship between two quantities.**	
		NC.M2.F-BF.1 Write a function that describes a relationship between two quantities by building quadratic functions with real solution(s) and inverse variation functions given a graph, a description of a relationship, or ordered pairs (include reading these from a table).	Algebra I M5: A Synthesis of Modeling with Equations and Functions Algebra II M1 Lesson 15: Structure in Graphs of Polynomial Functions Algebra II M1 Lessons 20–21: Modeling Riverbeds with Polynomials *Note: Supplemental material may be necessary to completely address this standard*.
		Cluster: Build new functions from existing functions.	
		NC.M2.F-BF.3 Understand the effects of the graphical and tabular representations of a linear, quadratic, square root, and inverse variation function f with $k \cdot f(x)$, $f(x) + k$, $f(x + k)$ for specific values of k (both positive and negative).	Algebra I M3 Topic C: 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, $f(x) = x^2$ Precalculus and Advanced Topics M3 Lesson 15: Transforming Rational Functions

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Geometry	**Congruence**	**Cluster: Experiment with transformations in the plane.**	
		NC.M2.G-CO.2 Experiment with transformations in the plane. • Represent transformations in the plane. • Compare rigid motions that preserve distance and angle measure (translations, reflections, rotations) to transformations that do not preserve both distance and angle measure (e.g. stretches, dilations). • Understand that rigid motions produce congruent figures while dilations produce similar figures.	Geometry M1 Topic C: Transformations/Rigid Motions Geometry M2 Lesson 6: Dilations as Transformations of the Plane Geometry M2 Lesson 12: What Are Similarity Transformations, and Why Do We Need Them? Geometry M2 Lesson 13: Properties of Similarity Transformations
		NC.M2.G-CO.3 Given a triangle, quadrilateral, or regular polygon, describe any reflection or rotation symmetry, i.e., actions that carry the figure onto itself. Identify center and angle(s) of rotation symmetry. Identify line(s) of reflection symmetry.	Geometry M1 Lesson 15: Rotations, Reflections, and Symmetry Geometry M1 Lesson 21: Correspondence and Transformations
		NC.M2.G-CO.4 Verify experimentally properties of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.	Geometry M1 Lesson 12: Transformations—The Next Level Geometry M1 Lesson 13: Rotations Geometry M1 Lesson 14: Reflections Geometry M1 Lesson 16: Translations

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		NC.M2.G-CO.5 Given a geometric figure and a rigid motion, find the image of the figure. Given a geometric figure and its image, specify a rigid motion or sequence of rigid motions that will transform the pre-image to its image.	Geometry M1 Topic C: Transformations/ Rigid Motions
		Cluster: Understand congruence in terms of rigid motions.	
		NC.M2.G-CO.6 Determine whether two figures are congruent by specifying a rigid motion or sequence of rigid motions that will transform one figure onto the other.	Geometry M1 Lesson 15: Rotations, Reflections, and Symmetry Geometry M1 Lesson 16: Translations Geometry M1 Lesson 19: Construct and Apply a Sequence of Rigid Motions Geometry M1 Lesson 21: Correspondence and Transformations
		NC.M2.G-CO.7 Use the properties of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.	Geometry M1 Lesson 19: Construct and Apply a Sequence of Rigid Motions Geometry M1 Lesson 20: Applications of Congruence in Terms of Rigid Motions Geometry M1 Lesson 21: Correspondence and Transformations Geometry M1 Topic D: Congruence Geometry M1 Topic G: Axiomatic Systems

Conceptual Category	Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
		NC.M2.G-CO.8 Use congruence in terms of rigid motion. Justify the ASA, SAS, and SSS criteria for triangle congruence. Use criteria for triangle congruence (ASA, SAS, SSS, HL) to determine whether two triangles are congruent.	Geometry M1 Topic D: Congruence Geometry M1 Topic G: Axiomatic Systems
		Cluster: Prove geometric theorems.	
		NC.M2.G-CO.9 Prove theorems about lines and angles and use them to prove relationships in geometric figures including: • Vertical angles are congruent. • When a transversal crosses parallel lines, alternate interior angles are congruent. • When a transversal crosses parallel lines, corresponding angles are congruent. • Points are on a perpendicular bisector of a line segment if and only if they are equidistant from the endpoints of the segment. • Use congruent triangles to justify why the bisector of an angle is equidistant from the sides of the angle.	Geometry M1 Lesson 4: Construct a Perpendicular Bisector Geometry M1 Topic B: Unknown Angles Geometry M1 Lesson 18: Looking More Carefully at Parallel Lines Geometry M1 Topic G: Axiomatic Systems

Conceptual Category	Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
		NC.M2.G-CO.10 Prove theorems about triangles and use them to prove relationships in geometric figures including: • The sum of the measures of the interior angles of a triangle is 180º. • An exterior angle of a triangle is equal to the sum of its remote interior angles. • The base angles of an isosceles triangle are congruent. • The segment joining the midpoints of two sides of a triangle is parallel to the third side and half the length.	G8 M2 Topic C: Congruence and Angle Relationships Geometry M1 Lesson 8: Solve for Unknown Angles—Angles in a Triangle Geometry M1 Lesson 23: Base Angles of Isosceles Triangles Geometry M1 Topic E: Proving Properties of Geometric Figures Geometry M1 Topic G: Axiomatic Systems
	Similarity, Right Triangles, and Trigonometry	**Cluster: Understand similarity in terms of similarity transformations.**	
		NC.M2.G-SRT.1 Verify experimentally the properties of dilations with given center and scale factor: a. When a line segment passes through the center of dilation, the line segment and its image lie on the same line. When a line segment does not pass through the center of dilation, the line segment and its image are parallel.	Geometry M2 Lesson 3: Making Scale Drawings Using the Parallel Method Geometry M2 Lesson 5: Scale Factors Geometry M2 Topic A: Scale Drawings Geometry M2 Topic B: Dilations Geometry M2 Lesson 9: How Do Dilations Map Angles?

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		b. The length of the image of a line segment is equal to the length of the line segment multiplied by the scale factor. c. The distance between the center of a dilation and any point on the image is equal to the scale factor multiplied by the distance between the dilation center and the corresponding point on the pre-image. d. Dilations preserve angle measure.	
		NC.M2.G-SRT.2 Understand similarity in terms of transformations. a. Determine whether two figures are similar by specifying a sequence of transformations that will transform one figure into the other. b. Use the properties of dilations to show that two triangles are similar when all corresponding pairs of sides are proportional and all corresponding pairs of angles are congruent.	Geometry M2 Lesson 12: What Are Similarity Transformations, and Why Do We Need Them? Geometry M2 Lesson 13: Properties of Similarity Transformations Geometry M2 Lesson 14: Similarity
		NC.M2.G-SRT.3 Use transformations (rigid motions and dilations) to justify the AA criterion for triangle similarity.	Geometry M2 Lesson 15: The Angle–Angle (AA) Criterion for Two Triangles to Be Similar Geometry M2 Lesson 17: The Side–Angle–Side (SAS) and Side–Side–Side (SSS) Criteria for Two Triangles to Be Similar

Conceptual Category	Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
		Cluster: Prove theorems involving similarity.	
		NC.M2.G-SRT.4 Use similarity to solve problems and to prove theorems about triangles. Use theorems about triangles to prove relationships in geometric figures. • A line parallel to one side of a triangle divides the other two sides proportionally and its converse. • The Pythagorean Theorem	Geometry M2 Lesson 4: Comparing the Ratio Method with the Parallel Method Geometry M2 Lesson 5: Scale Factors Geometry M2 Topic B: Dilations Geometry M2 Lesson 17: The Side–Angle–Side (SAS) and Side–Side–Side (SSS) Criteria for Two Triangles to Be Similar Geometry M2 Lesson 18: Similarity and the Angle Bisector Theorem Geometry M2 Lesson 19: Families of Parallel Lines and the Circumference of the Earth Geometry M2 Topic D: Applying Similarity to Right Triangles
		Cluster: Define trigonometric ratios and solve problems involving right triangles.	
		NC.M2.G-SRT.6 Verify experimentally that the side ratios in similar right triangles are properties of the angle measures in the triangle, due to the preservation of angle measure in similarity. Use this discovery to develop definitions of the trigonometric ratios for acute angles.	Geometry M2 Lesson 25: Incredibly Useful Ratios Geometry M2 Lesson 26: The Definition of Sine, Cosine, and Tangent

Conceptual Category	Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
		NC.M2.G-SRT.8 Use trigonometric ratios and the Pythagorean Theorem to solve problems involving right triangles in terms of a context.	Geometry M2 Topic E: Trigonometry
		NC.M2.G-SRT.12 Develop properties of special right triangles (45-45-90 and 30-60-90) and use them to solve problems.	Geometry M2 Lesson 25: Incredibly Useful Ratios Geometry M2 Lesson 26: The Definition of Sine, Cosine, and Tangent
Statistics and Probability	**Making Inference and Justifying Conclusions**	**Cluster: Understand and evaluate random processes underlying statistical experiments.**	
		NC.M2.S-IC.2 Use simulation to determine whether the experimental probability generated by sample data is consistent with the theoretical probability based on known information about the population.	Algebra II M4 Lesson 1: Chance Experiments, Sample Spaces, and Events
	Conditional Probability and the Rules for Probability	**Cluster: Understand independence and conditional probability and use them to interpret data.**	
		NC.M2.S-CP.1 Describe events as subsets of the outcomes in a sample space using characteristics of the outcomes or as unions, intersections and complements of other events.	Algebra II M4 Topic A: Probability

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		NC.M2.S-CP.3 Develop and understand independence and conditional probability. a. Use a 2-way table to develop understanding of the conditional probability of A given B (written P(A|B)) as the likelihood that A will occur given that B has occurred. That is, P(A|B) is the fraction of event B's outcomes that also belong to event A. b. Understand that event A is independent from event B if the probability of event A does not change in response to the occurrence of event B. That is P(A|B)=P(A).	Algebra II M4 Lesson 3–4: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables Algebra II M4 Lesson 6: Probability Rules
		NC.M2.S-CP.4 Represent data on two categorical variables by constructing a two-way frequency table of data. Interpret the two-way table as a sample space to calculate conditional, joint and marginal probabilities. Use the table to decide if events are independent.	Algebra II M4 Lesson 2: Calculating Probabilities of Events Using Two-Way Tables Algebra II M4 Lessons 3–4: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables
		NC.M2.S-CP.5 Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations.	Algebra II M4 Topic A: Probability

Conceptual Category	Domain	Standards for Mathematical Content	Aligned Components of *Eureka Math*
		Cluster: Use the rules of probability to compute probabilities for compound events in a uniform probability model.	
		NC.M2.S-CP.6 Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in context.	Algebra II M4 Lessons 3–4: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables
		NC.M2.S-CP.7 Apply the Addition Rule, P(A or B) = P(A) + P(B) – P(A and B), and interpret the answer in context.	Algebra II M4 Lesson 7: Probability Rules
		NC.M2.S-CP.8 Apply the general Multiplication Rule P(A and B) = P(A)P(B|A) = P(B)P(A|B), and interpret the answer in context. Include the case where A and B are independent: P(A and B) = P(A) P(B).	Precalculus and Advanced Topics M5 Lesson 1: The General Multiplication Rule Precalculus and Advanced Topics M5 Topic C: Using Probability to Make Decisions