

Smarter Balanced Mathematics Claims Distribution Overview

In the spring of 2015, Washington state students in grades 3 to 8 and 11 took the Smarter Balanced Comprehensive Assessments for mathematics. The results of these assessments were reported to the U.S. Department of Education for purposes of determining adequate yearly progress. A [cut-score for each assessment](#) indicating progress toward college and career readiness was determined by the Smarter Balanced Assessment Consortium.

This Claim Distribution document contains information on the [Mathematics K–12 Learning Standards](#), also referred to as “the standards,” that are eligible to be assessed on the mathematics exams in Grade 3. This is the same information found in the [Smarter Balanced Item Specification documents](#). This claim distribution, however, does not represent the emphasis of content on the Smarter Balanced summative assessment. [The summative assessment blueprint](#) provides information on the emphasis of content and claim on the assessment.

In this document, the mathematical content is listed by domain, cluster, and standard as written in the standards. Standards or clusters are considered priority assessment content unless labeled as supporting assessment content in the list below.

Smarter Balanced developed four “Mathematical Claims” that state what students should know and be able to do in the domain of mathematics, and on which the Smarter Balanced assessment system will provide data. This document shows how the standards will be assessed across these same claims. The letters associated with Claim match the target letters used in the Smarter Balanced Claim 1 Item Specification documents. All standards are eligible for assessment in Claims 2 to 4, but the standards and clusters addressed in the outline make up the majority of the items for that claim.

The outline on the next page shows how the Standards for Mathematical Practice support each of the four claims.

Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.



Smarter Balanced Assessment Claims

Claim 1: Concepts & Procedures

- Students can explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.*
- This claim addresses procedural skills and the conceptual understanding on which developing skills depend. It is important to assess student understanding of how concepts link together and why mathematical procedures work the way they do. This relates to the structural nature of mathematics.
- Practice Standard: 5, 6, 7, 8

Claim 2: Problem Solving

- Students can solve a range of complex well-posed problems in pure and applied mathematics, making productive use of knowledge and problem-solving strategies.*
- Assessment items and tasks focused on Claim 2 include problems in pure mathematics and problems set in context. Problems are presented as items and tasks that are well-posed (that is, problem formulation is not necessary) and for which a solution path is not immediately obvious. These problems require students to construct their own solution pathway rather than follow a provided one. Such problems will therefore be unstructured, and students will need to select appropriate conceptual and physical tools to use.
- Practice Standard: 1, 5, 7, 8

Claim 3: Communicating Reasoning

- Students can clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of others.*
- Claim 3 refers to a recurring theme in the content and practice standards—the ability to construct and present a clear, logical, convincing argument. For older students, this may take the form of a rigorous, deductive proof based on clearly stated axioms. For younger students, this will involve more informal justifications. Assessment tasks that address this claim will typically present a claim and ask students to provide, for example, a justification or counterexample.
- Practice Standard: 3, 6

Claim 4: Modeling and Data Analysis

- Students can analyze complex, real-world scenarios and can construct and use mathematical models to interpret and solve problems.*
- Modeling links classroom mathematics and statistics to everyday life, work and decision-making. Students use modeling and data analysis to choose and use appropriate mathematics and statistics to analyze and understand situations, to make predictions, find solutions and improve decision making based on results from the model. The standards feature modeling as both a mathematical practice at all grades and a content focus in high school.
- Practice Standard: 2, 4, 5

Grade 4 Claim Distribution by Domain, Cluster, and Standard

Domain: Operations and Algebraic Thinking

- Cluster: 4.OA.A Use the four operations with whole numbers to solve problems.
 - Standard: 4.OA.A.1
 - Assessed in Claim 1 Target A, Claim 2, and Claim 4
 - Standard: 4.OA.A.2
 - Assessed in Claim 1 Target A, Claim 2, and Claim 4
 - Standard: 4.OA.A.3
 - Assessed in Claim 1 Target A and Claims 2, 3, and 4
- Cluster: 4.OA.B Gain familiarity with factors and multiples. *(Supporting Cluster)*
 - Standard: 4.OA.B.4
 - Assessed in Claim 1 Target B
- Cluster: 4.OA.C Generate and analyze patterns. *(Supporting Cluster)*
 - Standard: 4.OA.C.5
 - Assessed in Claim 1 Target C

Domain: Number and Operations in Base Ten

- Cluster: 4.NBT.A Generalize place value understanding for multi-digit whole numbers.
 - Standard: 4.NBT.A.1
 - Assessed in Claim 1 Target D and Claim 3
 - Standard: 4.NBT.A.2
 - Assessed in Claim 1 Target D and Claim 3
 - Standard: 4.NBT.A.3
 - Assessed in Claim 1 Target D and Claim 3
- Cluster: 4.NBT.B Use place value understanding and properties of operations to perform multi-digit arithmetic.
 - Standard: 4.NBT.B.4
 - Assessed in Claim 1 Target E and Claim 2
 - Standard: 4.NBT.B.5
 - Assessed in Claim 1 Target E, Claim 2, and Claim 3
 - Standard: 4.NBT.B.6
 - Assessed in Claim 1 Target E, Claim 2, and Claim 3

Domain: Number and Operations - Fractions

- Cluster: 4.NF.A Extend understanding of fraction equivalence and ordering.
 - Standard: 4.NF.A.1
 - Assessed in Claim 1 Target F, Claim 2, and Claim 3
 - Standard: 4.NF.A.2

- Assessed in Claim 1 Target F, Claim 2, and Claim 3
- Cluster: 4.NF.B Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
 - Standard: 4.NF.B.3
 - Assessed in Claim 1 Target G, Claim 2, and Claim 4
 - Standard: 4.NF.B.3a
 - Assessed in Claim 1 Target G and Claims 2, 3, and 4
 - Standard: 4.NF.B.3b
 - Assessed in Claim 1 Target G and Claims 2, 3, and 4
 - Standard: 4.NF.B.3c
 - Assessed in Claim 1 Target G and Claims 2, 3, and 4
 - Standard: 4.NF.B.3d
 - Assessed in Claim 1 Target G, Claim 2, and Claim 4
 - Standard: 4.NF.B.4
 - Assessed in Claim 1 Target G, Claim 2, and Claim 4
 - Standard: 4.NF.B.4a
 - Assessed in Claim 1 Target G and Claims 2, 3, and 4
 - Standard: 4.NF.B.4b
 - Assessed in Claim 1 Target G and Claims 2, 3, and 4
 - Standard: 4.NF.B.4c
 - Assessed in Claim 1 Target G, Claim 2, and Claim 4
- Cluster: 4.NF.C Understand decimal notation for fractions and compare decimal fractions.
 - Standard: 4.NF.C.5
 - Assessed in Claim 1 Target H and Claim 2
 - Standard: 4.NF.C.6
 - Assessed in Claim 1 Target H and Claim 2
 - Standard: 4.NF.C.7
 - Assessed in Claim 1 Target H, Claim 2, and Claim 3

Domain: Measurement and Data

- Cluster: 4.MD.A Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. (*Supporting Cluster*)
 - Standard: 4.MD.A.1
 - Assessed in Claim 1 Target I, Claim 2, and Claim 4
 - Standard: 4.MD.A.2
 - Assessed in Claim 1 Target I, Claim 2, and Claim 4
 - Standard: 4.MD.A.3
 - Assessed in Claim 1 Target I, Claim 2, and Claim 4
- Cluster: 4.MD.B Represent and interpret data. (*Supporting Cluster*)
 - Standard: 4.MD.B.4
 - Assessed in Claim 1 Target J and Claim 4

- Cluster: 4.MD.C Geometric measurement: understand concepts of angle and measure angles. (*Supporting Cluster*)
 - Standard: 4.MD.C.5
 - Assessed in Claim 1 Target K, Claim 2, and Claim 4
 - Standard: 4.MD.C.5a
 - Assessed in Claim 1 Target K, Claim 2, and Claim 4
 - Standard: 4.MD.C.5b
 - Assessed in Claim 1 Target K, Claim 2, and Claim 4
 - Standard: 4.MD.C.6
 - Assessed in Claim 1 Target K, Claim 2, and Claim 4
 - Standard: 4.MD.C.7
 - Assessed in Claim 1 Target K, Claim 2, and Claim 4

Domain: Geometry

- Cluster: 4.G.A Draw and identify lines and angles, and classify shapes by properties of their lines and angles. (*Supporting Cluster*)
 - Standard: 4.G.A.1
 - Assessed in Claim 1 Target L
 - Standard: 4.G.A.2
 - Assessed in Claim 1 Target L
 - Standard: 4.G.A.3
 - Assessed in Claim 1 Target L

*In Claims 2 to 4, clusters and standards addressed make up the majority of the items for that claim. All clusters and standards are eligible for assessment in Claims 2 to 4. [The summative assessment blueprint](#) provides information on the emphasis of content and claim on the assessment.



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