Geometry | 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

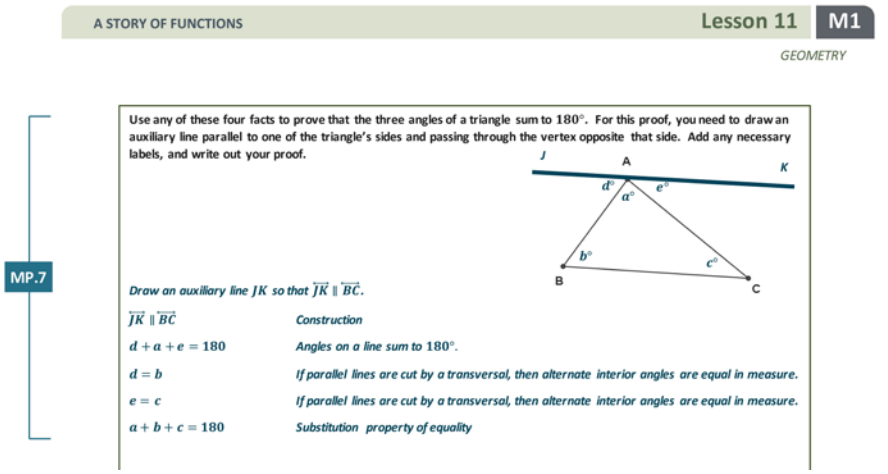
Schools and districts nationwide are experiencing student growth and impressive test scores after using *Eureka Math*. See their stories and data at greatminds.org/data.

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.	

Basics of Geometry

Experiment with transformations in the plane.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.1 Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.	Geometry M1 Lesson 1: Construct an Equilateral Triangle Geometry M1 Lesson 3: Copy and Bisect an Angle Geometry M1 Lesson 4: Construct a Perpendicular Bisector Geometry M1 Lesson 33: Review of the Assumptions

Basics of Geometry

Identify and utilize inductive and deductive reasoning.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.2 Construct and justify the validity of a logical argument.	*Supplemental material is necessary to address this standard.*
M.GHS.2.a Identify the converse, inverse, and contrapositive of a conditional statement.	*Supplemental material is necessary to address this standard.*
M.GHS.2.b Translate a short, verbal argument into symbolic form.	*Supplemental material is necessary to address this standard.*

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.2.c Use Venn diagrams to represent set relationships.	*Supplemental material is necessary to address this standard.*
M.GHS.2.d Use inductive and deductive reasoning.	Geometry M1 Lesson 9: Unknown Angle Proofs—Writing Proofs Geometry M1 Lesson 10: Unknown Angle Proofs—Proofs with Constructions *Supplemental material is necessary to address using inductive reasoning.*

Basics of Geometry

Prove geometric theorems.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.3 Use appropriate methods of proof to prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent.	Geometry M1 Lesson 9: Unknown Angle Proofs—Writing Proofs Geometry M1 Lesson 10: Unknown Angle Proofs—Proofs with Constructions Geometry M1 Lesson 11: Unknown Angle Proofs—Proofs of Known Facts

Basics of Geometry

Use coordinates to prove simple geometric theorems algebraically.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.4 Find the point on a directed line segment between two given points that partitions the segment in a given ratio.	Geometry M4 Lesson 12: Dividing Segments Proportionately

Basics of Geometry

Make geometric constructions.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.5 Make formal geometric constructions with a variety of tools and methods, such as a compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.:	*This standard is fully addressed by the lessons aligned to its subsections.*
M.GHS.5.a copying a segment;	Geometry M1 Lesson 1: Construct an Equilateral Triangle Geometry M1 Lesson 2: Construct an Equilateral Triangle
M.GHS.5.b copying an angle;	Geometry M1 Lesson 3: Copy and Bisect an Angle

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.5.c bisecting a segment;	Geometry M1 Lesson 4: Construct a Perpendicular Bisector
M.GHS.5.d bisecting an angle;	Geometry M1 Lesson 3: Copy and Bisect an Angle
M.GHS.5.e constructing perpendicular lines, including the perpendicular bisector of a line segment; and	Geometry M1 Lesson 4: Construct a Perpendicular Bisector *Supplemental material is necessary to address constructing perpendicular lines.*
M.GHS.5.f constructing a line parallel to a given line through a point not on the line.	Geometry M1 Lesson 18: Looking More Carefully at Parallel Lines

Transformations and Congruence

Experiment with transformations in the plane.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.6 Build on prior knowledge from rigid motions to:	*This standard is fully addressed by the lessons aligned to its subsections.*

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.6.a represent transformations using geometric concepts in the plane.	Geometry M1 Topic C: Transformations/Rigid Motions
M.GHS.6.b describe transformations as functions that take points in the plane as inputs and give other points as outputs.	Geometry M1 Lesson 12: Transformations—The Next Level Geometry M1 Lesson 13: Rotations Geometry M1 Lesson 15: Rotations, Reflections, and Symmetry 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
M.GHS.6.c compare transformations that preserve distance and angle to those that do not.	Geometry M1 Lesson 12: Transformations—The Next Level Geometry M1 Lesson 13: Rotations Geometry M1 Lesson 14: Reflections Geometry M1 Lesson 17: Characterize Points on a Perpendicular Bisector
M.GHS.7 Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.	Geometry M1 Lesson 15: Rotations, Reflections, and Symmetry Geometry M1 Lesson 19: Construct and Apply a Sequence of Rigid Motions Geometry M1 Lesson 21: Correspondence and Transformations
M.GHS.8 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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.9 Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, for example, graph paper, tracing paper, or geometry software. Describe a sequence of transformations that will carry a given figure onto another.	Geometry M1 Lesson 13: Rotations Geometry M1 Lesson 14: Reflections Geometry M1 Lesson 16: Translations Geometry M1 Lesson 18: Looking More Carefully at Parallel Lines 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

Transformations and Congruence

Understand congruence in terms of rigid motions.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.10 Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.	Geometry M1 Lesson 15: Rotations, Reflections, and Symmetry Geometry M1 Lesson 19: Construct and Apply a Sequence of Rigid Motions Geometry M1 Lesson 21: Correspondence and Transformations

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.11 Use the definition of congruence in terms 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
M.GHS.12 Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.	Geometry M1 Lesson 22: Congruence Criteria for Triangles—SAS Geometry M1 Lesson 24: Congruence Criteria for Triangles—ASA and SSS Geometry M1 Lesson 25: Congruence Criteria for Triangles—AAS and HL
M.GHS.13 Use congruence criteria for triangles to solve problems and to prove relationships in geometric figures.	Geometry M1 Lesson 26: Triangle Congruency Proofs Geometry M1 Lesson 27: Triangle Congruency Proofs Geometry M1 Lesson 28: Properties of Parallelograms Geometry M1 Lesson 34: Review of the Assumptions

Transformations and Congruence

Prove geometric theorems.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.14 Use appropriate methods of proof to prove theorems about triangles and lines. Theorems include: measures of interior angles of a triangle sum to $180°$; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.	Geometry M1 Lesson 8: Solve for Unknown Angles—Angles in a Triangle Geometry M1 Lesson 9: Unknown Angle Proofs—Writing Proofs Geometry M1 Lesson 11: Unknown Angle Proofs—Proofs of Known Facts Geometry M1 Lesson 17: Characterize Points on a Perpendicular Bisector Geometry M1 Lesson 23: Base Angles of Isosceles Triangles Geometry M1 Lesson 29: Special Lines in Triangles Geometry M1 Lesson 30: Special Lines in Triangles
M.GHS.15 Use appropriate methods of proof to prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.	Geometry M1 Lesson 28: Properties of Parallelograms Geometry M1 Lesson 34: Review of the Assumptions

Transformations and Congruence

Use coordinates to prove simple geometric theorems algebraically.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.16 Use coordinates to prove simple geometric theorems about right triangles, quadrilaterals, and circles algebraically (e.g., derive the equation of a circle of given center and radius using the Pythagorean Theorem).	Geometry M2 Lesson 24: Prove the Pythagorean Theorem Using Similarity Geometry M4 Lesson 13: Analytic Proofs of Theorems Previously Proved by Synthetic Means Geometry M5 Lesson 17: Writing the Equation for a Circle

Similarity and Trigonometry

Understand similarity in terms of similarity transformations.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.17 Verify experimentally the properties of dilations given by a center and a scale factor.	*This standard is fully addressed by the lessons aligned to its subsections.*
M.GHS.17.a 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.	Geometry M2 Lesson 3: Making Scale Drawings Using the Parallel Method Geometry M2 Lesson 5: Scale Factors Geometry M2 Lesson 6: Dilations as Transformations of the Plane Geometry M2 Lesson 7: How Do Dilations Map Segments? Geometry M2 Lesson 8: How Do Dilations Map Lines, Rays, and Circles?

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.17.a ***continued***	Geometry M2 Lesson 9: How Do Dilations Map Angles? Geometry M2 Lesson 11: Dilations from Different Centers
M.GHS.17.b The dilation of a line segment is longer or shorter in the ratio given by the scale factor.	Geometry M2 Lesson 2: Making Scale Drawings Using the Ratio Method Geometry M2 Lesson 3: Making Scale Drawings Using the Parallel Method Geometry M2 Lesson 5: Scale Factors Geometry M2 Lesson 6: Dilations as Transformations of the Plane Geometry M2 Lesson 7: How Do Dilations Map Segments? Geometry M2 Lesson 10: Dividing the King's Foot into 12 Equal Pieces Geometry M2 Lesson 11: Dilations from Different Centers
M.GHS.18 Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.	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
M.GHS.19 Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.	Geometry M2 Lesson 15: The Angle-Angle (AA) Criterion for Two Triangles to Be Similar

Similarity and Trigonometry

Prove theorems involving similarity.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.20 Use appropriate methods of proof to prove theorems about triangles involving similarity. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.	Geometry M1 Lesson 23: Base Angles of Isosceles Triangles Geometry M1 Lesson 29: Special Lines in Triangles Geometry M1 Lesson 30: Special Lines in Triangles Geometry M2 Lesson 4: Comparing the Ratio Method with the Parallel Method Geometry M2 Lesson 5: Scale Factors 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 Lesson 21: Special Relationships Within Right Triangles—Dividing into Two Similar Sub-Triangles Geometry M2 Lesson 24: Prove the Pythagorean Theorem Using Similarity
M.GHS.21 Use similarity criteria for triangles to solve problems and to prove relationships in geometric figures. Use the Pythagorean Theorem and similarity criteria to derive and apply special right triangles to solve problems.	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

Similarity and Trigonometry

Define trigonometric ratios and solve problems involving right triangles.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.22 Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.	Geometry M2 Lesson 25: Incredibly Useful Ratios Geometry M2 Lesson 26: The Definition of Sine, Cosine, and Tangent
M.GHS.23 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
M.GHS.24 Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.	Geometry M2 Lesson 28: Solving Problems Using Sine and Cosine Geometry M2 Lesson 29: Applying Tangents Geometry M2 Lesson 30: Trigonometry and the Pythagorean Theorem Geometry M2 Lesson 31: Using Trigonometry to Determine Area Geometry M2 Lesson 32: Using Trigonometry to Find Side Lengths of an Acute Triangle

Similarity and Trigonometry

Apply trigonometry to general triangles.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.25 Derive the formula $A = \frac{1}{2}ab\sin(C)$ for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.	Geometry M2 Lesson 31: Using Trigonometry to Determine Area
M.GHS.26 Prove the Laws of Sines and Cosines extending the definitions of sine and cosine to obtuse angles.	Geometry M2 Lesson 32: Using Trigonometry to Find Side Lengths of an Acute Triangle
M.GHS.27 Understand and apply the Law of Sines and the Law of Cosines to solve problems and to find unknown measurements in right and non-right triangles.	Geometry M2 Lesson 33: Applying the Laws of Sines and Cosines

Circles

Understand and apply theorems about circles.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.28 Prove that all circles are similar.	Geometry M5 Lesson 7: The Angle Measure of an Arc
M.GHS.29 Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.	Geometry M5 Topic A: Central and Inscribed Angles Geometry M5 Lesson 7: The Angle Measure of an Arc Geometry M5 Lesson 8: Arcs and Chords Geometry M5 Topic C: Secants and Tangents

Circles

Find arc lengths and areas of sectors of circles.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.30 Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.	Geometry M5 Lesson 9: Arc Length and Areas of Sectors Geometry M5 Lesson 10: Unknown Length and Area Problems

Circles

Make geometric constructions.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.31 Construct the inscribed and circumscribed circles of a triangle 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 Lesson 20: Cyclic Quadrilaterals Geometry M5 Lesson 21: Ptolemy's Theorem
M.GHS.32 Construct a tangent line from a point outside a given circle to the circle.	*Supplemental material is necessary to address this standard.*
M.GHS.33 Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.	Geometry M1 Lesson 1: Construct an Equilateral Triangle Geometry M1 Lesson 2: Construct an Equilateral Triangle Geometry M1 Topic F: Advanced Constructions

Extending to Three Dimensions and Modeling

Explain volume formulas and use them to solve problems.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.34 Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri's principle, and informal limit arguments.	Geometry M3 Topic A: Area Geometry M3 Lesson 8: Definition and Properties of Volume Geometry M3 Lesson 10: The Volume of Prisms and Cylinders and Cavalieri's Principle Geometry M3 Lesson 11: The Volume Formula of a Pyramid and Cone Geometry M3 Lesson 12: The Volume Formula of a Sphere
M.GHS.35 Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems, including how area and volume scale under similarity transformations.	Geometry M3 Lesson 8: Definition and Properties of Volume Geometry M3 Lesson 9: Scaling Principle for Volumes 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?

Extending to Three Dimensions and Modeling

Visualize the relation between two-dimensional and three-dimensional objects and apply geometric concepts in modeling situations.

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.36 Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.	Geometry M3 Lesson 6: General Prisms and Cylinders and Their Cross-Sections Geometry M3 Lesson 7: General Pyramids and Cones and Their Cross-Sections Geometry M3 Lesson 10: The Volume of Prisms and Cylinders and Cavalieri's Principle Geometry M3 Lesson 12: The Volume Formula of a Sphere Geometry M3 Lesson 13: How Do 3D Printers Work?
M.GHS.37 Use two- and three-dimensional shapes and circles, their measures, and their properties to describe 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
M.GHS.37.a Apply concepts of density based on area and volume in modeling situations.	Geometry M3 Lesson 8: Definition and Properties of Volume Geometry M3 Lesson 11: The Volume Formula of a Pyramid and Cone
M.GHS.37.b Apply geometric methods to solve design problems to satisfy given constraints.	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?

Statistics and Probability

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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.38 Describe events as subsets of a sample space using characteristics of the outcomes or as unions, intersections, or complements of other events.	Algebra II M4 Lesson 1: Chance Experiments, Sample Spaces, and Events Algebra II M4 Lesson 3: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables Algebra II M4 Lesson 4: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables Algebra II M4 Lesson 5: Events and Venn Diagrams Algebra II M4 Lesson 6: Probability Rules Algebra II M4 Lesson 7: Probability Rules
M.GHS.39 Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities. Use this characterization to determine if they are independent.	Algebra II M4 Lesson 6: Probability Rules
M.GHS.40 Recognize the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.	Algebra II M4 Lesson 4: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables Algebra II M4 Lesson 6: Probability Rules

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.41 Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities.	Algebra II M4 Lesson 2: Calculating Probabilities of Events Using Two-Way Tables Algebra II M4 Lesson 3: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables Algebra II M4 Lesson 4: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables
M.GHS.42 Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations.	Algebra II M4 Lesson 2: Calculating Probabilities of Events Using Two-Way Tables Algebra II M4 Lesson 3: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables Algebra II M4 Lesson 4: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables Algebra II M4 Lesson 6: Probability Rules

Statistics and Probability

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

West Virginia College- and Career-Readiness Standards for Mathematics	Aligned Components of *Eureka Math*
M.GHS.43 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 terms of the model.	Algebra II M4 Lesson 3: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables Algebra II M4 Lesson 4: Calculating Conditional Probabilities and Evaluating Independence Using Two-Way Tables
M.GHS.44 Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$ and interpret the answer in terms of the model.	Algebra II M4 Lesson 7: Probability Rules
M.GHS.45 Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B\|A) = P(B)P(A\|B)$ and interpret the answer in terms of the model.	Precalculus and Advanced Topics M5 Lesson 1: The General Multiplication Rule Precalculus and Advanced Topics M5 Lesson 13: Games of Chance and Expected Value Precalculus and Advanced Topics M5 Lesson 14: Games of Chance and Expected Value Precalculus and Advanced Topics M5 Lesson 15: Using Expected Values to Compare Strategies
M.GHS.46 Use permutations and combinations to compute probabilities of compound events and solve problems.	Precalculus and Advanced Topics M5 Lesson 2: Counting Rules—The Fundamental Counting Principle and Permutations Precalculus and Advanced Topics M5 Lesson 3: Counting Rules—Combinations Precalculus and Advanced Topics M5 Lesson 4: Using Permutations and Combinations to Compute Probabilities

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.GHS.47 Use probabilities to make fair decisions.	Precalculus and Advanced Topics M5 Lesson 16: Making Fair Decisions Precalculus and Advanced Topics M5 Lesson 17: Fair Games
M.GHS.48 Analyze decisions and strategies using probability concepts.	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