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 which 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

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

South Carolina College- and Career-Ready Standards for Mathematics Correlation to *Eureka Math*™

GEOMETRY

The majority of the Geometry South Carolina College- and Career-Ready Standards for Mathematics are fully covered by the Geometry *Eureka Math* curriculum. The areas where the Geometry South Carolina College- and Career-Ready Standards for Mathematics and Geometry *Eureka Math* do not align will require the use of *Eureka Math* content from other grade levels or courses. A detailed analysis of alignment is provided in the table below.

INDICATORS

Green indicates that the South Carolina standard is fully addressed in *Eureka Math*.

Yellow indicates that the South Carolina standard may not be completely addressed in *Eureka Math*.

Red indicates that the South Carolina standard is not addressed in *Eureka Math*.

Blue indicates there is a discrepancy between the grade level at which this standard is addressed in the South Carolina standards and in *Eureka Math*.

Mathematical Process Standards	Aligned Components of *Eureka Math*
1: Make sense of problems and persevere in solving them. a. Relate a problem to prior knowledge. b. Recognize there may be multiple entry points to a problem and more than one path to a solution. c. Analyze what is given, what is not given, what is being asked, and what strategies are needed, and make an initial attempt to solve a problem. d. Evaluate the success of an approach to solve a problem and refine it if necessary.	Lessons in every module engage students in making sense of problems and persevering in solving them as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 1, which is specifically addressed in the following modules: Geometry M4: Connecting Algebra and Geometry Through Coordinates Geometry M5: Circles With and Without Coordinates
2: Reason both contextually and abstractly. a. Make sense of quantities and their relationships in mathematical and real-world situations. b. Describe a given situation using multiple mathematical representations. c. Translate among multiple mathematical representations and compare the meanings each representation conveys about the situation. d. Connect the meaning of mathematical operations to the context of a given situation.	Lessons in every module engage students in reasoning abstractly and quantitatively as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 2, which is specifically addressed in the following modules: Geometry M4: Connecting Algebra and Geometry Through Coordinates

Mathematical Process Standards	Aligned Components of *Eureka Math*
3: Use critical thinking skills to justify mathematical reasoning and critique the reasoning of others. a. Construct and justify a solution to a problem. b. Compare and discuss the validity of various reasoning strategies. c. Make conjectures and explore their validity. d. Reflect on and provide thoughtful responses to the reasoning of others.	Lessons in every module engage students in constructing viable arguments and critiquing the reasoning of others as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 3, which is specifically addressed in the following modules: Geometry M1: Congruence, Proof, and Constructions Geometry M2: Similarity, Proof, and Trigonometry Geometry M5: Circles With and Without Coordinates
4: Connect mathematical ideas and real-world situations through modeling. a. Identify relevant quantities and develop a model to describe their relationships. b. Interpret mathematical models in the context of the situation. c. Make assumptions and estimates to simplify complicated situations. d. Evaluate the reasonableness of a model and refine if necessary.	Lessons in every module engage students in modeling with mathematics as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 4, which is specifically addressed in the following modules: Geometry M1: Congruence, Proof, and Constructions Geometry M4: Connecting Algebra and Geometry Through Coordinates

Mathematical Process Standards	Aligned Components of *Eureka Math*
5: Use a variety of mathematical tools effectively and strategically. a. Select and use appropriate tools when solving a mathematical problem. b. Use technological tools and other external mathematical resources to explore and deepen understanding of concepts.	Lessons in every module engage students in using appropriate tools strategically as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 5, which is specifically addressed in the following modules: Geometry M1: Congruence, Proof, and Constructions
6: Communicate mathematically and approach mathematical situations with precision. a. Express numerical answers with the degree of precision appropriate for the context of a situation. b. Represent numbers in an appropriate form according to the context of the situation. c. Use appropriate and precise mathematical language. d. Use appropriate units, scales, and labels.	Lessons in every module engage students in attending to precision as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 6, which is specifically addressed in the following modules: Geometry M1: Congruence, Proof, and Constructions Geometry M3: Extending to Three Dimensions

Mathematical Process Standards	Aligned Components of *Eureka Math*
7: Identify and utilize structure and patterns. a. Recognize complex mathematical objects as being composed of more than one simple object. b. Recognize mathematical repetition in order to make generalizations. c. Look for structures to interpret meaning and develop solution strategies.	Lessons in every module engage students in looking for and making use of structure as required by this standard. This process standard is analogous to the CCSSM Standards for Mathematical Practice 7 and 8, which are specifically addressed in the following modules: Geometry M1: Congruence, Proof, and Constructions Geometry M2: Similarity, Proof, and Trigonometry Geometry M3: Extending to Three Dimensions Geometry M4: Connecting Algebra and Geometry Through Coordinates Geometry M5: Circles With and Without Coordinates

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
Circles	**G.GCI.1** Prove that all circles are similar.		Geometry M5 Lesson 7: The Angle Measure of an Arc
	G.GCI.2 Identify and describe relationships among inscribed angles, radii, and chords; among inscribed angles, central angles, and circumscribed angles; and between radii and tangents to circles. Use those relationships to solve mathematical and real-world problems.		Geometry M5: Circles With and Without Coordinates
	G.GCI.3 Construct the inscribed and circumscribed circles of a triangle using a variety of tools, including a compass, a straightedge, and dynamic geometry software, and prove properties of angles for a quadrilateral inscribed in a circle.		Geometry M5 Lesson 1: Thales' Theorem Geometry M5 Lesson 3: Rectangles Inscribed in Circles Geometry M5 Lesson 12: Tangent Segments Geometry M5 Topic E: Cyclic Quadrilaterals and Ptolemy's Theorem
	G.GCI.4 Construct a tangent line to a circle through a point on the circle, and construct a tangent line from a point outside a given circle to the circle; justify the process used for each construction.		Precalculus and Advanced Topics M4 Lesson 5: Tangent Lines and the Tangent Function
	G.GCI.5 Derive the formulas for the length of an arc and the area of a sector in a circle and apply these formulas to solve mathematical and real-world problems.		Geometry M5 Topic B: Arcs and Sectors

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
Congruence	**G.GCO.1** Define angle, perpendicular line, parallel line, line segment, ray, circle, and skew in terms of the undefined notions of point, line, and plane. Use geometric figures to represent and describe real-world objects.		Geometry M1 Topic A: Basic Constructions Geometry M1 Topic G: Axiomatic Systems
	G.GCO.2 Represent translations, reflections, rotations, and dilations of objects in the plane by using paper folding, sketches, coordinates, function notation, and dynamic geometry software, and use various representations to help understand the effects of simple transformations and their compositions.		Geometry M1 Topic C: Transformations/Rigid Motions Geometry M2 Lesson 6: Dilations as Transformations of the Plane
	G.GCO.3 Describe rotations and reflections that carry a regular polygon onto itself and identify types of symmetry of polygons, including line, point, rotational, and self-congruence, and use symmetry to analyze mathematical situations.		Geometry M2 Lesson 7: How Do Dilations Map Segments?
	G.GCO.4 Develop definitions 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

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	G.GCO.5 Predict and describe the results of transformations on a given figure using geometric terminology from the definitions of the transformations, and describe a sequence of transformations that maps a figure onto its image.		Geometry M1 Topic C: Transformations/Rigid Motions
	G.GCO.6 Demonstrate that triangles and quadrilaterals are congruent by identifying a combination of translations, rotations, and reflections in various representations that move 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
	G.GCO.7 Prove two triangles are congruent by applying the Side-Angle-Side, Angle-Side-Angle, Angle-Angle-Side, and Hypotenuse-Leg congruence conditions.		Geometry M1 Topic D: Congruence Geometry M1 Topic G: Axiomatic Systems

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	G.GCO.8 Prove, and apply in mathematical and real-world contexts, theorems about lines and angles, including the following:		
	a. vertical angles are congruent;		Geometry M1 Topic B: Unknown Angles Geometry M1 Topic G: Axiomatic Systems
	b. when a transversal crosses parallel lines, alternate interior angles are congruent, alternate exterior angles are congruent, and consecutive interior angles are supplementary;		Geometry M1 Topic B: Unknown Angles Geometry M1 Lesson 18: Looking More Carefully at Parallel Lines Geometry M1 Topic G: Axiomatic Systems
	c. any point on a perpendicular bisector of a line segment is equidistant from the endpoints of the segment;		Geometry M1 Lesson 4: Construct a Perpendicular Bisector
	d. perpendicular lines form four right angles.		Geometry M1 Lesson 4: Construct a Perpendicular Bisector Geometry M4 Topic B: Perpendicular and Parallel Lines in the Cartesian Plane

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	G.GCO.9 Prove, and apply in mathematical and real-world contexts, theorems about the relationships within and among triangles, including the following:		
	a. measures of interior angles of a triangle sum to 180°;		G8 M2 Lesson 13: Angle Sum of a Triangle Geometry M1 Lesson 8: Solve for Unknown Angles—Angles in a Triangle Geometry M1 Topic G: Axiomatic Systems
	b. base angles of isosceles triangles are congruent;		Geometry M1 Lesson 23: Base Angles of Isosceles Triangles Geometry M1 Topic G: Axiomatic Systems
	c. the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length;		Geometry M1 Lesson 29: Special Lines in Triangles Geometry M1 Topic G: Axiomatic Systems
	d. the medians of a triangle meet at a point.		Geometry M1 Lesson 30: Special Lines in Triangles Geometry M1 Topic G: Axiomatic Systems
	G.GCO.10 Prove, and apply in mathematical and real-world contexts, theorems about parallelograms, including the following:		
	a. opposite sides of a parallelogram are congruent;		Geometry M1 Lesson 28: Properties of Parallelograms Geometry M1 Topic G: Axiomatic Systems

Key Concepts	Content Standards for Mathematics	Aligned Components of *Eureka Math*
	b. opposite angles of a parallelogram are congruent;	Geometry M1 Lesson 28: Properties of Parallelograms Geometry M1 Topic G: Axiomatic Systems
	c. diagonals of a parallelogram bisect each other;	Geometry M1 Lesson 28: Properties of Parallelograms Geometry M1 Topic G: Axiomatic Systems
	d. rectangles are parallelograms with congruent diagonals;	Geometry M1 Lesson 28: Properties of Parallelograms Geometry M1 Topic G: Axiomatic Systems
	e. a parallelogram is a rhombus if and only if the diagonals are perpendicular	Geometry M1 Lesson 28: Properties of Parallelograms Geometry M1 Topic G: Axiomatic Systems
	G.GCO.11 Construct geometric figures using a variety of tools, including a compass, a straightedge, dynamic geometry software, and paper folding, and use these constructions to make conjectures about geometric relationships.	Geometry M1 Topic A: Basic Constructions Geometry M1 Topic C: Transformations/Rigid Motions
Geometric Measurement and Dimension	**G.GGMD.1** Explain the derivations of the formulas for the circumference of a circle, area of a circle, and volume of a cylinder, pyramid, and cone. Apply these formulas to solve mathematical and real-world problems.	Geometry M3: Extending to Three Dimensions

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	G.GGMD.2 Explain the derivation of the formulas for the volume of a sphere and other solid figures using Cavalieri's principle.		Geometry M3 Lesson 10: The Volume of Prisms and Cylinders and Cavalieri's Principle
	G.GGMD.3 Apply surface area and volume formulas for prisms, cylinders, pyramids, cones, and spheres to solve problems and justify results. Include problems that involve algebraic expressions, composite figures, geometric probability, and real-world applications.		Geometry M3: Extending to Three Dimensions
	G.GGMD.4 Describe the shapes of two-dimensional cross-sections of three-dimensional objects and use those cross-sections to solve mathematical and real-world problems.		Geometry M3: Extending to Three Dimensions
Expressing Geometric Properties with Equations	**G.GGPE.1** Understand that the standard equation of a circle is derived from the definition of a circle and the distance formula.		Geometry M5 Topic D: Equations for Circles and Their Tangents
	G.GGPE.4 Use coordinates to prove simple geometric theorems algebraically.		Geometry M4: Connecting Algebra and Geometry Through Coordinates Geometry M5 Lesson 19: Equations for Tangent Lines to Circles

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	G.GGPE.5 Analyze slopes of lines to determine whether lines are parallel, perpendicular, or neither. Write the equation of a line passing through a given point that is parallel or perpendicular to a given line. Solve geometric and real-world problems involving lines and slope.		Geometry M4 Lesson 4: Designing a Search Robot to Find a Beacon Geometry M4 Topic B: Perpendicular and Parallel Lines in the Cartesian Plane Geometry M5 Lesson 19: Equations for Tangent Lines to Circles
	G.GGPE.6 Given two points, find the point on the line segment between the two points that divides the segment into a given ratio.		Geometry M4 Topic D: Partitioning and Extending Segments and Parameterization of Lines
	G.GGPE.7 Use the distance and midpoint formulas to determine distance and midpoint in a coordinate plane, as well as areas of triangles and rectangles, when given coordinates.		Geometry M4: Connecting Algebra and Geometry Through Coordinates

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
Modeling	**G.GM.1** Use geometric shapes, their measures, and their properties to describe real-world objects.		Geometry M2 Lesson 19: Families of Parallel Lines and the Circumference of the Earth Geometry M2 Lesson 20: How Far Away Is the Moon? Geometry M3 Lesson 5: Three-Dimensional Space Geometry M3 Lesson 6: General Prisms and Cylinders and Their Cross-Sections Geometry M3 Lesson 11: The Volume Formula of a Pyramid and Cone Geometry M3 Lesson 12: The Volume Formula of a Sphere
	G.GM.2 Use geometry concepts and methods to model real-world situations and solve problems using a model.		Geometry M2 Lesson 2: Making Scale Drawings Using the Ratio Method Geometry M3 Lesson 11: The Volume Formula of a Pyramid and Cone Geometry M3 Lesson 12: The Volume Formula of a Sphere Geometry M3 Lesson 13: How Do 3D Printers Work?

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
Similarity, Right Triangles, and Trigonometry	**G.GSRT.1** Understand a dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. Verify experimentally the properties of dilations given by a center and a scale factor. Understand the dilation of a line segment is longer or shorter in the ratio given by the scale factor.		Geometry M2 Topic A: Scale Drawings Geometry M2 Topic B: Dilations
	G.GSRT.2 Use the definition of similarity to decide if figures are similar and justify decision. Demonstrate that two figures are similar by identifying a combination of translations, rotations, reflections, and dilations in various representations that move one figure onto the other.		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
	G.GSRT.3 Prove that two triangles are similar using the Angle-Angle criterion and apply the proportionality of corresponding sides to solve problems and justify results.		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

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	G.GSRT.4 Prove, and apply in mathematical and real-world contexts, theorems involving similarity about triangles, including the following:		
	a. A line drawn parallel to one side of a triangle divides the other two sides into parts of equal proportion.		Geometry M1 Topic E: Proving Properties of Geometric Figures Geometry M1 Topic G: Axiomatic Systems Geometry M2 Topic C: Similarity and Dilations Geometry M2 Topic D: Applying Similarity to Right Triangles
	b. If a line divides two sides of a triangle proportionally, then it is parallel to the third side.		Geometry M1 Topic E: Proving Properties of Geometric Figures Geometry M1 Topic G: Axiomatic Systems Geometry M2 Topic C: Similarity and Dilations Geometry M2 Topic D: Applying Similarity to Right Triangles
	c. The square of the hypotenuse of a right triangle is equal to the sum of squares of the other two sides.		Geometry M2 Topic D: Applying Similarity to Right Triangles Geometry M2 Lesson 30: Trigonometry and the Pythagorean Theorem

Key Concepts	Content Standards for Mathematics		Aligned Components of *Eureka Math*
	G.GSRT.5 Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.		Geometry M2 Lesson 16: Between-Figure and Within-Figure Ratios 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 Topic D: Applying Similarity to Right Triangles
	G.GSRT.6 Understand how the properties of similar right triangles allow the trigonometric ratios to be defined and determine the sine, cosine, and tangent of an acute angle in a right triangle.		Geometry M2 Lesson 25: Incredibly Useful Ratios Geometry M2 Lesson 26: The Definition of Sine, Cosine, and Tangent
	G.GSRT.7 Explain and use the relationship between the sine and cosine of complementary angles.		Geometry M2 Lesson 27: Sine and Cosine of Complementary Angles and Special Angles Geometry M2 Lesson 28: Solving Problems Using Sine and Cosine Geometry M2 Lesson 29: Applying Tangents
	G.GSRT.8 Solve right triangles in applied problems using trigonometric ratios and the Pythagorean Theorem.		Geometry M2 Topic E: Trigonometry

Key Concepts	Content Standards for Mathematics	Aligned Components of *Eureka Math*
Interpreting Data	**G.SPID.1** Select and create an appropriate display, including dot plots, histograms, and box plots, for data that includes only real numbers.	Algebra I M2: Descriptive Statistics
	G.SPID.2 Use statistics appropriate to the shape of the data distribution to compare center and spread of two or more different data sets that include all real numbers.	Algebra I M2 Lesson 3: Estimating Centers and Interpreting the Mean as a Balance Point Algebra I M2 Topic B: Describing Variability and Comparing Distributions
	G.SPID.3 Summarize and represent data from a single data set. Interpret differences in shape, center, and spread in the context of the data set, accounting for possible effects of extreme data points (outliers).	Algebra I M2: Descriptive Statistics