

# Smarter Balanced Assessment Consortium: Preliminary Test Blueprints

November 28, 2012





#### **Executive Summary**

The purpose of this document is to:

- Explain to member states, districts, and other stakeholders what a test blueprint is in general and what's different about the Smarter Balanced blueprints;
- Describe the Smarter Balanced summative blueprints; and
- Provide information on how the blueprints will be used and their importance to the summative assessment and to the Smarter Balanced Assessment System.

Test blueprints communicate the content of the test and how that content will be assessed to a wide variety of audiences. Therefore, this User's Guide is intended to serve as a supporting document to help the full array of potential users understand the purposes and uses of test blueprints, as well as provide more specific information as to how to accurately read and interpret the Smarter Balanced blueprints and assessment target sampling tables.

To that end, this Smarter Balanced Assessment Consortium Blueprint User's Guide describes the following:

- What is a blueprint?
- What is different about the Smarter Balanced blueprints?
- How were the Smarter Balanced summative blueprints developed?
- How are the Smarter Balanced blueprints structured?
- How will the blueprints be used?
- What are the next steps for the summative blueprints?

Data gathered through Pilot and Field testing, and ongoing simulation studies will inform updates to the blueprints, including setting the weights each content area contributes to the overall composite test score for ELA/literacy and mathematics. Consistent with the draft blueprint development process, updates to these blueprints will involve input from member states, vendor partners, Smarter TAC, and other stakeholders.

The establishment of the Smarter Balanced summative assessment test blueprints represents an important milestone in the Consortium's assessment development activities. Reaching this milestone is the result of concerted efforts and broad input from Consortium member states, executive staff, partners, vendors, and stakeholders, consistent with the Consortium's culture and governance structure.



#### What Is a Blueprint?

All valid and valued assessments are content driven. Successful completion of the assessment development process requires deep understanding of the knowledge, skills, and abilities that are measured on an assessment, and how these are derived from the content standards upon which the assessment is based. Not only is understanding of the specific content important, developers and users must also know the relative weighting among the various content strands to be included on the assessment, the item types used to measure each strand, and other key factors such as depth of knowledge spread within and across strands/standards/indicators.

Specifically, a test blueprint is a formal document that guides the development and assembly of an assessment by explicating the following essential information:

- **Content** (standards, indicators, claims) that is to be included for each assessed content area and grade, across various levels of the system (student, classroom, school, district, state);
- Emphasis and Balance of content, generally indicated as number of items or percentage of points per standard and indicator;
- Item Types, sending a clear message to item developers how to measure each standard and indicator, and to teachers and students about learning expectations; and
- Depth of Knowledge (DOK), indicating the complexity of item types for each standard or indicator.<sup>1</sup>

The test blueprint is essential for both assessment developers and for those responsible for curriculum and instruction. For assessment developers, the blueprint (and related test specifications documents) declares how the test will ensure coverage of the full breadth and depth of content and how it will maintain fidelity to the intent of the content standards on which the assessment is based. Full alignment is necessary if educational stakeholders are to make valid, reliable, and unbiased inferences at the student, classroom, school, and state levels.

For those responsible at the instructional level, the test blueprint provides a guide to the relative importance of competing content demands and suggests how the content is intended to be demonstrated, as indicated by item type and depth of knowledge. For example, standards and assessment targets that are shown to be assessed with items at lower levels of DOK require different instructional methods than content assessed at higher levels of DOK.

In summary, an assessment blueprint provides clear development specifications to test developers and signals to the broader education community both the full complexity of the Common Core State Standards (CCSS) and how performance on these standards will be operationalized.

The Governing States of the Smarter Balanced Assessment Consortium have adopted preliminary blueprints for the summative assessments of mathematics and English language arts/literacy for grades 3–8 and high school. These blueprints are referred to as "preliminary" because they establish assessment design features that may be subject to refinement and revision after the analysis of Pilot and Field testing. Final blueprints for the Smarter Balanced summative assessments will be adopted by Governing States prior to full implementation in the 2014-15 school year.

<sup>&</sup>lt;sup>1</sup>While often included in the assessment blueprint, Smarter Balanced includes this information in its Target Sampling Table companion document.

Note: This User's Guide is a supporting document to the Draft Blueprints approved by Governing States November 20, 2012.



#### What Is Different about the Smarter Balanced Blueprints?

The goals, assessment model, and governance structure of the Smarter Balanced consortium have had profound effects on the blueprints that have been developed and approved to build its assessment and support its other key components. As indicated above, blueprints must fully reflect the standards on which its assessments are based. The Smarter Balanced summative assessments will provide measures of student progress on and attainment of the CCSS in grades 3–8 and high school. The CCSS have several unique features that have affected the contents of the Smarter Balanced blueprints. The "Balanced" in Smarter Balanced refers both to our model of an interconnected system of summative, interim, and formative components, as well as a balance between technologically advanced computer adaptive testing (CAT) and extended, thematically related performance tasks. This latter feature of the balance between CAT and performance tasks is captured in our blueprints. Finally, building an assessment for a 25-state consortium creates an additional set of challenges not found in state-specific assessments.

- **Common Core State Standards**: As states implement the CCSS, there is increasing realization that they are qualitatively different from most of the state standards that have preceded them. Specifically, what they require from an assessment and instructional standpoint are:
  - Greater emphasis on depth of student understanding, resulting in significant increase on overall depth of knowledge;
  - Use of a different array of item types (i.e., selected response, constructed response, performance tasks, and computer enhanced), with a greater emphasis on student demonstration and transfer of knowledge and skills;
  - Use of common stimuli with different entry points (scaffolding) for students at different achievement levels; and
  - Non-traditional content (e.g., listening, research, contextualizing ELA in content areas like science and social studies, attention to mathematical processes).
- Balanced Assessment System: A key feature of the Smarter Balanced assessment model is a commitment to developing a comprehensive system of assessments and assessment tools that can contribute to improved teaching and learning. This system includes the availability of efficient summative assessments whose primary responsibility is to be used for accountability purposes, and interim assessments and formative tools to support instruction. The summative and interim components will be placed on the same reporting scale, allowing student progress on the interim assessment to be used to track likely performance on the summative. Our system has the following implications for the summative blueprints:
  - Summative assessments—ensure full breadth and depth and fidelity to CCSS to allow reliable and valid reporting of our content claims;
  - Interim assessments—aligned sufficiently to summative to allow scaling and tracking requirements; may also include a wider range of content based on learning progressions to allow more precise tracking of student learning; and
  - Formative tools and practices—though not "assessments" per se, Smarter Balanced will develop exemplary tools and professional development materials to improve the quality of day-to-day assessment that takes place in the classroom. To be effective, the alignment between the summative assessments and the supports in the formative component must be clear and explicit. The summative blueprints support this alignment.



- Assessment Structure, especially CAT and performance tasks: The Smarter Balanced assessment system has two features not typically found in most current state assessments that have important effects on our blueprints. The inclusion of performance tasks (PTs) and a reliance on CAT technology have the following specific implications:
  - Performance tasks: Performance tasks are scenario-based sets of materials and items/tasks that cohere around a single theme, or real-world problem. The items/tasks comprising each PT require greater amounts of time to administer than more traditional selected- and constructed-response items. The points allocated for these significant events must be commensurate with the time students will spend on them. The content of PTs focus on those aspects of the CCSS that rely on research, problem solving, and application and transfer of knowledge, including higher DOK levels (3 and 4).
  - Computer adaptive testing: As each student takes a computer adaptive test the test delivery system adjusts the difficulty of the items to be tailored to how the student is performing on the assessment. This means that students do not receive the same items, unlike a "fixed-form" test where all students see the same items. Thus, blueprints for assessments with a CAT component must provide acceptable lower and upper bounds for the number of items to be presented for each assessment target. Our CAT blueprints ensure sufficient breadth and depth at the student level to obtain a reliable score across our claims and full breadth and depth across students at the classroom level. Therefore, the full breadth of content must be taught; however, the burden of testing the entire breadth of content will not be placed on each student.
- **Multi-State Consortium:** Most states develop their assessment blueprints with varying degrees of involvement across the state, with individuals or groups participating as part of content committees, performing psychometric analyses, and/or serving as reviewers. For a multi-state consortium such as Smarter Balanced, the process is the same, but the level of scrutiny is exponentially greater. Smarter Balanced governance rules require Governing States to approve important policy documents such as the test blueprint. Equally important, the Smarter Balanced culture includes an expectation of extensive member state involvement, not just in the review and approval of the blueprint, but also in its development. Finally, because of the strong public interest in the success of the various state assessment consortia, the Smarter Balanced executive staff has involved several outside groups in the blueprint development and review process, most importantly our Technical Advisory Committee and the developers of the CCSS. Table 1 indicates the extensive Smarter Balanced blueprint review and approval process. Following, we describe the specific role played by Smarter Balanced staff, member states, and various outside partners.

	Smarter Balanced Blueprint Review and Approval Process								
07/25-26	Presentation of two-version approach to Technical Advisory Committee (TAC): TAC recommends common blueprint across both versions								
08/29-30	USED site visit: USED indicates reporting more than total composite score will be required for the "Standard" version								
09/10-14	Presentation of two-version design to state leads and Chiefs, with expanded reporting								
09/18	Assessment Management Group discussion of two-version design								
10/02	Assessment Management Group review and recommendation of revised test design and blueprints with a single design reporting all claims								

Table 1. Smarter Balanced Blueprint Review and Approval Process



10/09	All States discussion of test design and blueprints
10/22	Notice to Governing States of discussion and voting period
10/23	Discussion during Governing States meeting
10/24	Technical Advisory Committee discusses and provides input
10/29	Chiefs discuss and provide input
10/29-11/05	Voting period: First ballot (approval requires 100% consensus)
11/06-11/11	Review of questions/concerns if consensus not reached on first ballot
11/12-11/19	Voting period: Second ballot (approval requires 2/3 majority)
11/20	Consensus approval by Governing States on second ballot: Blueprint adopted

#### How Were the Smarter Balanced Summative Blueprints Developed?

- Role of CCSS: As indicated above, the Smarter Balanced assessments must reflect the content and performance expectations of the CCSS. Our blueprints must result in assessments with sufficient length to measure the breadth of the CCSS and with the appropriate range of item types, including performance tasks, to measure its depth. All staff and partners working on the blueprint development, either internal or external, needed to have extensive knowledge of the structure and content implicit in the CCSS. To ensure full fidelity, Smarter Balanced executive staff enlisted the aid of the lead authors of these standards.
- Role of Executive Staff and Work Groups: Smarter Balanced leadership developed and managed the extensive blueprint development and review process. Work groups contributed not only to content but also to the final format, working with executive staff to ensure the structure of the blueprint would not only guide the assessment development process but could also be understood by teachers, administrators, curriculum developers, and policymakers in their states. The Smarter Balanced lead psychometrician was primarily responsible for ensuring that the blueprints would lead to assessments that produce reliable and valid results, coordinating with the executive director and content directors on such matters of content emphasis and match of content to item types. The content directors worked in partnership with the authors of the CCSS on issues related to content. For example, the identification of the "priority" and "supporting" clusters in the target sampling tables for mathematics reflected this close collaboration.
- Role of Governing States: Smarter Balanced Chiefs, state leads, and other SEA staff have been directly involved throughout the blueprint development process. In February and September Chiefs were convened to engage in discussions of overall blueprint designs. Additionally, SEA staff serve as members of work groups and provide leadership to Smarter Balanced by serving as Consortium co-chairs and members of the Executive Committee. As shown in Table 1, the executive director led an all-state introductory walkthrough and discussion of the then draft blueprint on October 9, 2012, with a follow-up discussion on October 23. A similar briefing was provided to Smarter Balanced Chiefs via webinar on October 29. The approval voting period ran from October 29 to November 19, when it was unanimously ratified by the Smarter Balanced Governing States.
- Role of External Content Experts and Contractors: Smarter Balanced content directors guided the content aspects of blueprint development, assisted by content experts from member states participating in work group and other reviews. The content directors also coordinated with the developers of the CCSS to ensure adherence to its expectations. The psychometric service contractor, Educational Testing Service (ETS), was tasked with "pressure testing" early draft blueprints by running simulation studies designed to estimate what levels of reliability could be



provided by a test(s) using various blueprints for both the overall score (i.e., English language arts and mathematics) and the scores at the content claim level (e.g., reading, writing, math concepts and procedures). WestEd in its role of Project Management Partner (PMP) worked closely with executive staff to update the blueprints to reflect the final blueprint tables and related materials and coordinated the review and approval process.

• Role of Reviewers (USED, TAC, SAP): As funders of the Consortium, the U.S. Department of Education was given several briefings related to the blueprint and provided important feedback throughout the blueprint development process. Our TAC gave its input via an in-person meeting in July and webinar in October. Finally, Student Assessment Partners (SAP), comprising the lead authors of the CCSS, was involved extensively throughout the blueprint development process.

#### How Are the Smarter Balanced Blueprints Structured?

The content, emphasis, and item type information are represented in the blueprints in two levels of detail: (1) blueprint tables that provide an overview of the summative assessment in terms of how claims and item types are represented, and (2) target sampling tables that show greater detail about assessment targets within each claim, depth of knowledge, and item type representation.

• Blueprint Tables: The ELA/literacy blueprints show the number of stimuli (e.g., reading passages, listening segments) and items/tasks associated with each content category, and whether the content category is assessed using CAT items, performance tasks, or both. For example, the grades 3–5 ELA/literacy blueprint indicates that the reading claim comprises literary and informational content categories, both will be measured using stimuli that will be presented in the CAT administration, neither content category will be measured via performance task, and each will be measured using from six to eight CAT-administered items, for a total of between 12 and 16 items for reading. (It should be noted that only some of these items will be scored as dichotomous ["0-1"] items; many will be scored as polytomous [rubric-scored] items, meaning many more points on the reading portion than between 12 and 16.)

Determining the relative contribution each ELA/literacy claim has to the overall ELA/literacy score (its weightings) requires further content, policy, and psychometric consideration. ELA/literacy claim weights have not been determined and will be established by Governing States at a later time. The mathematics blueprints are organized similarly to the ELA/literacy blueprints. For example, the grades 3–5 mathematics blueprint indicates that the Concepts and Procedures claim is broken down into Priority Clusters (Domain 1) and Supporting Clusters (Domain 2),<sup>2</sup> that neither content category will use stimuli, and that both will be measured via 15–20 and five to eight CAT items respectively. The grades 3–5 mathematics blueprint also indicates that Problem Solving (claim 2), Modeling and Data Analysis (claim 4), and Communicating Reasoning (claim 3) will be measured through a combination of CAT items and performance tasks, and that they will use common stimuli in the performance tasks. Consistent with ELA/literacy, the relative contribution each mathematics claim has to the overall mathematics score (its weightings) will require content, policy, and psychometric consideration, and will be established by Governing States at a later time.

• **Target Sampling Tables:** Target sampling tables provide greater detail regarding the specific content within each claim. The "targets" in these tables refer to the assessment targets defined

<sup>&</sup>lt;sup>2</sup>The designation of Priority versus Supporting Cluster is based on the relative importance to mastering the content within the Concepts and Procedures claim.

Note: This User's Guide is a supporting document to the Draft Blueprints approved by Governing States November 20, 2012.



in two documents: Content Specifications for ELA/Literacy (found <u>here</u>) and Content Specifications for Mathematics (found <u>here</u>).

The target sampling tables for ELA/literacy provide separate information for the CAT and performance task components, whereas the mathematics target sampling tables show both components in one table.

For example, the grades 3–5 ELA/literacy target sampling table (table 4a) for the CAT component indicates the seven assessment targets within the Literary content category, shows the Depth of Knowledge (DOK) associated with each assessment target, the probability a specific assessment target will appear on a test for a student (Min CAT items), that the Literary content category under the Reading claim will be measured using a minimum of three Selected Response (SR) items and one Constructed Response (CR) item (Min Item Type), totaling a minimum of 6 and maximum 8 items (Min, Max Items).

The performance task component table provides similar information; however, because performance tasks are not adaptive, information is provided in whole values, not in terms of probability or minimum or maximum ranges. For example, the grades 3–5 ELA/literacy performance task component table shows that writing will be measured within the performance task using one task (an essay) that will yield three scores. As indicated in the CAT component, writing will also be measured using 7–10 CAT items.

The mathematics target sampling tables provide the same additional content detail as the ELA/literacy target sampling tables. For example, the grade 3 mathematics sampling table indicates the seven assessment targets for the Priority Cluster under the Concepts and Procedures claim, the Depth of Knowledge (DOK) associated with each assessment target, the probability a specific assessment target will appear on a test for a student for CAT items and number of items delivered through a performance task (PT) or extended constructed response (ECR) (Min # Scored Tasks), and that the Priority Cluster under the Concepts and Procedures will be measured using a minimum of seven Selected Response (SR) and four Constructed Response (CR) items (Minimum # Items per Item Type), totaling a minimum of 15 and maximum 20 items (Min/Max Number of Items).

#### How Will the Blueprints Be Used?

The test blueprints are a driving force behind almost all important Smarter Balanced assessment design activities and deliverables. Below is a listing of the role the blueprints play in several key components.

- **Development of Items and Tasks**: The blueprints are critical to ensuring the sufficiency of the item pool, both for the content itself and the mix of item types to measure the content. Specifically, the blueprints, in concert with item and test specifications documents, drive the requirements for item and task production that are provided to our contractors. They are also used as part of the evidence to evaluate the alignment of our item pool to the CCSS.
- Pilot and Field Testing: To ensure adequate tryouts of all content and item types, both the Pilot Test and the Field Test must reflect the mix of items that will be found on the operational Smarter Balanced assessments. The results from Pilot and Field testing must be fully calibrated items and tasks to support our CAT approach. While neither the Pilot nor Field Test designs need to precisely match the summative blueprint, they must at least be representative of its key features.



- Live Test Administrations: The operational assessments must adhere strictly to the final blueprints. As described earlier, the final blueprints for the Smarter Balanced summative assessments will be adopted by Governing States before operational use in 2014-15. Those final blueprints will draw upon lessons learned in the Pilot and Field Test phases, and will ensure that students see a sufficient number of items to support the validity of the claims made from their performance (though the actual mix and length of test for each student will differ at the tolerance level defined in the blueprint and CAT specifications). At higher grain sizes (i.e., class, school, district, state), exact adherence to the blueprint is expected.
- **Reports and Other Support Materials**: Blueprints are guided by the level of detail that is intended to be reported at the student and aggregate levels. The Smarter Balanced blueprints have been designed to allow claim-level information for each student tested, with the potential for finer grained information for classes, schools, districts, and the state (subject to validation after Field testing). The blueprint also provides important information in the development of interpretive guides to assist targeted users of all Smarter Balanced reports.
- Standard Setting: Blueprints are used to define the sets of items/tasks that are used for most judgmental standard setting approaches, be they item driven (e.g., bookmark method) or student performance centered (e.g., Body of Work approach). The achievement level descriptors (ALDs) which drive standard setting need to reflect student performance expectations at various grade levels, as defined by the mix of content and item types prescribed in the blueprints.
- Smarter Balanced Validity Argument: A validity argument is the combination of declarations and related empirical evidence that are needed to support a particular use or interpretation of a test score. Adherence to established blueprints is critical to the Smarter Balanced validity argument. The Smarter Balanced blueprints articulate how the assessment is aligned to the CCSS and provide the basis for the reliability and validity of our reporting claims. Since defensible standard setting is key to establishing validity, the importance of the blueprints in this activity is essential.

#### What Are the Next Steps for the Summative Blueprints?

The important role of the Smarter Balanced summative blueprints in guiding assessment development and instruction has been described throughout this document. As part of our Pilot and Field testing, Smarter Balanced will review item/task performance across all points of the blueprints. The goal is to measure the feasibility and validity of key features of our system, especially:

- the interaction of content with item types;
- a range of scoring approaches, including machine-scored items, hand scoring, and those items using artificial intelligence models; and
- success assessing content at all expected DOK levels (1-4).

We will be performing ongoing simulation studies based on our Pilot results to determine the reliability of all expected claim scores; the blueprints may need to be adjusted based on these studies. Finally, Smarter Balanced is beginning the process of establishing weights across claim scores to determine an overall composite score for each content area (ELA and mathematics) across achievement levels. This process will fully engage member states, our vendor partners, TAC, and other key constituencies.



# ELA/Literacy Preliminary Summative Assessment Blueprints

This document contains preliminary Smarter Balanced Summative Assessment Blueprints for ELA/literacy. The document is organized to show first the blueprint tables for all grades, followed by the assessment target tables for all grades.

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#### ELA/Literacy Preliminary Summative Assessment Blueprint Blueprint Table ELA/Literacy Grades 3-5—Table 3a

Estimated Total Testing Time: 3:30 (without classroom component)

		Stimuli		Scored	Tasks	Total CAT Items	Approximate Weight	
Claim	Content Category	CAT	РТ	CAT Items	PT Ratings	by Claim	for Each Claim within Total Test	
1 Reading	Literary	1	0	6-8 6-8		12-16	TBD	
	Informational	1	0			12 10	100	
	Purpose/Focus/Organization	0		2-3	1	7-10		
2. Writing	Evidence/Elaboration	0	1a	2-3	1		TBD	
	Conventions	0		3-4	1			
3. Speaking/Listening	Listening	2	0	8-10	0	8-10	TBD	
4. Research	Research	0	1b	5-6	3	5-6	TBD	

- All times are estimates. Actual time may vary widely.
- Each student receives 1 PT which includes a set of stimuli on a given topic.
- The CAT component of the test includes selected-response items (SRs) and constructed-response items (CRs); some of these items will be technology enhanced. The PT includes 3 research items (SRs and/or CRs) and 1 constructed-response essay that is scored across 3 categories: Purpose/Focus/Organization, Evidence/Elaboration, and Conventions.
- Each student receives an overall ELA score and claim scores at the individual level.
- Performance Task stimuli 1a and 1b reflect a single stimulus used to reflect Writing (1a) and Research (1b).



#### ELA/Literacy Preliminary Summative Assessment Blueprint Blueprint Table ELA/Literacy Grades 6-8—Table 3b

Estimated Total Testing Time: 3:30 (without classroom component)

		Stimuli		Scored	Tasks	Total CAT Items	Approximate Weight	
Claim	Content Category	CAT	PT	CAT Items	PT Ratings	by Claim	for Each Claim within Total Test	
1 Reading	Literary	1	0	4-6	0	12-16	TBD	
1. Hedding	Informational	1-2	0	8-10	Ŭ	12 10		
	Purpose/Focus/Organization	0		2-3	1			
2. Writing	Evidence/Elaboration	0	1a	2-3	1	7-10	TBD	
	Conventions	0		3-4 1				
3. Speaking/Listening	Listening	2	0	8-10	0	8-10	TBD	
4. Research	Research	0	1b	5-6	3	5-6	TBD	

- All times are estimates. Actual time may vary widely.
- Each student receives 1 PT which includes a set of stimuli on a given topic.
- The CAT component of the test includes selected-response items (SRs) and constructed-response items (CRs); some of these items will be technology enhanced. The PT includes 3 research items (SRs and/or CRs) and 1 constructed-response essay that is scored across 3 categories: Purpose/Focus/Organization, Evidence/Elaboration, and Conventions.
- Each student receives an overall ELA score and claim scores at the individual level.
- Performance Task stimuli 1a and 1b reflect a single stimulus used to reflect Writing (1a) and Research (1b).



#### ELA/Literacy Preliminary Summative Assessment Blueprint Blueprint Table ELA/Literacy Grade 11—Table 3c

Estimated Total Testing Time: 4:00 (without classroom component)

		Stimuli		Score	d Tasks	Total CAT Items	Approximate Weight	
Claim	Content Category	CAT	PT	CAT Items	PT Ratings	by Claim	for Each Claim within Total Test	
1 Reading	Literary	1	0	5-7	0	17-22	TBD	
L. Neaung	Informational	2	0	12-15				
	Purpose/Focus/Organization	0		4-6	1		TBD	
2. Writing	Evidence/Elaboration	0	1a		1	7-10		
	Conventions	0		3-4	1			
3. Speaking/Listening	Listening	2	0	8-10	0	8-10	TBD	
4. Research	Research	0	1b	4-6	3	4-6	TBD	

- All times are estimates. Actual time may vary widely.
- Each student receives 1 PT which includes a set of stimuli on a given topic.
- The CAT component of the test includes selected-response items (SRs) and constructed-response items (CRs); some of these items will be technology enhanced. The PT includes 3 research items (SRs and/or CRs) and 1 constructed-response essay that is scored across 3 categories: Purpose/Focus/Organization, Evidence/Elaboration, and Conventions.
- Each student receives an overall ELA score and 4 claim scores or subscores reported at the individual level.
- Performance Task stimuli 1a and 1b reflect a single stimulus used to reflect Writing (1a) and Research (1b).



# ELA/Literacy Preliminary Summative Assessment Blueprint Target Sampling ELA/Literacy Grades 3-5—Table 4a

Component Claim		Content Category	Assessment Target	DOK	Min CAT	Min Item Type		Min, Max
					items	SR	CR	Items
			1: Key Details	1,2	p(1)=0.5			
			2: Central Ideas	2	p(1)=1.0			
		l iteraen.	3: Word Meanings	1,2	p(1)=0.5			
		(1 long set)	4: Reasoning and Evaluation	3,4	p(1)=1.0	3	1	6-8
			5: Analysis within/across Text	3,4				
			6: Text Structures and Features	2,3	p(1)=1.0			
	1 Pooding		7: Language Use	2,3				
	I. Reading	Informational (1 long set)	8: Key Details	1,2	p(1)=0.5			
			9: Central Ideas	2	p(1)=1.0			
			10: Word Meanings	1,2	p(1)=0.5	3	1	6-8
			11: Reasoning and Evaluation	3,4	p(1)=1.0			
CAT			12: Analysis within/across texts	3,4				
			13: Text Structures and Features	2,3	p(1)=1.0			
			14: Language Use	2,3				
			1/3/6: Write/Revise Brief Texts	2				
		Purpose/ Focus/ Organization	8: Language and Vocabulary Use	1	p(2)=1.0	_		
	2. Writing	Evidence/Elaboration	1/3/6: Write/Revise Brief Texts	2		2	1	7-10
		Conventions	9. Edit/Clarify	1	p(2)=1.0			
	3. Speaking/Listening	Listening	4. Listen/Interpret	1,2,3	p(8)=1.0	3	2	8-10
		-	2: Interpret and Integrate Information	2				
	4. Research	Research	3: Evaluate Information/Sources	2	p(5)=1.0	1	0	5-6
			4: Use Evidence	3				

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



# ELA/Literacy Preliminary Summative Assessment Blueprint Target Sampling ELA/Literacy Grades 3-5—Table 4a

Component	Claim	Content Category	Assessment Target	DOK	Tasks	Scores
		Purposo/Eccus/Organization	2/4/7: Compose Full Texts	3,4		1
	2 Writing	Fulpose/Focus/Organization	8: Language and Vocabulary Use	1	1	±
	Z. Witting	Evidence/Elaboration	2/4/7: Compose Full Texts	3,4	(Essay)	1
PT		Conventions	9. Edit/Clarify	1		1
	4. Research	Research	2: Interpret and Integrate Information	2		
			3: Evaluate Information/Sources	2	p(3)=1.0	3
			4: Use Evidence	3		

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



# ELA/Literacy Preliminary Summative Assessment Blueprint Target Sampling ELA/Literacy Grades 6-8—Table 4b

Component	Claim	Content Category	Assessment Target	DOK	Min CAT	Min Item Type		Min, Max
					Items	SR	CR	Items
			1: Key Details	2	p(1)=0.33			
			2: Central Ideas	2	p(1)=1.0			
		l iteraen.	3: Word Meanings	1,2	p(1)=0.33			
		(1 long set)	4: Reasoning and Evaluation	3	p(1)=1.0	3	1	4-6
			5: Analysis within/across Text	3,4				
			6: Text Structures and Features	2,3,4	p(1)=0.33			
	1 Pooding		7: Language Use	3				
	I. Reading		8: Key Details	2	p(1)=0.5	3	1	
		Informational (1 long set)	9: Central Ideas	2	p(1)=1.0 p(1)=0.5			
			10: Word Meanings	1,2				
			11: Reasoning and Evaluation	3	p(1)=1.0			8-10
CAT			12: Analysis within/across Texts	3,4				ł
			13: Text Structures and Features	3,4	p(1)=1.0			
			14: Language Use	3				
		Burnaca / Fague / Organization	1/3/6: Write/Revise Brief Texts	2				
	2 Writing	Fulpose/Focus/Organization	8: Language and Vocabulary Use	1,2	p(4)=1.0	C	1	7 10
	2. Whung	Evidence/Elaboration	1/3/6: Write/Revise Brief Texts	2		2	Т	7-10
		Conventions	9. Edit/Clarify	1	p(3)=1.0			
	3. Speaking/Listening	Listening	4. Listen/Interpret	1,2,3	p(8)=1.0	3	2	8-10
			2: Interpret and Integrate Information	3,4				- 0
	4. Research	Research	3: Evaluate Information/Sources	3	p(5)=1.0	1	0	5-6
			4: Use Evidence	3,4				

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



# ELA/Literacy Preliminary Summative Assessment Blueprint Target Sampling ELA/Literacy Grades 6-8—Table 4b

Component	Claim	Content Category	Assessment Target	DOK	Tasks	Scores
		Purpose/Focus/Organization	2/4/7: Compose Full Texts	3,4		1
	2 Writing		8: Language and Vocabulary Use	1,2	1	Ŧ
	Z. Witting	Evidence/Elaboration	2/4/7: Compose Full Texts	3,4	(Essay)	1
PT		Conventions	9. Edit/Clarify	1		1
	4. Research	search Research	2: Interpret and Integrate Information	3,4		
			3: Evaluate Information/Sources 3		3	3
			4: Use Evidence	3,4		

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



# ELA/Literacy Preliminary Summative Assessment Blueprint Target Sampling ELA/Literacy Grade 11—Table 4c

Component	Claim	aim Content Category	Accessment Target	DOK	Min CAT	Min Item Type		Min, May
component	Ciaim		Assessment larget	DON	Items	SR	CR	Items
			1: Key Details	2	p(1)=0.5			
			2: Central Ideas	2	p(1)=1.0			
		l iteraeu.	3: Word Meanings	1,2	p(1)=0.5			
		(1 long set)	4: Reasoning and Evaluation	3	p(1)=1.0	3	1	5-7
			5: Analysis within/across Text	3,4				
			6: Text Structures and Features	3,4	p(1)=1.0			
	1 Deciding		7: Language Use	3				
	1. Reading		8: Key Details	2	p(1)=1.0		3	12-15
		Informational (1 long set, 1 short set)	9: Central Ideas	2	p(2)=1.0 p(1)=1.0 p(2)=1.0	6		
			10: Word Meanings	1,2				
			11: Reasoning and Evaluation	3				
CAT			12: Analysis within/across Texts	3				
			13: Text Structures and Features	3,4	p(1)=1.0			
			14: Language Use	3				
		Purpose/Eccus/Organization	1/3/6: Write/Revise Brief Texts	2				
	2 Writing	Fulpose/Tocus/Organization	8: Language and Vocabulary Use	1,2	p(2)=1.0	2	1	7 10
	2. Whiting	Evidence/Elaboration	1/3/6: Write/Revise Brief Texts	2		2	Ŧ	7-10
		Conventions	9. Edit/Clarify	1	p(2)=1.0			
	3. Speaking/Listening	Listening	4. Listen/Interpret	1,3	p(8)=1.0	3	2	8-10
			2: Interpret and Integrate Information	4				
	4. Research	Research	3: Evaluate Information/Sources	4	p(2)=1.0	1	0	4-6
			4: Use Evidence	3,4				

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



#### ELA/Literacy Preliminary Summative Assessment Blueprint Target Sampling ELA/Literacy Grade 11—Table 4c

Component	Claim	Content Category	Assessment Target	DOK	Tasks	Scores
	2. Writing	Purpose/Focus/Organization	4/7: Compose Full Texts	3,4		1
			8: Language and Vocabulary Use	1,2	1	
		Evidence/Elaboration	4/7: Compose Full Texts	3,4	(Essay)	1
PT		Conventions	9. Edit/Clarify	1		1
	4. Research	Research	2: Interpret and Integrate Information	4	3	3
			3: Evaluate Information/Sources	4		
			4: Use Evidence	3,4		

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



# Mathematics Preliminary Summative Assessment Blueprints

This document contains preliminary Smarter Balanced Summative Assessment Blueprints for mathematics. The document is organized to show first the blueprint tables for all grades, followed by the assessment target sampling tables for all grades.

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Estimated Total Testing Time: 2:30 (without classroom component)

Claim/Score Reporting Category	Content Category	Stimuli		Minimum # \$	Scored Tasks	Approximate Weight for Each Claim Within	
		CAT	PT	CAT	PT	Total Test	
1 Concepts and Procedures	Domain 1. Priority Cluster	0	0	15-20	0	TBD	
	Domain 2. Supporting Cluster	0	0	5-8	0		
2. Problem Solving	Problem Solving	0		4 5	1	TBD	
4. Modeling and Data Analysis	Modeling and Data Analysis	0	1	4-5	3		
3. Communicating Reasoning	Communicating Reasoning	0		6-7	2	TBD	

- All times are estimates. Actual time may vary widely.
- Item types: selected response (SR); constructed response (CR); extended constructed response (ECR); performance task (PT).
- Claim 2 (Problem Solving) and Claim 4 (Modeling and Data Analysis) have been combined because of content similarity and a desire to
  reduce test length. There are still four claims, but only an overall math score and 3 claim scores will be reported.



Estimated Total Testing Time: 3:00 (without classroom component)

Claim/Score Reporting Category	Content Category	Stimuli		Minimu	m # Score	Approximate Weight for Each Claim		
		CAT	PT	CAT	ECR	PT	Within Total Test	
	Domain 1. Priority Cluster	0	0	15-20	0	0	TBD	
1. Concepts and Procedures	Domain 2. Supporting Cluster	0	0	5-8	0	0		
2. Problem Solving	Problem Solving	0		3	2	1	TBD	
4. Modeling and Data Analysis	Modeling and Data Analysis	0	1	5	2	3		
3. Communicating Reasoning	Communicating Reasoning	0		5-6	1	2	TBD	

- All times are estimates. Actual time may vary widely.
- Item types: selected response (SR); constructed response (CR); extended constructed response (ECR); performance task (PT).
- Claim 2 (Problem Solving) and Claim 4 (Modeling and Data Analysis) have been combined because of content similarity and a desire to
  reduce test length. There are still four claims but only an overall math score and 3 claim scores will be reported.



Estimated Total Testing Time: 3:30 (without classroom component)

Claim/Score Reporting Category	Content Category	Stimuli		Minimur	n # Score	Approximate Weight for Fach Claim		
		CAT	PT	CAT	ECR	PT	Within Total Test	
	Domain 1. Priority Cluster	0	0	15-20	0	0	TBD	
1. Concepts and Procedures	Domain 2. Supporting Cluster	0	0	5-8	0	0		
2. Problem Solving	Problem Solving	0		Б	2	1	TBD	
4. Modeling and Data Analysis	Modeling and Data Analysis	0	1	5	Z	З		
3. Communicating Reasoning	Communicating Reasoning	0		8		2	TBD	

- All times are estimates. Actual time may vary widely.
- Item types: selected response (SR); constructed response (CR); extended constructed response (ECR); performance task (PT).
- Claim 2 (Problem Solving) and Claim 4 (Modeling and Data Analysis) have been combined because of content similarity and a desire to reduce test length. There are still four claims, but only an overall math score and 3 claim scores will be reported.



# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 3–Table 6a

Claim	Content Assessment Targets DOP		DOK	Minimum # Scored Ta		ks Minimum # Items per Item Type		Min/Max Number of
	Category			CAT	PT/ECR	SR	CR	Items
1. Concepts and Procedures	Priority Cluster	B. Understand properties of multiplication and the relationship between multiplication and division.	1					
		C. Multiply and divide within 100.	1					
		I. Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	1,2	p(6)=1.0	0	7	4	15/20
		G. Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	1,2					
		D. Solve problems involving the four operations, and identify and explain patterns in arithmetic.	2	p(6)=1.0				
		F. Develop understanding of fractions as numbers.	1,2					
		A. Represent and solve problems involving multiplication and division.	1,2	p(3)=1.0				
-	Supporting	E. Use place value understanding and properties of operations to perform multi- digit arithmetic.	1	p(4)=1.0	0	2	1	5/8
	Cluster	K. Reason with shapes and their attributes.	1,2		-			
		H. Represent and interpret data.	1,2,3	p(1)=1.0				

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

Minimum # Scored Tasks for CAT: This column describes the minimum number of CAT items each student will receive for each target. For example, in grade 3 mathematics Claim 1 Domain 2 Represent and interpret data, p(1)=1.0 indicates that each student will have a 100% probability of receiving at least 1 Represent and interpret data CAT item.



# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 3–Table 6a

Claim	Content	Assessment Targets	DOK	Minimum #	Scored Tasks	Minimum # Items per Item Type		Min/Max Number of
	Category			CAT	PT/ECR	SR	CR	Items
	Problem Solving	<ul> <li>Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.</li> </ul>	2,3					
		B. Select and use appropriate tools strategically.	1,2					
		C. Interpret results in the context of a situation.	2	p(2)=1.0	1	0	3	3
		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					L
2. Problem Solving		A. Apply mathematics to solve problems arising in everyday life, society, and the workplace.	2,3					
& 4. Modeling and Data Analysis		B. Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.	2,3,4					
-	Modeling	C. State logical assumptions being used.	1,2					
	and Data Analysis	<ul> <li>D. Interpret results in the context of a situation.</li> </ul>	2,3	p(2)=1.0	3	0	5	5
		E. Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.	3,4					
		F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	1,2,3					

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



# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 3–Table 6a

		G. Identify, analyze, and synthesize relevant external resources to pose or solve problems.	3,4					
Claim	Content	Assessment Targets	DOK	Minimum # Scored Tasks		Minimum # Items per Item Type		Min/Max Number of
	Category			CAT	PT/ECR	SR	CR	Items
	n/a	<ul> <li>B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.</li> </ul>	3,4			0	З	8
		C. State logical assumptions being used.	2,3		2			
		D. Use the technique of breaking an argument into cases.	2,3	p(6)=1.0				
3. Communicating Reasoning		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					
Reasoning		F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions.	2,3					
		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					

- DOK: Depth of Knowledge, consistent with the Smarter Balanced Content Specifications.
- Minimum # Scored Tasks for CAT: This column describes the minimum number of CAT items each student will receive for each target. For example, in grade 3 mathematics Claim 1 Domain 2 Represent and interpret data, p(1)=1.0 indicates that each student will have a 100% probability of receiving at least 1 Represent and interpret data CAT item.



# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 4—Table 6a

Claim	Content	Assessment Targets	DOK	Minimum # Scored Tasks		Minimum # Items per Item Type		Min/Max Number of
	Category			CAT	PT/ECR	SR	CR	Items
		A. Use the four operations with whole numbers to solve problems.	1,2					15/20
		E. Use place value understanding and properties of operations to perform multi-digit arithmetic.	1,2	p(9)=1.0				
		F. Extend understanding of fraction equivalence and ordering.	1,2					
	Priority Cluster	G. Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	1,2	p(3)=1.0	0	7	4	
		D. Generalize place value understanding for multi-digit whole numbers.	1,2	p(2)=1.0				
1. Concepts and Procedures		H. Understand decimal notation for fractions, and compare decimal fractions.	1,2	p(1)=1.0				
		<ol> <li>Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.</li> </ol>	1,2	p(3)=1.0				5/8
		K. Geometric measurement: understand concepts of angle and measure angles.	1,2					
	Supporting Cluster	B. Gain familiarity with factors and multiples.	1		0	2	1	
		C. Generate and analyze patterns.	2,3	p(1)=1.0				
		J. Represent and interpret data.	1,2					
		<ul> <li>Draw and identify lines and angles, and classify shapes by properties of their lines and angles.</li> </ul>	1,2	p(1)=1.0				

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



# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 4—Table 6a

Claim	Content	Assessment Targets	DOK	Minimum Tas	# Scored ks	Minimum # Items per Item Type		Minimum Number of
	outogoly			CAT	PT/ECR	SR	CR	Items
		A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2,3					
		<ul> <li>B. Select and use appropriate tools strategically.</li> </ul>	1,2					
	Problem Solving	C. Interpret results in the context of a situation.	2	p(2)=1.0	1	0	3	3
		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					
2. Problem Solving	Problem Solving Modeling and ta Analysis	A. Apply mathematics to solve problems arising in everyday life, society, and the workplace.	2,3					
& 4. Modeling and Data Analysis		B. Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.	2,3,4					
	Modeling	C. State logical assumptions being used.	1,2					
	and Data Analysis	D. Interpret results in the context of a situation.	2,3	p(2)=1.0	3	0	5	5
		E. Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.	3,4					
		F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	1,2,3					

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



## Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 4—Table 6a

		G. Identify, analyze, and synthesize relevant external resources to pose or solve problems.	3,4						
Claim	Content Category	Assessment Targets	DOK	Minimum # Scored Tasks		Minimum # Items per Item Type		Minimum Number of	
				CAT	PT/ECR	SR	CR	Items	
3. Communicating Reasoning	n/a	B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.	3,4		2	0		8	
		C. State logical assumptions being used.	2,3						
		D. Use the technique of breaking an argument into cases.	2,3						
		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	p(6)=1.0			3		
		F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions.	2,3						
		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						

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

Minimum # Scored Tasks for CAT: This column describes the minimum number of CAT items each student will receive for each target. For example, in grade 3 mathematics Claim 1 Domain 2 Represent and interpret data, p(1)=1.0 indicates that each student will have a 100% probability of receiving at least 1 Represent and interpret data CAT item.



# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 5–Table 6a

Claim	Content	Assessment Targets	DOK	Minimum a Tasl	# Scored ks	Minimum # Items per Item Type		Min/Max Number of
	Category			CAT	PT/ECR	SR	CR	Items
		E. Use equivalent fractions as a strategy to add and subtract fractions.	1,2					
		<ol> <li>Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.</li> </ol>	1,2	p(6)=1.0				<ul> <li>Min/Max Number of Items</li> <li>15/20</li> <li>5/8</li> </ul>
	Priority Cluster	F. Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	1,2	p(5)=1.0	0	7	4	
		D. Perform operations with multi-digit whole numbers and with decimals to hundredths.	1,2	p(4)=1.0				
1. Concepts and Procedures		C. Understand the place value system.	1,2					
		J. Graph points on the coordinate plane to solve real-world and mathematical problems.	1	p(3)=1.0				
		<ul> <li>K. Classify two-dimensional figures into categories based on their properties.</li> </ul>	2	ρ(3)-1.0				
	Supporting Cluster	A. Write and interpret numerical expressions.	1		0	2	1	5/8
		B. Analyze patterns and relationships.	2					15/20
	G	<ul> <li>G. Convert like measurement units within a given measurement system.</li> </ul>	1	p(2)=1.0				
		H. Represent and interpret data.	1,2	1,2				

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



# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 5–Table 6a

Claim	Content	Assessment Targets	Assessment Targets DOK				red Minimum # Items per Item Type	
	Category			CAT	PT/ECR	SR	CR	Items
		A. Apply mathematics to solve well- posed problems arising in everyday life, society, and the workplace.	2,3				3	
	Problem	B. Select and use appropriate tools strategically.	1,2					
	Solving	C. Interpret results in the context of a situation.	2	p(2)=1.0	1	0		3
2. Problem Solving		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					
&		<ul> <li>Apply mathematics to solve problems arising in everyday life, society, and the workplace.</li> </ul>	2,3					
4. Modeling and Data Analysis	Modeling	B. Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.	2,3,4					
	and Data Analysis	C. State logical assumptions being used.	1,2	p(2)=1.0	3	0	5	5
		D. Interpret results in the context of a situation.	2,3					
	-	E. Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.	3,4					

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



# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 5–Table 6a

		F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	1,2,3							
		<ul> <li>G. Identify, analyze, and synthesize relevant external resources to pose or solve problems.</li> </ul>	3,4							
Claim	Content Category	Assessment Targets	DOK	Minimum # Scored Tasks		Minimum # Scored Minimum # Items Minin Tasks per Item Type Numb		Minimum # Items per Item Type		Minimum Number of
				CAT	PT/ECR	SR	CR	Items		
		<ul> <li>B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.</li> </ul>	3,4							
		C. State logical assumptions being used.	2,3					Minimum         Number of         Items		
		D. Use the technique of breaking an argument into cases.	2,3							
3. Communicating Reasoning	n/a	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	p(6)=1.0	2	0	3	Minimum Number of Items		
		F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions.	2,3	-						
		<ul> <li>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.)</li> </ul>	2							

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

Minimum # Scored Tasks for CAT: This column describes the minimum number of CAT items each student will receive for each target. For example, in grade 3 mathematics Claim 1 Domain 2 Represent and interpret data, p(1)=1.0 indicates that each student will have a 100% probability of receiving at least 1 Represent and interpret data CAT item.



# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 6–Table 6b

Claim	Content	Assessment Targets	DOK	Minimum Tas	Minimum # Scored Tasks		Minimum # Items per Item Type	
	Category			CAT	PT/ECR	SR	CR	of Items
		E. Apply and extend previous understandings of arithmetic to algebraic expressions.	1,2	p(6)=1.0				
1. Concepts and		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	p(4)=1.0				
	Priority Cluster	<ul> <li>G. Represent and analyze quantitative relationships between dependent and independent variables.</li> </ul>	1,2	p(2)=1.0	0	7	4	15/20
		<ul> <li>B. Apply and extend previous understandings of multiplication and division to divide fractions by fractions.</li> </ul>	1,2	p(3)-1.0				
Procedures		D. Apply and extend previous understandings of numbers to the system of rational numbers.	1,2	p(2)=1.0				
		C. Compute fluently with multi-digit numbers and find common factors and multiples.	1					
	Supporting Cluster	<ul> <li>H. Solve real-world and mathematical problems involving area, surface area, and volume.</li> </ul>	2	p(5)=1.0	0	2	1	15/20
	-	I. Develop understanding of statistical variability.	1,2	2				
		J. Summarize and describe distributions.	1,2					

- DOK: Depth of Knowledge, consistent with the Smarter Balanced Content Specifications.
- Minimum # Scored Tasks for CAT: This column describes the minimum number of CAT items each student will receive for each target. For example, in grade 3 mathematics Claim 1 Domain 2 Represent and interpret data, p(1)=1.0 indicates that each student will have a 100% probability of receiving at least 1 Represent and interpret data CAT item.



# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 6–Table 6b

Claim	Content	Assessment Targets	DOK	Minimum Tas	# Scored sks	Minimum # Items per Item Type		Minimum Number of
	Category			CAT	PT/ECR	SR	CR	Items
		A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2,3					
		B. Select and use appropriate tools strategically.	1,2					
	Problem Solving	C. Interpret results in the context of a situation.	2		2	0	9	
<ol> <li>Problem Solving</li> <li>&amp;</li> <li>Modeling and Data Analysis</li> </ol>		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	-				
	A. /	A. Apply mathematics to solve problems arising in everyday life, society, and the workplace.	2,3		=1.0			
		B. Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.	d the 2,3 pf models 2,3 p(3)=	p(3)=1.0				9
		C. State logical assumptions being used.	1,2					
	Modeling and Data Analysis	D. Interpret results in the context of a situation.	2,3		4	0		
		E. Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.	3,4	_				
		F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two- way tables, graphs, flow charts, or formulas).	1,2,3					

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



## Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 6–Table 6b

		G. Identify, analyze, and synthesize relevant external resources to pose or solve problems.	3,4					
Claim	Content	Assessment Targets	DOK	Minimum Ta	n # Scored sks	Minimum # Items per Item Type		Min/Max Number
	Category			CAT	PT/ECR	SR	CR	of Items
		A. Test propositions or conjectures with specific examples.	2					
		B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.	3,4					
		C. State logical assumptions being used.	2,3					
		D. Use the technique of breaking an argument into cases.	2,3					
3. Communicating Reasoning	n/a	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	p(5)=1.0	3	0	8	8
		F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions.	2,3					
		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.)	3,4					

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

Minimum # Scored Tasks for CAT: This column describes the minimum number of CAT items each student will receive for each target. For example, in grade 3 mathematics Claim 1 Domain 2 Represent and interpret data, p(1)=1.0 indicates that each student will have a 100% probability of receiving at least 1 Represent and interpret data CAT item.



# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 7—Table 6b

Claim	Content Category	Assessment Targets	DOK	Minimum # Scored Tasks		Minimun per Ite	Min/Max Number of Items					
	outogory			CAT	PT/ECR	SR	CR	of Items				
		A. Analyze proportional relationships and use them to solve real-world and mathematical problems.	1,2	n(9)=1.0								
	Priority Cluster	D. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.	1,2	p(6)=1.0	- O		0	0	0	7	Л	15/20
		B. Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.	1,2				4	13/20				
		C. Use properties of operations to generate equivalent expressions.	1									
1. Concepts and Procedures		E. Draw, construct, and describe geometrical figures and describe the relationship between them.	2,3									
		F. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	1,2	ρ(3)-1.0								
	Supporting Cluster	G. Use random sampling to draw inferences about a population.	1,2		0	2	1	5/8				
		H. Draw informal comparative inferences about two populations.	1,2	p(2)=1.0								
		<ol> <li>Investigate chance processes and develop, use, and evaluate probability models.</li> </ol>	1,2									

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Minimum # Scored Tasks for CAT: This column describes the minimum number of CAT items each student will receive for each target. For example, in grade 3 mathematics Claim 1 Domain 2 Represent and interpret data, p(1)=1.0 indicates that each student will have a 100% probability of receiving at least 1 Represent and interpret data CAT item.



# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 7—Table 6b

Claim	Content	Assessment Targets	DOK	Minimum Tas	Minimum # Scored Tasks		Minimum # Items per Item Type	
	Category			CAT	PT/ECR	SR	CR	of Items
		<ul> <li>A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.</li> </ul>	2,3					
		B. Select and use appropriate tools strategically.	1,2		2		9	
	Problem Solving	C. Interpret results in the context of a situation.	2			0		
<ol> <li>2. Problem Solving</li> <li>&amp;</li> <li>4. Modeling and Data Analysis</li> </ol>		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					
		<ul> <li>A. Apply mathematics to solve problems arising in everyday life, society, and the workplace.</li> </ul>	2,3	p(3)=1.0				9
		B. Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.	2,3,4					
		C. State logical assumptions being used.	1,2					
	Modeling and Data Analysis	D. Interpret results in the context of a situation.	2,3		4	0		
		E. Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.	3,4					
		F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	1,2,3					

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### Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 7—Table 6b

		G. Identify, analyze, and synthesize relevant external resources to pose or solve problems.	3,4					
Claim	Content	Assessment Targets	DOK	Minimum # Scored Tasks		Minimum # Items per Item Type		Minimum Number
	Category			CAT	PT/ECR	SR	CR	of Items
		A. Test propositions or conjectures with specific examples.	2					
		B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.	3,4			Minimum # Items per Item Type       Minimu Number of Item         SR       CR         0       8		
		C. State logical assumptions being used.	2,3					
		D. Use the technique of breaking an argument into cases.	2,3					
3. Communicating Reasoning	n/a	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	p(5)=1.0	3	0	8	8
		F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions.	2,3					
		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.)	3,4					

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



# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 8–Table 6b

Claim	Content Category	Assessment Targets	DOK	Minimum a Tas	Minimum # Scored Tasks		Minimum # Items per Item Type	
	Category			CAT	PT/ECR	SR	CR	of Items
		C. Understand the connections between proportional relationships, lines, and linear equations.	2	p(6)=1.0				
1. Concepts and		D. Analyze and solve linear equations and pairs of simultaneous linear equations.	2					
		B. Work with radicals and integer exponents.	1					
	Priority Cluster	E. Define, evaluate, and compare functions.	1,2	1,2 p(6)=1.0 0 7	7	4	15/20	
		G. Understand congruence and similarity using physical models, transparencies, or geometry software.	2					
Procedures		F. Use functions to model relationships between quantities.	1,2	p(3)=1.0				
		H. Understand and apply the Pythagorean Theorem.	2	p(3)=1.0				
-		A. Know that there are numbers that are not rational, and approximate them by rational numbers.	1					
	Supporting Cluster	I. Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.	2	p(5)=1.0	0	2	1	5/8
		J. Investigate patterns of association in bivariate data.	1,2					

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# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 8–Table 6b

Claim	Content	Assessment Targets	DOK	Minimum Tas	# Scored ks	Minimum # Items per Item Type		Minimum Number of
	Category			CAT	PT/ECR	SR	CR	Items
		A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2,3					
		B. Select and use appropriate tools strategically.	1,2					
	Problem Solving	C. Interpret results in the context of a situation.	e context of a 2		2	0	9	
<ul> <li>2. Problem Solving</li> <li>&amp;</li> <li>4. Modeling and Data Analysis</li> </ul>		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					
		A. Apply mathematics to solve problems arising in everyday life, society, and the workplace.	2,3	p(3)=1.0				
		B. Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.	2,3,4					9
		C. State logical assumptions being used.	1,2	]				
	Modeling and Data Analysis	D. Interpret results in the context of a situation.	2,3		4	0		
		E. Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.	3,4					
		F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	1,2,3					

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### Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 8–Table 6b

		G. Identify, analyze, and synthesize relevant external resources to pose or solve problems.	3,4							
Claim	Content	Assessment Targets	DOK	Minimum # Scored Tasks		Minimum # Scored Minimum # Items DOK Tasks per Item Type		Minimum # Items per Item Type		Minimum Number of
	Category	, in the second s		CAT	PT/ECR	SR	CR	Items		
3. Communicating Reasoning		A. Test propositions or conjectures with specific examples.	2							
		B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.	3,4							
		C. State logical assumptions being used.	2,3							
		D. Use the technique of breaking an argument into cases.	2,3							
	n/a	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	p(5)=1.0	3	0	8	8		
		F. Base arguments on concrete referents such as objects, drawings, diagrams, 2,3 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.)	3,4							

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# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 11—Table 6c

Claim	Content Category	Assessment Targets	DOK	Minimum # Scored Tasks		Minimum # Items per Item Type		Min/Max Number
				CAT	PT/ECR	SR	CR	of Items
1. Concepts and Procedures	Priority Cluster	D. Interpret the structure of expressions.	1	p(2)=1.0	0	7	4	15/20
		<ul> <li>Write expressions in equivalent forms to solve problems.</li> </ul>	1,2					
		<ul> <li>F. Perform arithmetic operations on polynomials.</li> </ul>	1	p(1)=1.0				
		G. Create equations that describe numbers or relationships.	1,2	p(5)=1.0				
		<ul> <li>H. Understand solving equations as a process of reasoning and explain the reasoning.</li> </ul>	1,2					
		<ol> <li>Solve equations and inequalities in one variable.</li> </ol>	1,2					
		<ul> <li>Represent and solve equations and inequalities graphically.</li> </ul>	1,2	p(2)=1.0				
		<ul> <li>K. Understand the concept of a function and use function notation.</li> </ul>	1	p(1)=1.0				
		<ul> <li>Interpret functions that arise in applications in terms of a context.</li> </ul>	1,2	p(4)=1.0				
		<ul> <li>M. Analyze functions using different representations.</li> </ul>	1,2,3					
		N. Build a function that models a relationship between two quantities.	1,2					
	Cupporting Cluster E	0. Prove geometric theorems.	2	p(2)=1.0	-	2	1	5/8
		<ul> <li>P. Summarize, represent and interpret data on a single count or measurement variable.</li> </ul>	2	p(1)=1.0				
		A. Extend the properties of exponents to rational exponents.	1,2	- p(1)=1.0				
		<ul> <li>B. Use properties of rational and irrational numbers.</li> </ul>	1,2					

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# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 11—Table 6c

		C.	Reason quantitatively and use units to solve problems.	1,2	p(1)=1.0				
Claim	Content Category	Assessment Targets	DOK	Minimum # Scored Tasks		Minimum # Items per Item Type		Minimum Number of	
				CAT	PT/ECR	SR	CR	Items	
	Problem Solving	Α.	Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	2,3	p(3)=1.0	2	0	4	5
		В.	Select and use appropriate tools strategically.	1,2					
		C.	Interpret results in the context of a situation.	2					
		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					
2. Problem Solving	Modeling and Data Analysis	Α.	Apply mathematics to solve problems arising in everyday life, society, and the workplace.	2,3	p(2)=1.0	p(4)=1.0	0	2	6
α 4. Modeling and Data Analysis		В.	Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.	2,3,4					
		C.	State logical assumptions being used.	1,2					
		D.	Interpret results in the context of a situation.	2,3					
		E.	Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.	3,4					
		F.	Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).	1,2,3					

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# Mathematics Preliminary Summative Assessment Blueprint Target Sampling Mathematics Grade 11—Table 6c

		G. Identify, analyze, and synthesize relevant external resources to pose or solve problems.	3,4					
Claim	Content Category	Assessment Targets	DOK	Minimum # Scored Tasks		Minimum # Items per Item Type		Minimum Number
				CAT	PT/ECR	SR	CR	of Items
3. Communicating Reasoning	n/a	A. Test propositions or conjectures with specific examples.	2					
		<ul> <li>B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.</li> </ul>	3,4					
		C. State logical assumptions being used.	2,3					
		D. Use the technique of breaking an argument into cases.	2,3					
		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	p(8	)=1.0	0	8	8
		F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions.	2,3					
		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.)	3,4					

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Minimum # Scored Tasks for CAT: This column describes the minimum number of CAT items each student will receive for each target. For example, in grade 3 mathematics Claim 1 Domain 2 Represent and interpret data, p(1)=1.0 indicates that each student will have a 100% probability of receiving at least 1 Represent and interpret data CAT item.