

Blueprint Table Mathematics Grades 6–8 Estimated Total Testing Time: 3:30 (with Classroom Activity) ¹						
Claim/Score Reporting Category	Content Category ²	Stimuli		Items		Total Items by Claim ³
		CAT	PT	CAT ⁴	PT	
1. Concepts and Procedures	Priority Cluster	0	0	14–15	0	14–15
	Supporting Cluster	0	0	5	0	5
2. Problem Solving 4. Modeling and Data Analysis ⁵	Problem Solving	0	1	5	4	9
	Modeling and Data Analysis	0				
3. Communicating Reasoning	Communicating Reasoning	0			6	

¹ All times are estimates. Actual times may vary.

² For more information on content categories, see the Content Specifications document at <http://www.smarterbalanced.org/smarter-balanced-assessments/>.

³ Total number of items is not necessarily equal to weighting by claim.

⁴ In grades 6-8, 1 item per student (from either Claim 3 Target B or Claim 4 Target B) is designed for hand-scoring, which may be AI scored with an application that yields comparable results by meeting or exceeding reliability and validity criteria for hand-scoring.

⁵ Claim 2 (Problem Solving) and Claim 4 (Modeling and Data Analysis) have been combined because of content similarity and to provide flexibility for item development. There are still four claims, but only three claim scores will be reported with the overall math score.

Target Sampling Mathematics Grade 6							
Claim	Content Category	Assessment Targets	DOK	Items		Total Items	
				CAT	PT		
1. Concepts and Procedures	Priority Cluster	E. Apply and extend previous understandings of arithmetic to algebraic expressions.	1	6	0	14	
		F. Reason about and solve one-variable equations and inequalities.	1, 2				
		A. Understand ratio concepts and use ratio reasoning to solve problems.	1, 2				
		G. Represent and analyze quantitative relationships between dependent and independent variables.	2				
		B. Apply and extend previous understandings of multiplication and division to divide fractions by fractions.	1, 2				
		D. Apply and extend previous understandings of numbers to the system of rational numbers.	1, 2				
	Supporting Cluster	C. Compute fluently with multi-digit numbers and find common factors and multiples.	1, 2	5	0		
		H. Solve real-world and mathematical problems involving area, surface area, and volume.	1, 2				
		I. Develop understanding of statistical variability.	2				
		J. Summarize and describe distributions.	1, 2				
2. Problem Solving 4. Modeling and Data Analysis	Problem Solving (drawn across content domains)	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2, 3	1	1-2	3-4	
		B. Select and use appropriate tools strategically.	1, 2, 3				
		C. Interpret results in the context of a situation.					
		D. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).					
	Modeling and Data Analysis (drawn across content domains)	A. Apply mathematics to solve problems arising in everyday life, society, and the workplace.	2, 3	1	2-3		5-6
		D. Interpret results in the context of a situation.					
		B. Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.	2, 3, 4				
		E. Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.					
		C. State logical assumptions being used.	1, 2				
		F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).					
G. Identify, analyze, and synthesize relevant external resources to pose or solve problems.	3, 4	0					

– DOK: Depth of Knowledge, consistent with the Smarter Balanced Content Specifications.

-- The CAT algorithm will be configured to ensure the following:

For Claim 1, each student will receive at least 7 CAT items at DOK 2 or higher.

For combined Claims 2 and 4, each student will receive at least 2 CAT items at DOK 3 or higher.

For Claim 3, each student will receive at least 2 CAT items at DOK 3 or higher.

Target Sampling Mathematics Grade 6						
Claim	Content Category	Assessment Targets	DOK	Items		Total Items
				CAT	PT	
3. Communicating Reasoning	Communicating Reasoning (drawn across content domains)	A. Test propositions or conjectures with specific examples. D. Use the technique of breaking an argument into cases.	2, 3	2–3	2	8
		B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. E. Distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in the argument—explain what it is.	2, 3, 4	1–2		
		C. State logical assumptions being used. F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions. G. At later grades, determine conditions under which an argument does and does not apply. (For example, area increases with perimeter for squares, but not for all plane figures.)	2, 3	2–3		

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Target Sampling Mathematics Grade 7						
Claim	Content Category	Assessment Targets	DOK	Items		Total Items
				CAT	PT	
1. Concepts and Procedures	Priority Cluster	A. Analyze proportional relationships and use them to solve real-world and mathematical problems.	2	9	0	15
		D. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.	1, 2			
		B. Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.	1, 2	6		
		C. Use properties of operations to generate equivalent expressions.	1, 2			
	Supporting Cluster	E. Draw, construct, and describe geometrical figures and describe the relationship between them.	1, 2	3	0	
		F. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	1, 2			
		G. Use random sampling to draw inferences about a population.	1, 2	2		
		H. Draw informal comparative inferences about two populations.	2			
		I. Investigate chance processes and develop, use, and evaluate probability models.	1, 2			
2. Problem Solving 4. Modeling and Data Analysis	Problem Solving (drawn across content domains)	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2, 3	1	1–2	3–4
		B. Select and use appropriate tools strategically.	1, 2, 3	1		
		C. Interpret results in the context of a situation.				
	D. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).					
	Modeling and Data Analysis (drawn across content domains)	A. Apply mathematics to solve problems arising in everyday life, society, and the workplace.	2, 3	1	2–3	5–6
		D. Interpret results in the context of a situation.	2, 3, 4	1		
		B. Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.				
		E. Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.	1, 2	1		
		C. State logical assumptions being used.				
	F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).					
G. Identify, analyze, and synthesize relevant external resources to pose or solve problems.	3, 4	0				

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Target Sampling Mathematics Grade 7						
Claim	Content Category	Assessment Targets	DOK	Items		Total Items
				CAT	PT	
3. Communicating Reasoning	Communicating Reasoning (drawn across content domains)	A. Test propositions or conjectures with specific examples. D. Use the technique of breaking an argument into cases.	2, 3	2–3	2	8
		B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. E. Distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in the argument—explain what it is.	2, 3, 4	1–2		
		C. State logical assumptions being used. F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions. G. At later grades, determine conditions under which an argument does and does not apply. (For example, area increases with perimeter for squares, but not for all plane figures.)	2, 3, 4	2–3		

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Target Sampling Mathematics Grade 8						
Claim	Content Category	Assessment Targets	DOK	Items		Total Items
				CAT	PT	
1. Concepts and Procedures	Priority Cluster	C. Understand the connections between proportional relationships, lines, and linear equations.	1, 2	6	0	15
		D. Analyze and solve linear equations and pairs of simultaneous linear equations.	1, 2			
		B. Work with radicals and integer exponents.	1, 2			
		E. Define, evaluate, and compare functions.	1, 2			
		G. Understand congruence and similarity using physical models, transparencies, or geometry software.	1, 2			
		F. Use functions to model relationships between quantities.	1, 2			
		H. Understand and apply the Pythagorean Theorem.	1, 2			
	Supporting Cluster	A. Know that there are numbers that are not rational, and approximate them by rational numbers.	1, 2	5	0	
		I. Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.	1, 2			
		J. Investigate patterns of association in bivariate data.	1, 2			
2. Problem Solving 4. Modeling and Data Analysis	Problem Solving (drawn across content domains)	A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2, 3	1	1-2	3-4
		B. Select and use appropriate tools strategically.				
		C. Interpret results in the context of a situation.				
		D. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	1, 2, 3	1		

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Target Sampling Mathematics Grade 8						
Claim	Content Category	Assessment Targets	DOK	Items		Total Items
				CAT	PT	
2. Problem Solving 4. Modeling and Data Analysis	Modeling and Data Analysis (drawn across content domains)	A. Apply mathematics to solve problems arising in everyday life, society, and the workplace. D. Interpret results in the context of a situation.	2, 3	1	2-3	5-6
		B. Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem. E. Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.	2, 3, 4	1		
		C. State logical assumptions being used. F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	1, 2	1		
		G. Identify, analyze, and synthesize relevant external resources to pose or solve problems.	3, 4	0		
3. Communicating Reasoning	Communicating Reasoning (drawn across content domains)	A. Test propositions or conjectures with specific examples. D. Use the technique of breaking an argument into cases.	2, 3	2-3	2	8
		B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. E. Distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in the argument—explain what it is.	2, 3, 4	1-2		
		C. State logical assumptions being used. F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions. G. At later grades, determine conditions under which an argument does and does not apply. (For example, area increases with perimeter for squares, but not for all plane figures.)	2, 3, 4	2-3		

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