

This High-Level Blueprint describes the structure and content of the Maryland Comprehensive Assessment Program (MCAP) Geometry Mathematics Assessment by sub-claim.

Content Subclaim

The MCAP Geometry assessment contains 23 operational items designed to elicit evidence to support the Content Subclaim. Content Subclaim items are worth 1-point, are machine scored, and align to the Geometry evidence statements. Refer to the MCAP Geometry Evidence Statement document for more information on the content evidence statements.

Conceptual Category: Geometry

Number of items: 7

Code	Domain & Cluster
G.CO	Congruence <ul style="list-style-type: none"> A. Experiment with transformations in the plane. B. Understand congruence in terms of rigid motions. C. Prove geometric theorems. D. Make geometric constructions.

Conceptual Category: Geometry

Number of items: 8

Code	Domain & Cluster
G.SRT	Similarity, Right Triangles, and Trigonometry <ul style="list-style-type: none"> A. Understand similarity in terms of similarity transformations. B. Prove theorems involving similarity. C. Define trigonometric ratios and solve problems involving right triangles.

Conceptual Category: Geometry

Number of items: 3

Code	Domain & Cluster
G.C	Circles <ul style="list-style-type: none"> A. Understand and apply theorems about circles. B. Find arc lengths and areas of sectors and circles.

Conceptual Category: Geometry

Number of items: 3

Code	Domain & Cluster
G.P.E	Expressing Geometric Properties with Equations A. Translate between the geometric description and the equation for a conic section. B. Use coordinates to prove simple geometric theorems algebraically.

Conceptual Category: Geometry

Number of items: 1

Code	Domain & Cluster
G.GMD	Geometric Measurement and Dimension A. Explain volume formulas and use them to solve problems. B. Visualize relationships between two-dimensional and three-dimensional objects.

Conceptual Category: Geometry

Number of items: 1

Code	Domain & Cluster
G.MG	Modeling with Geometry A. Apply geometric concepts in modeling situations.

Total number of Operational Items: 23

Total Number of Points : 23

Reasoning Subclaim

The MCAP Geometry assessment includes 6 operational items that elicit evidence to support the Reasoning Subclaim. Each assessment includes machine-scored and human-scored (constructed response) reasoning items. Reasoning items may address any of the Geometry evidence statements. Refer to the MCAP Geometry Evidence Statement document for more information on the reasoning evidence statements.

Evidence Statements

- G.R.1 Identify an option that would refute a conjecture/claim.
- G.R.2 Identify a correct method and justification given two or more chains of reasoning.
- G.R.3 Given a proposition determine cases where the proposition is true or false.
- G.R.4 Identify an unstated assumption that would make a problem well-posed or make a particular method viable.

- G.R.5 Construct, autonomously, chains of reasoning that will justify or refute geometric propositions or conjectures.
- G.R.6 Apply geometric reasoning in a coordinate setting, and/or use coordinates to draw geometric conclusions.
- G.R.7 Present solutions to multi-step problems in the form of valid chains of reasoning, or identify or describe errors in solutions to multi-step problems and present corrected solutions.
- G.R.8 Use a combination of algebraic and geometric reasoning to construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures about geometric figures.

Number of Machine Scored Items – Four (4) 1-point items

Number of Constructed Response Items – Two (2) 4-point items

Total Number of Points: 12

Modeling Subclaim

The MCAP Geometry assessment includes 6 operational items that elicit evidence to support the Modeling Subclaim. Each assessment includes machine-scored and human-scored (constructed response) modeling items. Modeling items may address any of the Geometry evidence statements. Refer to the MCAP Geometry Evidence Statement document for more information on the modeling evidence statements.

Evidence Statements

- G.M.1 Choose between competing mathematical models to solve real-world problems.
- G.M.2 Construct a mathematical model to solve a problem.
- G.M.3 Validate a given model and make improvement.
- G.M.4 Interpret the solution to a real-world problem in terms of context.
- G.M.5 Provide a reasoned estimate of a quantity needed to solve a problem.
- G.M.6 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.M.6-1 Solve multi-step contextual word problems with degree of difficulty appropriate to the course, involving perimeter, area, or volume that require solving a quadratic equation.
- G.M.6-2 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.M.7 Identify information or assumptions needed to solve a problem.

Number of Machine Scored Items – Four (4) 1-point items

Number of Constructed Response Items – Two (2) 4-point items

Total Number of Points: 12