MCAP Grade 8 Mathematics

High Level Blueprint

This High-Level Blueprint describes the structure and content of the Maryland Comprehensive Assessment Program (MCAP) Grade 8 Mathematics Assessment by subclaim.

CONTENT SUBCLAIM

The MCAP Grade 8 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 Grade 8 evidence statements. Refer to the MCAP Grade 8 Evidence Statement document for more information on the content evidence statements.

Domain	Cluster		Number of Items
The Number System	8.NS.A	Know that there are numbers that are not rational, and approximate them by rational numbers.	2
Expressions and Equations	8.EE.A	Work with radicals and integer exponents.	10
	8.EE.B	Understand the connections between proportional relationships, lines, and linear equations.	
	8.EE.C	Analyze and solve line equations and pairs of simultaneous linear equations.	
Functions	8.F.A	Define, evaluate, and compare fractions.	5
	8.F.B	Use functions to model relationships between quantities.	
Geometry	8.G.A	Understand congruence and similarity using physical models, transparencies, or geometry software.	4
	8.G.B	Understand and apply the Pythagorean Theorem.	
	8.G.C	Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.	
Statistics and Probability	8.SP.A	Investigate patterns of association in bivariate data.	2
Total Number of Operational Items			**23**
Total Number of Points			**23**

REASONING SUBCLAIM

The MCAP Grade 8 assessments include 6 operational items that elicit evidence to support the Reasoning Subclaim. Each assessment includes machine-scored and human-scored (constructed response) reasoning items. The content focus for all reasoning items is based on the content clusters. Refer to the MCAP Grade 8 Evidence Statements document for more information on the reasoning evidence statements.

Evidence Statements		Number of Machine-Scored Items (1 point)	Number of Constructed Response Items (3 or 4 points)
8.R.1	Reasoning with Expressions and Equations	4	1 3-point item and 1 4-point item
8.R.2	Reasoning with Functions		
8.R.3	Reasoning with Geometry		
	Total Number of Points	**4**	**7**

MODELING SUBCLAIM

The MCAP Grade 8 assessments include 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 Grade 8 evidence statements. Refer to the MCAP Grade 8 Evidence Statement document for more information on the modeling evidence statements.

Evidence Statements		Number of Machine-Scored Items (1 point)	Number of Constructed Response Items (3 or 4 points)
8.M.1	Choose and produce appropriate mathematics to model quantities and mathematical relationships in order to analyze situations, make predictions, solve multi-step problems, and draw conclusions.	4	1 3-point item and 1 4-point item
8. M.1a	Given a real-world situation, identify the problem that needs to be solved, make necessary assumptions, and identify important information.		
8.M.1b	Given real-world situation, formulate a mathematical representation of the problem.		
8.M.1c	Given a real-world situation, use mathematical models to compute and draw conclusions.		
8.M.1d	Given a real-world situation, interpret what a solution means within the context of the situation.		
8.M.1e	Given a real-world situation, evaluate and/or validate a partial or complete solution.		
	Total Number of Points	**4**	**7**