

Mathematics Assessment Blueprint – Grade 6

This blueprint describes the structure and content of the Grade 6 Maryland System of Testing Academic Readiness (MSTAR) Math Assessment. The assessment is administered as a [Multi-Stage Adaptive Test](#) and includes operational items organized into the following reporting categories: Content, Modeling, and Reasoning.

For detailed Maryland content standards and the [Numeracy Development Framework](#) that defines the essential knowledge, skills, and understandings expected across grade levels, please visit the [MSDE Content Standards and Frameworks](#) page.

For a variety of resources that support state assessments, such as calendars, accessibility information, and guides by audience, please visit the [Maryland State Assessment page](#).

CONTENT REPORTING CATEGORY – 52% OF MSTAR TEST FORM

Domain	Standard Clusters Available for Assessment	Percentage of Test
Number and Operation Sense (NOS)	6.NOS.A Apply and extend previous understandings of multiplication and division to divide fractions by fractions. 6.NOS.B Compute fluently with multi-digit numbers and find common factors and multiples. 6.NOS.C Apply and extend previous understanding of numbers to the system of rational numbers.	8% – 15%
Algebraic Thinking (AT)	6.AT.A Understanding ratio concepts and use ratio reasoning to solve. 6.AT.B Apply and extend previous understandings of arithmetic to algebraic expressions. 6.AT.C Reason about and solve one-variable equations and inequalities. 6.AT.D Represent and analyze quantitative relationships between dependent and independent variables.	24% – 29%
Geometric Reasoning and Measurement (GR)	6.GR.A Solve problems in context involving area, surface area, and volume.	3% – 9%
Reasoning and Data Statistics (DS)	6.DS.A Represent and Interpret Data. 6.DS.B Summarize and describe distributions.	6% – 12%

REASONING REPORTING CATEGORY – 24% OF MSTAR TEST FORM

Reporting Category	Standards Available for Assessment	Percentage of Test
Reasoning (R)	6.R.1 Use visual, symbolic, or contextual representations to explain mathematical ideas. 6.R.2 Identify and critique errors in reasoning, misapplied procedures, or invalid assumptions, and provide a mathematically valid alternative. 6.R.3 Construct coherent chains of reasoning that connect mathematical properties, ideas, and evidence, such as examples or counterexamples, to support or refute mathematical statements or claims. 6.R.4 Identify and extend patterns or regularities to form general rules and justify their validity using mathematical reasoning.	24%

MODELING REPORTING CATEGORY – 24% OF MSTAR TEST FORM

Reporting Category	Standards Available for Assessment	Percentage of Test
Modeling (M)	6.M.1 Formulate a question about a particular context that can be answered using mathematics. 6.M.2 Determine the information needed and what assumptions must be made to answer a mathematical question about a context. 6.M.3 Represent a context mathematically by selecting and applying appropriate concepts, tools, and representations to define variables, model relationships, and/or identify constraints. 6.M.4 Use a mathematical model to perform computations, make predictions, or answer the question posed about a context. 6.M.5 Interpret the results or conclusions of a mathematical model in terms of the original context. 6.M.6 Critique the validity of a mathematical model and its conclusions. Revise assumptions, representations, or mathematical approaches based on the context, new understanding, or additional information.	24%

OVERALL TEST

Total Number of Items: **29-30**

Breakdown by Reporting Category

Test Form Information	Details
Content (NOS, AT, GR, and DS)	18 points
Reasoning	8 points
Modeling	8 points
Total Points	34 points overall
Total Testing Time	120 Minutes (2 hours)

Operational Form Development Notes:

- The item types may vary by form and content area based on the content being assessed.
- The Reasoning and Modeling reporting categories each contain one 3-point, and one 4-point constructed response (CR) item.
- The rest of the items on the form are 1-point machine scored items. Approximately 50-65% are Multiple Choice (MC) or Multiple Select (MS) items, and approximately 20-35% are Technology Enhanced Item (TEI) types.