

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

Content Sub-Claim

The MCAP Algebra I 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 Algebra I Maryland College and Career Ready Standards.

Conceptual Category	Code	Domain Cluster	Number of Items Tested
Number and Quantity	N.RN N.Q	The Real Number System B. Use properties of rational and irrational numbers. Quantity A. Reason quantitatively and use units to solve problems.	1
Algebra	A.SSE A.APR A.CED A.REI	Seeing Structure in Expressions A. Interpret the structure of expressions. B. Write expressions in equivalent form to solve problems. Arithmetic with Polynomials and Rational Expressions A. Perform arithmetic operations on polynomials. B. Understand the relationship between zeros and factors of polynomials. Creating Equations A. Create equations that describe numbers or relationships. Reasoning with Equations and Inequalities A. Understand solving equations as a process of reasoning and explain the reasoning. B. Solve equations and inequalities in one variable. C. Solve systems of equations. D. Represents and solve equations and inequalities graphically.	12
Functions	F.IF F.BF F.LE	Interpreting Functions A. Understand the concept of a function and use function notation. B. Interpret functions that arise in applications in terms of the context. C. Analyze functions using different representations. Building Functions A. Build a function that models a relationship between two quantities. B. Build new functions from existing functions. Linear, Quadratic, and Exponential Models A. Construct and compare linear, quadratic, and exponential models and solve problems. B. Interpret expressions for functions in terms of the situation they model.	9
Statistics	S.ID	Interpreting Categorical and Quantitative Data B. Summarize, represent, and interpret data on two categorical quantitative variables. C. Interpret linear models.	2

Total Number of Operational Items from the Content Sub-claim: 24 items

Reasoning Sub-Claim

The MCAP Algebra I 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 Algebra I standards.

Reasoning Evidence Statements	Number of 1-point Reasoning items	Number of 4-point Reasoning items
A1.R.1 Given an equation reason about the number or nature of the solutions.		
A1.R.2 Given a system of equations reason about the number or nature of the solutions.		
A1.R.3 Reasoning based on the principle that the graph of an equation and inequalities in two variables is the set of all its solutions plotted in the coordinate plane.		
A1.R.4 Identify an option that would refute a conjecture/claim.		
A1.R.5 Identify a correct method and justification given two or more chains of reasoning.		
A1.R.6 Given a proposition determine cases where the proposition is true or false.	4	2
A1.R.7 Identify an unstated assumption that would make a problem well-posed or make a particular method viable.		
A1.R.8 Given an equation or system of equations, present the solution steps as a logical argument that concludes with the set of solutions (if any).		
A1.R.9 Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures about functions.		
A1.R.10 Express reasoning about transformations of functions.		
A1.R.11 Express reasoning about linear and exponential growth.		

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

Modeling Sub- Claim

The MCAP Algebra I 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 Algebra I standards.

Modeling Evidence Statements	Number of 1-point Modeling items	Number of 4-point Modeling items
A1.M.1 Choose between competing mathematical models to solve real-world problems.		
A1.M.2 Construct a mathematical model to solve a problem.		
A1.M.3 Validate a given model and make improvement.		
A1.M.4 Interpret the solution to a real-world problem in terms of context.		
A1.M.5 Compare the result from a model with real world data.	4	2
A1.M.6 Solve multi-step contextual word problems with degree of difficulty appropriate to the course, requiring application of course-level knowledge.		
A1.M.7 Identify information or assumptions needed to solve a problem.		
A1.M.8 Provide a reasoned estimate of a quantity needed to solve a problem.		

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