MCAP EOC Tutorials for Maryland are designed specifically for the Maryland College and Career Ready Standards to prepare students for the Maryland Comprehensive Assessment Program (MCAP). EOC Categories are at the heart of MCAP EOC Tutorial structure – bringing category-based learning to the student experience, and category-based performance and progress tracking to the teacher experience.

Math Tutorials offer targeted instruction, practice and review designed to develop computational fluency, deepen conceptual understanding, and apply mathematical practices. They automatically identify and address learning gaps down to elementary-level content, using adaptive remediation to bring students to grade-level no matter where they start. Students engage with the content in an interactive, feedback-rich environment as they progress through standards-aligned modules. By constantly honing the ability to apply their knowledge in abstract and real world scenarios, students build the depth of knowledge and higher order skills required to demonstrate their mastery when put to the test.

In each module, the Learn It and Try It make complex ideas accessible to students through focused content, modeled logic and process, multi-modal representations, and personalized feedback as students reason through increasingly challenging problems. The Review It offers a high impact summary of key concepts and relates those concepts to students' lives. The Test It assesses students' mastery of the module's concepts, providing granular performance data to students and teachers after each attempt. To help students focus on the content most relevant to them, unit-level pretests and posttests can quickly identify where students are strong and where they're still learning.

Test-Taking Strategies for EOC Tutorials allow students to practice and apply learning approaches that will hone their test-taking skills and focus them for success on the day of their EOC test.

Unit 1: Points, Lines, and Figures

- **POINTS, RAYS, LINE SEGMENTS, LINES, AND FIGURES**
  - G.CO.A.1: Experiment with transformations in the plane. 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.
  - G.R.6: Reasoning Evidence Statements Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions.
- **PARALLEL AND PERPENDICULAR LINES**
  - G.GPE.B.5: Use coordinates to prove simple geometric theorems algebraically. Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems.

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- G.R.3: Reasoning Evidence Statements Determine cases where a given proposition is true or false.
- G.R.4: Reasoning Evidence Statements Identify an unstated assumption that makes a problem well-posed or makes a particular method viable.
- G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.
- G.CO.C.9: Prove geometric theorems. Prove and/or apply 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; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.
- G.CO.A.1: Experiment with transformations in the plane. 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.

Unit 2: Lines and Angles

- **PARALLEL LINES AND ANGLE RELATIONSHIPS**
  - G.M.6: Modeling Evidence Statements Solve multi-step contextual word problems with degree of difficulty appropriate to the course, requiring application of course-level knowledge and skills articulated in the standards.
  - G.CO.C.9: Prove geometric theorems. Prove and/or apply 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; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.
  - G.R.3: Reasoning Evidence Statements Determine cases where a given proposition is true or false.
  - G.R.4: Reasoning Evidence Statements Identify an unstated assumption that makes a problem well-posed or makes a particular method viable.
  - G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.
- **PERPENDICULAR BISECTOR AND ANGLE BISECTOR THEOREMS**
  - G.R.3: Reasoning Evidence Statements Determine cases where a given proposition is true or false.
  - G.R.4: Reasoning Evidence Statements Identify an unstated assumption that makes a problem well-posed or makes a particular method viable.
  - G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.
  - G.CO.C.10: Prove geometric theorems. Prove and/or apply theorems about triangles. 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.

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- G.CO.D.12: Make geometric constructions. Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.
- G.CO.C.10: Prove geometric theorems. Prove and/or apply theorems about triangles. 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.

Unit 3: Triangles

- **TRIANGLE ANGLE THEOREMS**
  - G.M.6: Modeling Evidence Statements Solve multi-step contextual word problems with degree of difficulty appropriate to the course, requiring application of course-level knowledge and skills articulated in the standards.
  - G.CO.C.10: Prove geometric theorems. Prove and/or apply theorems about triangles. 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.
  - G.CO.C.10: Prove geometric theorems. Prove and/or apply theorems about triangles. 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.
  - G.R.3: Reasoning Evidence Statements Determine cases where a given proposition is true or false.
  - G.R.4: Reasoning Evidence Statements Identify an unstated assumption that makes a problem well-posed or makes a particular method viable.
  - G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.
  - G.CO.C.10: Prove geometric theorems. Prove and/or apply theorems about triangles. 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.
  - G.CO.C.10: Prove geometric theorems. Prove and/or apply theorems about triangles. 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.
  - G.CO.C.10: Prove geometric theorems. Prove and/or apply theorems about triangles. 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.

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- G.R.8: Reasoning Evidence Statements Use a combination of algebraic and geometric reasoning to justify or refute propositions or conjectures about geometric figures.
- G.CO.C.10: Prove geometric theorems. Prove and/or apply theorems about triangles. 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.

- **TRIANGLE BISECTORS**
  - G.CO.D.12: Make geometric constructions. Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.
  - G.M.6: Modeling Evidence Statements Solve multi-step contextual word problems with degree of difficulty appropriate to the course, requiring application of course-level knowledge and skills articulated in the standards.
  - G.CO.C.10: Prove geometric theorems. Prove and/or apply theorems about triangles. 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.
  - G.R.2: Reasoning Evidence Statements Identify a correct method and justification given two or more chains of reasoning.
  - G.R.3: Reasoning Evidence Statements Determine cases where a given proposition is true or false.
  - G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.
  - G.CO.C.10: Prove geometric theorems. Prove and/or apply theorems about triangles. 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.
  - G.CO.C.10: Prove geometric theorems. Prove and/or apply theorems about triangles. 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.
  - G.CO.C.10: Prove geometric theorems. Prove and/or apply theorems about triangles. 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.
  - G.CO.C.10: Prove geometric theorems. Prove and/or apply theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180; base angles of isosceles triangles are

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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.

- G.CO.C.10: Prove geometric theorems. Prove and/or apply theorems about triangles. 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.

Unit 4: Parallelograms and Rectangles

- **PARALLELOGRAMS AND RECTANGLES**
  - G.R.2: Reasoning Evidence Statements Identify a correct method and justification given two or more chains of reasoning.
  - G.R.3: Reasoning Evidence Statements Determine cases where a given proposition is true or false.
  - G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.
  - G.CO.C.11: Prove geometric theorems. 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.
  - G.M.6: Modeling Evidence Statements Solve multi-step contextual word problems with degree of difficulty appropriate to the course, requiring application of course-level knowledge and skills articulated in the standards.

Unit 5: Squares and Rhombi

- **SQUARES AND RHOMBI**
  - G.R.2: Reasoning Evidence Statements Identify a correct method and justification given two or more chains of reasoning.
  - G.R.3: Reasoning Evidence Statements Determine cases where a given proposition is true or false.
  - G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.
  - G.CO.C.11: Prove geometric theorems. 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.
  - G.M.6: Modeling Evidence Statements Solve multi-step contextual word problems with degree of difficulty appropriate to the course, requiring application of course-level knowledge and skills articulated in the standards.

Unit 6: Geometric Transformations

- **TRANSFORMATIONS ON THE COORDINATE PLANE**
  - G.R.2: Reasoning Evidence Statements Identify a correct method and justification given two or more chains of reasoning.

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- G.R.3: Reasoning Evidence Statements Determine cases where a given proposition is true or false.
- G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.
- G.R.6: Reasoning Evidence Statements Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions.
- G.SRT.A.2: Understand similarity in terms of similarity transformations. 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.
- G.CO.A.5: Experiment with transformations in the plane. Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.
- G.CO.B.6: Understand congruence in terms of rigid motions. 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.
- G.SRT.A.1a: Understand similarity in terms of similarity transformations. 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.

- **DILATIONS, TRANSLATIONS, ROTATIONS, AND REFLECTIONS**
  - G.R.6: Reasoning Evidence Statements Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions.
  - G.CO.A.5: Experiment with transformations in the plane. Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.
  - G.CO.B.6: Understand congruence in terms of rigid motions. 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.
  - G.SRT.A.2: Understand similarity in terms of similarity transformations. 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.
  - G.R.3: Reasoning Evidence Statements Determine cases where a given proposition is true or false.
  - G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.

Unit 7: Introduction to Congruence

- **TRIANGLES AND CONGRUENCE TRANSFORMATIONS**

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- G.R.6: Reasoning Evidence Statements Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions.
- G.CO.B.6: Understand congruence in terms of rigid motions. 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.
- G.CO.B.7: Understand congruence in terms of rigid motions. 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.

- **CONGRUENCE OF OTHER POLYGONS**
  - G.M.6: Modeling Evidence Statements Solve multi-step contextual word problems with degree of difficulty appropriate to the course, requiring application of course-level knowledge and skills articulated in the standards.
  - G.R.6: Reasoning Evidence Statements Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions.
  - G.CO.B.6: Understand congruence in terms of rigid motions. 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.
  - G.R.3: Reasoning Evidence Statements Determine cases where a given proposition is true or false.
  - G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.
  - G.CO.A.3: Experiment with transformations in the plane. Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.

Unit 8: Introduction to Similarity

- **TRIANGLES AND SIMILARITY TRANSFORMATIONS**
  - G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.
  - G.R.6: Reasoning Evidence Statements Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions.
  - G.SRT.A.2: Understand similarity in terms of similarity transformations. 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.
  - G.SRT.B.5: Prove theorems involving similarity. Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.
  - G.SRT.B.4: Prove theorems involving similarity. Prove theorems about triangles. 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.

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- **SIMILARITY OF OTHER POLYGONS**
  - G.M.6: Modeling Evidence Statements Solve multi-step contextual word problems with degree of difficulty appropriate to the course, requiring application of course-level knowledge and skills articulated in the standards.
  - G.R.6: Reasoning Evidence Statements Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions.
  - G.SRT.A.2: Understand similarity in terms of similarity transformations. 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.

Unit 9: Triangles and Trigonometry

- **PYTHAGOREAN THEOREM**
  - G.M.6-2: Modeling Evidence Statements Solve multi-step contextual word problems with degree of difficulty appropriate to the course, requiring application of course-level knowledge and skills articulated in involving right triangles in an applied setting.
  - G.SRT.C.8: Define trigonometric ratios and solve problems involving right triangles. Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.
  - G.SRT.B.4: Prove theorems involving similarity. Prove theorems about triangles. 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.
  - G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.
  - G.R.3: Reasoning Evidence Statements Determine cases where a given proposition is true or false.
- **TRIGONOMETRIC RATIOS**
  - G.SRT.C.8: Define trigonometric ratios and solve problems involving right triangles. Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.
  - G.SRT.C.7: Define trigonometric ratios and solve problems involving right triangles. Explain and use the relationship between the sine and cosine of complementary angles.
  - G.R.8: Reasoning Evidence Statements Use a combination of algebraic and geometric reasoning to justify or refute propositions or conjectures about geometric figures.
  - G.M.6-2: Modeling Evidence Statements Solve multi-step contextual word problems with degree of difficulty appropriate to the course, requiring application of course-level knowledge and skills articulated in involving right triangles in an applied setting.

Unit 10: Circle Basics and Angles 1

- **CIRCLE BASICS**
  - G.C.A.2: Understand and apply theorems about circles. Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and

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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.

- **SECANTS, ANGLES, AND INTERCEPTED ARCS**
  - G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.

Unit 11: Circle Basics and Angles 2

- **CENTRAL ANGLES, INSCRIBED ANGLES, AND CHORDS**
  - G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.
  - G.C.A.2: Understand and apply theorems about circles. 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.
- **TANGENTS, ANGLES, AND INTERCEPTED ARCS**
  - G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.
  - G.C.A.2: Understand and apply theorems about circles. 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.

Unit 12: Area and Standard Equation of Circles

- **AREA OF CIRCLES AND SECTORS**
  - G.M.6-1: Modeling Evidence Statements Solve multi-step contextual word problems with degree of difficulty appropriate to the course, involving perimeter, area, or volume that require the use 8th grade algebra skills.
  - G.C.B.5: Find arc lengths and areas of sectors of circles. 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.
  - G.R.3: Reasoning Evidence Statements Determine cases where a given proposition is true or false.
  - G.R.4: Reasoning Evidence Statements Identify an unstated assumption that makes a problem well-posed or makes a particular method viable.
  - G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.
  - G.R.8: Reasoning Evidence Statements Use a combination of algebraic and geometric reasoning to justify or refute propositions or conjectures about geometric figures.
- **CIRCLES**

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- G.GPE.A.1: Translate between the geometric description and the equation for a conic section. Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.
- G.CO.A.1: Experiment with transformations in the plane. 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.

Unit 13: Measurement, Congruency, and Similarity of Circles

- **CIRCUMFERENCE AND ARC LENGTH**
  - G.R.6: Reasoning Evidence Statements Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions.
  - G.C.B.5: Find arc lengths and areas of sectors of circles. 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.
- **CONGRUENT AND SIMILAR CIRCLES**
  - G.CO.B.6: Understand congruence in terms of rigid motions. 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.

Unit 14: Lines in the Coordinate Plane

- **SLOPE**
  - G.R.6: Reasoning Evidence Statements Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions.
  - G.GPE.B.5: Use coordinates to prove simple geometric theorems algebraically. Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems.
- **SLOPE-INTERCEPT FORM OF A LINEAR EQUATION**
  - G.R.6: Reasoning Evidence Statements Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions.
  - G.GPE.B.5: Use coordinates to prove simple geometric theorems algebraically. Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems.

Unit 15: Coordinate Geometry

- **LENGTH AND THE DISTANCE FORMULA**
  - G.R.6: Reasoning Evidence Statements Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions.
  - G.GPE.B.6: Use coordinates to prove simple geometric theorems algebraically. Find the point on a directed line segment between two given points that partitions the segment in a given ratio.
  - G.GPE.B.7: Use coordinates to prove simple geometric theorems algebraically. Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance

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formula.

- **MIDPOINT FORMULA ON THE COORDINATE PLANE**
  - G.R.6: Reasoning Evidence Statements Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions.
  - G.GPE.B.6: Use coordinates to prove simple geometric theorems algebraically. Find the point on a directed line segment between two given points that partitions the segment in a given ratio.
- **CONJECTURES IN COORDINATE GEOMETRY**
  - G.R.6: Reasoning Evidence Statements Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions.
  - G.GPE.B.4: Use coordinates to prove simple geometric theorems algebraically. Use coordinates to prove simple geometric theorems algebraically.

Unit 16: Perimeter and Area

- **PERIMETER ON THE COORDINATE PLANE**
  - G.R.6: Reasoning Evidence Statements Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions.
  - G.GPE.B.7: Use coordinates to prove simple geometric theorems algebraically. Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.
  - G.M.6-1: Modeling Evidence Statements Solve multi-step contextual word problems with degree of difficulty appropriate to the course, involving perimeter, area, or volume that require the use 8th grade algebra skills.
  - G.GPE.B.4: Use coordinates to prove simple geometric theorems algebraically. Use coordinates to prove simple geometric theorems algebraically.
- **AREA ON THE COORDINATE PLANE**
  - G.R.6: Reasoning Evidence Statements Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions.
  - G.M.6-1: Modeling Evidence Statements Solve multi-step contextual word problems with degree of difficulty appropriate to the course, involving perimeter, area, or volume that require the use 8th grade algebra skills.

Unit 17: Constructions and Three-Dimensional Figures

- **CONSTRUCTIONS**
  - G.CO.D.12: Make geometric constructions. Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.

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- **RELATING TWO-DIMENSIONAL FIGURES TO THREE-DIMENSIONAL SOLIDS**
  - G.GMD.B.4-1: Visualize relationships between two-dimensional and three-dimensional objects. Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.

Unit 18: Prisms, Pyramids, and Spheres

- **VOLUME OF PRISMS AND PYRAMIDS**
  - G.GMD.A.3: Explain volume formulas and use them to solve problems. Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.
  - G.M.6-1: Modeling Evidence Statements Solve multi-step contextual word problems with degree of difficulty appropriate to the course, involving perimeter, area, or volume that require the use 8th grade algebra skills.
- **SURFACE AREA AND VOLUME OF SPHERES**
  - G.GMD.B.4-1: Visualize relationships between two-dimensional and three-dimensional objects. Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.
  - G.GMD.A.1: Explain volume formulas and use them to solve problems. 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.
  - G.GMD.A.3: Explain volume formulas and use them to solve problems. Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.

Unit 19: Cylinders and Cones

- **VOLUME OF CYLINDERS AND CONES**
  - G.GMD.A.3: Explain volume formulas and use them to solve problems. Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.
  - G.M.6-1: Modeling Evidence Statements Solve multi-step contextual word problems with degree of difficulty appropriate to the course, involving perimeter, area, or volume that require the use 8th grade algebra skills.
  - G.R.2: Reasoning Evidence Statements Identify a correct method and justification given two or more chains of reasoning.

Unit 20: Modeling Situations

- **MODELING SITUATIONS WITH GEOMETRY**
  - G.MG.A.2: Apply geometric concepts to modeling situations. Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).
  - G.M.5: Modeling Evidence Statements Use and/or provide a reasonable estimate of a quantity needed to solve a problem.

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- G.MG.A.3: Apply geometric concepts to modeling situations. Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).

Unit 21: Volume of Similar and Composite Shapes

- **VOLUME OF SIMILAR SOLIDS**
  - G.GMD.A.3: Explain volume formulas and use them to solve problems. Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.
  - G.M.6-1: Modeling Evidence Statements Solve multi-step contextual word problems with degree of difficulty appropriate to the course, involving perimeter, area, or volume that require the use 8th grade algebra skills.
  - G.R.2: Reasoning Evidence Statements Identify a correct method and justification given two or more chains of reasoning.
- **VOLUME OF COMPOSITE SOLIDS**
  - G.M.6-1: Modeling Evidence Statements Solve multi-step contextual word problems with degree of difficulty appropriate to the course, involving perimeter, area, or volume that require the use 8th grade algebra skills.
  - G.GMD.A.3: Explain volume formulas and use them to solve problems. Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.
  - G.R.2: Reasoning Evidence Statements Identify a correct method and justification given two or more chains of reasoning.
  - G.R.3: Reasoning Evidence Statements Determine cases where a given proposition is true or false.
  - G.R.5: Reasoning Evidence Statements Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.

Unit 22: Test-Taking Strategies

- **STUDY HABITS**
- **BEING PREPARED AND GETTING STARTED**
- **WORDING IN TEST QUESTIONS**
- **WORDING IN ANSWER CHOICES**
- **QUESTIONS WITH PASSAGES AND VISUAL DATA**
- **ESSAY AND SHORT ANSWER QUESTIONS**
- **WORD PROBLEMS**

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