
Geometry | South Carolina College- and Career-Ready Mathematics 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

Mathematical Process Standards

MPS.PS.1

Make sense of problems and persevere in solving them strategically.

MPS.RC.1

Explain ideas using precise and contextually appropriate mathematical language, tools, and models.

MPS.C.1

Demonstrate a deep and flexible conceptual understanding of mathematical ideas, operations, and relationships while making real-world connections.

MPS.AJ.1

Use critical thinking skills to reason both abstractly and quantitatively.

MPS.SP.1

Identify and apply regularity in repeated reasoning to make generalizations.

Aligned Components of *Eureka Math*

Lessons in every module engage students in mathematical processes. These are designated in the Module Overview and labeled in lessons.

For example:

A STORY OF FUNCTIONS

Lesson 11 **M1**

GEOMETRY

MP.7

Use any of these four facts to prove that the three angles of a triangle sum to 180° . For this proof, you need to draw an auxiliary line parallel to one of the triangle's sides and passing through the vertex opposite that side. Add any necessary labels, and write out your proof.

Draw an auxiliary line \overline{JK} so that $\overline{JK} \parallel \overline{BC}$.

$\overline{JK} \parallel \overline{BC}$	Construction
$d + a + e = 180$	Angles on a line sum to 180° .
$d = b$	If parallel lines are cut by a transversal, then alternate interior angles are equal in measure.
$e = c$	If parallel lines are cut by a transversal, then alternate interior angles are equal in measure.
$a + b + c = 180$	Substitution property of equality

Data, Probability, and Statistical Reasoning

GS.DPSR.1 Summarize, represent, and interpret data on two categorical and quantitative variables.

South Carolina College- and Career-Ready Mathematics Standards	Aligned Components of <i>Eureka Math</i>
<p>GS.DPSR.1.1</p> <p>Represent data for two quantitative variables on a scatter plot and describe how the variables are related.</p>	<p>Algebra I M2 Topic D: Numerical Data on Two Variables</p> <p>Algebra I M5 Lesson 7: Modeling a Context from Data</p>
<p>GS.DPSR.1.2</p> <p>Use two representative points from the data to find an approximate line of fit and compare it to the line of best fit.</p>	<p>Algebra I M2 Lesson 14: Modeling Relationships with a Line</p> <p>Algebra I M2 Lesson 15: Interpreting Residuals from a Line</p> <p>Algebra I M2 Lesson 16: More on Modeling Relationships with a Line</p> <p>Algebra I M5 Lesson 7: Modeling a Context from Data</p>
<p>GS.DPSR.1.3</p> <p>Conduct an investigation for a statistical question, interpret statistical significance in the context of a situation, and answer investigative questions appropriately.</p>	<p>Algebra II M4 Lesson 25: Ruling Out Chance</p> <p>Algebra II M4 Lesson 26: Ruling Out Chance</p> <p>Algebra II M4 Lesson 27: Ruling Out Chance</p> <p>Algebra II M4 Lesson 28: Drawing a Conclusion from an Experiment</p>

Data, Probability, and Statistical Reasoning

GS.DPSR.2 Analyze and interpret models for two quantitative variables.

South Carolina College- and Career-Ready Mathematics Standards

Aligned Components of *Eureka Math*

<p>GS.DPSR.2.1</p> <p>Distinguish between correlation and causation.</p>	<p>Algebra I M2 Lesson 19: Interpreting Correlation</p> <p>Algebra I M2 Lesson 20: Analyzing Data Collected on Two Variables</p>
---------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------

Data, Probability, and Statistical Reasoning

GS.DPSR.3 Solve problems involving the probability of compound events in real-world situations.

South Carolina College- and Career-Ready Mathematics Standards

Aligned Components of *Eureka Math*

<p>GS.DPSR.3.1</p> <p>Describe categories of events as subsets of a sample space using unions, intersections, or complements of other events.</p>	<p>Algebra II M4 Lesson 1: Chance Experiments, Sample Spaces, and Events</p> <p>Algebra II M4 Lesson 3: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables</p> <p>Algebra II M4 Lesson 4: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables</p> <p>Algebra II M4 Lesson 5: Events and Venn Diagrams</p> <p>Algebra II M4 Lesson 6: Probability Rules</p> <p>Algebra II M4 Lesson 7: Probability Rules</p>
<p>GS.DPSR.3.2</p> <p>Apply the <i>Addition Rule</i> to find the probability of both mutually exclusive and not mutually exclusive events and interpret the answers in context.</p>	<p>Algebra II M4 Lesson 7: Probability Rules</p>

**South Carolina
College- and Career-Ready
Mathematics Standards**

Aligned Components of *Eureka Math*

<p>GS.DPSR.3.3</p> <p>Apply the <i>Multiplication Rule</i> to determine the probability of independent events and interpret the answers in context.</p>	<p>Algebra II M4 Lesson 6: Probability Rules</p> <p>Algebra II M4 Lesson 7: Probability Rules</p>
----------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------

Measurement, Geometry, and Spatial Reasoning

GS.MGSR.1 Compute area and volume of figures by determining how the figure might be obtained from simpler figures by dissection and recombination.

**South Carolina
College- and Career-Ready
Mathematics Standards**

Aligned Components of *Eureka Math*

<p>GS.MGSR.1.1</p> <p>Apply area and volume formulas of two- and three-dimensional figures to solve real-world situations.</p>	<p>Geometry M3 Lesson 2: Properties of Area</p> <p>Geometry M3 Lesson 6: General Prisms and Cylinders and Their Cross-Sections</p> <p>Geometry M3 Lesson 8: Definition and Properties of Volume</p> <p>Geometry M3 Lesson 11: The Volume Formula of a Pyramid and Cone</p> <p>Geometry M3 Lesson 12: The Volume Formula of a Sphere</p> <p>Geometry M3 Lesson 13: How Do 3D Printers Work?</p>
<p>GS.MGSR.1.2</p> <p>Identify the shape of a two-dimensional cross-section of a three-dimensional figure.</p>	<p>Geometry M3 Lesson 6: General Prisms and Cylinders and Their Cross-Sections</p> <p>Geometry M3 Lesson 7: General Pyramids and Cones and Their Cross-Sections</p> <p>Geometry M3 Lesson 10: The Volume of Prisms and Cylinders and Cavalieri’s Principle</p> <p>Geometry M3 Lesson 12: The Volume Formula of a Sphere</p> <p>Geometry M3 Lesson 13: How Do 3D Printers Work?</p>

**South Carolina
College- and Career-Ready
Mathematics Standards**

Aligned Components of *Eureka Math*

<p>GS.MGSR.1.3</p> <p>Use cross-sections of three-dimensional figures to model and solve mathematical and real-world situations.</p>	<p>Geometry M3 Lesson 6: General Prisms and Cylinders and Their Cross-Sections</p> <p>Geometry M3 Lesson 7: General Pyramids and Cones and Their Cross-Sections</p> <p>Geometry M3 Lesson 10: The Volume of Prisms and Cylinders and Cavalieri’s Principle</p> <p>Geometry M3 Lesson 12: The Volume Formula of a Sphere</p> <p>Geometry M3 Lesson 13: How Do 3D Printers Work?</p>
---------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Measurement, Geometry, and Spatial Reasoning

GS.MGSR.2 Apply rigid geometric transformations to figures, describing their attributes and symmetries.

**South Carolina
College- and Career-Ready
Mathematics Standards**

Aligned Components of *Eureka Math*

<p>GS.MGSR.2.1</p> <p>Describe the results of transformations on a given figure using geometric terminology from the definitions of the transformations.</p>	<p>Geometry M1 Lesson 13: Rotations</p> <p>Geometry M1 Lesson 14: Reflections</p> <p>Geometry M1 Lesson 16: Translations</p>
<p>GS.MGSR.2.2</p> <p>Describe and apply a sequence of transformations that maps a preimage onto its image.</p>	<p>Geometry M1 Lesson 19: Construct and Apply a Sequence of Rigid Motions</p>

Measurement, Geometry, and Spatial Reasoning

GS.MGSR.3 Determine that two figures are congruent by demonstrating that a rigid motion or a sequence of rigid motions maps one figure onto the other.

South Carolina College- and Career-Ready Mathematics Standards

Aligned Components of *Eureka Math*

<p>GS.MGSR.3.1</p> <p>Identify types of symmetry of polygons, including line, point, rotational, and self-congruence, and use symmetry to analyze mathematical situations.</p>	<p>Geometry M1 Lesson 15: Rotations, Reflections, and Symmetry</p>
<p>GS.MGSR.3.2</p> <p>Demonstrate that triangles and quadrilaterals are congruent by a combination of translations, rotations, and reflections.</p>	<p>Geometry M1 Lesson 20: Applications of Congruence in Terms of Rigid Motions</p> <p>Geometry M1 Lesson 21: Correspondence and Transformations</p>
<p>GS.MGSR.3.3</p> <p>Recognize the criteria for showing triangles are congruent using a sequence of rigid motions that map one triangle to another and justify that the two triangles are congruent by applying the <i>Side-Side-Side</i>, <i>Side-Angle-Side</i>, <i>Angle-Side-Angle</i>, <i>Angle-Angle-Side</i>, and <i>Hypotenuse-Leg</i> congruence conditions.</p>	<p>Geometry M1 Topic D: Congruence</p> <p>Geometry M1 Lesson 34: Review of the Assumptions</p>

Measurement, Geometry, and Spatial Reasoning

GS.MGSR.4 Determine that two figures are similar by demonstrating a similarity transformation or a sequence of similarity transformations that maps one figure onto the other.

South Carolina College- and Career-Ready Mathematics Standards

Aligned Components of *Eureka Math*

<p>GS.MGSR.4.1</p> <p>Demonstrate experimentally the properties of dilations given by a center and a scale factor.</p>	<p>Geometry M2 Topic B: Dilations</p>
<p>GS.MGSR.4.2</p> <p>Justify experimentally that a dilation of a line segment is longer or shorter, given the ratio.</p>	<p>Geometry M2 Lesson 1: Scale Drawings</p> <p>Geometry M2 Lesson 2: Making Scale Drawings Using the Ratio Method</p> <p>Geometry M2 Lesson 3: Making Scale Drawings Using the Parallel Method</p> <p>Geometry M2 Lesson 5: Scale Factors</p> <p>Geometry M2 Lesson 6: Dilations as Transformations of the Plane</p> <p>Geometry M2 Lesson 7: How Do Dilations Map Segments?</p> <p>Geometry M2 Lesson 10: Dividing the King’s Foot into 12 Equal Pieces</p>
<p>GS.MGSR.4.3</p> <p>Recognize that the criteria for showing triangles are similar using a similarity transformation that maps one figure to the other and justify the two triangles are similar by applying the <i>Angle-Angle</i>, <i>Side-Side-Side</i>, and <i>Side-Angle-Side</i> similarity conditions.</p>	<p>Geometry M2 Lesson 12: What Are Similarity Transformations, and Why Do We Need Them?</p> <p>Geometry M2 Lesson 13: Properties of Similarity Transformations</p> <p>Geometry M2 Lesson 14: Similarity</p> <p>Geometry M2 Lesson 15: The Angle-Angle (AA) Criterion for Two Triangles to be Similar</p> <p>Geometry M2 Lesson 17: The Side-Angle-Side (SAS) and Side-Side-Side (SSS) Criteria for Two Triangles to be Similar</p>

Measurement, Geometry, and Spatial Reasoning

GS.MGSR.5 Demonstrate whether a conjecture or theorem is true or false using a variety of algebraic and geometric explanations.

South Carolina College- and Career-Ready Mathematics Standards

Aligned Components of *Eureka Math*

<p>GS.MGSR.5.1</p> <p>Justify and apply the attributes of angle relationships/lines in mathematical and real-world situations.</p>	<p>Geometry M1 Topic B: Unknown Angles</p> <p>Geometry M1 Lesson 18: Looking More Carefully at Parallel Lines</p> <p>Geometry M1 Lesson 33: Review of the Assumptions</p>
<p>GS.MGSR.5.2</p> <p>Apply the attributes of triangles in mathematical and real-world situations.</p>	<p>Geometry M1 Lesson 23: Base Angles of Isosceles Triangles</p> <p>Geometry M1 Lesson 29: Special Lines in Triangles</p> <p>Geometry M1 Lesson 30: Special Lines in Triangles</p> <p>Geometry M1 Topic G: Axiomatic Systems</p>
<p>GS.MGSR.5.3</p> <p>Apply the attributes of quadrilaterals, including diagonals, sides, and angles, to prove that a given quadrilateral is a parallelogram in mathematical and real-world situations.</p>	<p>Geometry M1 Lesson 28: Properties of Parallelograms</p> <p>Geometry M1 Lesson 34: Review of the Assumptions</p>

Measurement, Geometry, and Spatial Reasoning

GS.MGSR.6 Discover and apply relationships in similar right triangles.

South Carolina College- and Career-Ready Mathematics Standards

Aligned Components of *Eureka Math*

<p>GS.MGSR.6.1</p> <p>Discover and apply the converse of the <i>Pythagorean Theorem</i>.</p>	<p>Geometry M2 Lesson 24: Prove the Pythagorean Theorem Using Similarity</p>
<p>GS.MGSR.6.2</p> <p>Discover and apply the constant ratios of the sides in 30-60-90 and 45-45-90 right triangles.</p>	<p>Geometry M2 Lesson 24: Prove the Pythagorean Theorem Using Similarity</p> <p>Geometry M2 Lesson 27: Sine and Cosine of Complementary Angles and Special Angles</p>
<p>GS.MGSR.6.3</p> <p>Define the trigonometric ratios using the properties of similar right triangles.</p>	<p>Geometry M2 Lesson 25: Incredibly Useful Ratios</p> <p>Geometry M2 Lesson 26: The Definition of Sine, Cosine, and Tangent</p>
<p>GS.MGSR.6.4</p> <p>Determine the sine, cosine, and tangent of an acute angle in a right triangle in the context of mathematical and real-world situations.</p>	<p>Geometry M2 Lesson 27: Sine and Cosine of Complementary Angles and Special Angles</p> <p>Geometry M2 Lesson 28: Solving Problems Using Sine and Cosine</p> <p>Geometry M2 Lesson 29: Applying Tangents</p> <p>Geometry M2 Lesson 30: Trigonometry and the Pythagorean Theorem</p> <p>Geometry M2 Lesson 31: Using Trigonometry to Determine Area</p> <p>Geometry M2 Lesson 32: Using Trigonometry to Find Side Lengths of an Acute Triangle</p>

**South Carolina
College- and Career-Ready
Mathematics Standards**

Aligned Components of *Eureka Math*

<p>GS.MGSR.6.5</p> <p>Apply trigonometric ratios (sine, cosine, tangent) and the Pythagorean Theorem to solve right triangle problems in real-life situations.</p>	<p>Geometry M2 Lesson 27: Sine and Cosine of Complementary Angles and Special Angles</p> <p>Geometry M2 Lesson 28: Solving Problems Using Sine and Cosine</p> <p>Geometry M2 Lesson 29: Applying Tangents</p> <p>Geometry M2 Lesson 30: Trigonometry and the Pythagorean Theorem</p> <p>Geometry M2 Lesson 31: Using Trigonometry to Determine Area</p> <p>Geometry M2 Lesson 32: Using Trigonometry to Find Side Lengths of an Acute Triangle</p> <p>Geometry M2 Lesson 33: Applying the Laws of Sines and Cosines</p> <p>Geometry M2 Lesson 34: Unknown Angles</p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Measurement, Geometry, and Spatial Reasoning

GS.MGSR.7 Investigate and apply relationships among segments and angles in circles.

**South Carolina
College- and Career-Ready
Mathematics Standards**

Aligned Components of *Eureka Math*

<p>GS.MGSR.7.1</p> <p>Use angle and segment relationships in circles to solve mathematical and real-world situations.</p>	<p>Geometry M5 Topic A: Central and Inscribed Angles</p> <p>Geometry M5 Lesson 7: The Angle Measure of an Arc</p> <p>Geometry M5 Lesson 8: Arcs and Chords</p>
<p>GS.MGSR.7.2</p> <p>Investigate and apply relationships in circles, inscribed angles, radii, secants, and chords; among inscribed angles, central angles, and circumscribed angles; and between radii and tangents to circles.</p>	<p>Geometry M5 Topic A: Central and Inscribed Angles</p> <p>Geometry M5 Lesson 7: The Angle Measure of an Arc</p> <p>Geometry M5 Lesson 8: Arcs and Chords</p> <p>Geometry M5 Topic C: Secants and Tangents</p>

Numerical Reasoning

GS.NR.1 Represent all points on the number line as irrational and rational numbers in the real number system.

South Carolina College- and Career-Ready Mathematics Standards

Aligned Components of *Eureka Math*

GS.NR.1.1 Rewrite numerical expressions of irrational and rational numbers involving radicals, including addition, subtraction, multiplication, and division, to recognize geometric patterns.	Geometry M2 Lesson 22: Multiplying and Dividing Expressions with Radicals Geometry M2 Lesson 23: Adding and Subtracting Expressions with Radicals Algebra II M3 Lesson 3: Rational Exponents Algebra II M3 Lesson 4: Properties of Exponents and Radicals
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Patterns, Algebra, and Functional Reasoning

GS.PAFR.1 Analyze the structure of an equation or inequality to determine an efficient strategy to find a solution, if one exists, then justify the solution.

South Carolina College- and Career-Ready Mathematics Standards

Aligned Components of *Eureka Math*

GS.PAFR.1.1 Discover and apply the formulas for the length of an arc and the area of a sector in a circle to develop mathematical models and solve mathematical and real-world situations.	Geometry M5 Topic B: Arcs and Sectors
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------

**South Carolina
College- and Career-Ready
Mathematics Standards**

Aligned Components of *Eureka Math*

<p>GS.PAFR.1.2</p> <p>Analyze and apply the derivations of the formulas for the circumference of a circle, area of a circle, and volume of a cylinder, pyramid, and cone to model real phenomena and solve mathematical and real-world situations.</p>	<p>Geometry M3 Lesson 4: Proving the Area of a Disk</p> <p>Geometry M3 Lesson 8: Definition and Properties of Volume</p> <p>Geometry M3 Lesson 10: The Volume of Prisms and Cylinders and Cavalieri’s Principle</p> <p>Geometry M3 Lesson 11: The Volume Formula of a Pyramid and Cone</p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Patterns, Algebra, and Functional Reasoning

GS.PAFR.2 Interpret the structure of expressions, equations, and inequalities to analyze and make predictions in different contexts.

**South Carolina
College- and Career-Ready
Mathematics Standards**

Aligned Components of *Eureka Math*

<p>GS.PAFR.2.1</p> <p>Apply surface area and volume formulas for prisms, cylinders, pyramids, cones, spheres, and/or compositions of figures to solve problems and justify results.</p>	<p>Geometry M3 Lesson 8: Definition and Properties of Volume</p> <p>Geometry M3 Lesson 9: Scaling Principle for Volumes</p> <p>Geometry M3 Lesson 11: The Volume Formula of a Pyramid and Cone</p> <p>Geometry M3 Lesson 12: The Volume Formula of a Sphere</p> <p>Geometry M3 Lesson 13: How Do 3D Printers Work?</p>
<p>GS.PAFR.2.2</p> <p>Analyze slopes of lines to determine whether lines are parallel, perpendicular, or neither.</p>	<p>Geometry M4 Lesson 4: Designing a Search Robot to Find a Beacon</p> <p>Geometry M4 Topic B: Perpendicular and Parallel Lines in the Cartesian Plane</p>

**South Carolina
College- and Career-Ready
Mathematics Standards**

Aligned Components of *Eureka Math*

<p>GS.PAFR.2.3</p> <p>Determine the equation of a line passing through a given point that is parallel or perpendicular to a given line.</p>	<p>Geometry M4 Lesson 4: Designing a Search Robot to Find a Beacon</p> <p>Geometry M4 Topic B: Perpendicular and Parallel Lines in the Cartesian Plane</p>
----------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------

Patterns, Algebra, and Functional Reasoning

GS.PAFR.3 Determine the exact or approximate solutions of equations and inequalities using graphs on the coordinate plane.

**South Carolina
College- and Career-Ready
Mathematics Standards**

Aligned Components of *Eureka Math*

<p>GS.PAFR.3.1</p> <p>Use coordinates to prove simple geometric theorems algebraically.</p>	<p>Geometry M4 Lesson 5: Criterion for Perpendicularity</p> <p>Geometry M4 Lesson 8: Parallel and Perpendicular Lines</p> <p>Geometry M4 Topic D: Partitioning and Extending Segments and Parameterization of Lines</p>
<p>GS.PAFR.3.2</p> <p>Determine distance and midpoint of segments in a coordinate plane to find areas of triangles and quadrilaterals, when given coordinates.</p>	<p>Geometry M4 Topic C: Perimeters and Areas of Polygonal Regions in the Cartesian Plane</p>