MCAP Geometry
High Level Blueprint

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

Content Sub-Claim

MCAP Geometry assessment contains 24, 1-point, machine scored, operational items designed to elicit evidence to support the Content Sub-Claim. All items are aligned to the Geometry Maryland College and Career Ready Standards.

Conceptual Category: Geometry

Code	Domain Cluster	Number of Items Tested
G.CO	Congruence A. Experiment with transformations in the plane. B. Understand congruence in terms of rigid motions. C. Prove geometric theorems. D. Make geometric constructions	7
G.SRT	Similarity, Right Triangles, and Trigonometry A. Understand similarity in terms of similarity transformations. B. Prove theorems involving similarity. C. Define trigonometric ratios and solve problems involving right triangles.	8
G.C	Circles A. Understand and apply theorems about circles. B. Find arc lengths and areas of sectors and circles.	3
G.GPE	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.	3
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.	1
G.MG	Modeling with Geometry A. Apply geometric concepts in modeling situations.	1

Total Number of Operational Items from the Content Sub-claim: 23 items

Reasoning Sub-Claim

The MCAP Geometry assessments include 6 items designed to elicit evidence to support the Reasoning Sub-Claim. Each assessment includes 4, 1-point, machine scored items and 2, 4-point, constructed response, human scored items modeling items. Reasoning items may address and of the Geometry standards.

Reasoning Evidence Statements		Number of 1-point Reasoning items	Number of 4-point Reasoning items
G.R.1	Identify an option that would refute a conjecture/claim..	4	2
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.		

Total Number of Operational Items from the Reasoning Sub-claim: 6 items worth a total of 12 points

Modeling Sub- Claim

The MCAP Geometry assessments include 6 items designed to elicit evidence to support the Modeling Sub-Claim. Each assessment includes 4, 1-point, machine scored items and 2, 4-point, constructed response, human scored items modeling items. Modeling items may address any of the Geometry standards.

Modeling Evidence Statements		Number of 1-point Modeling items	Number of 4-point Modeling items
G.M.1	Choose between competing mathematical models to solve real-world problems.	4	2
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.		

Total Number of Operational Items from the Modeling Sub-claim: 6 items worth a total of 12 points