California Department of Education

Executive Office

SBE-002 (REV. 11/2017)

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# **MEMORANDUM**

DATE: February 14, 2025

TO: MEMBERS, State Board of Education

FROM: TONY THURMOND, State Superintendent of Public Instruction

SUBJECT: Crosswalk of Smarter Balanced Summative Assessment for Mathematics with the California Mathematics Framework

## Summary of Key Issues

The *Mathematics Framework* *for California Public Schools* (*Mathematics Framework*) supports the implementation of the *California Common Core State Standards for Mathematics* (*CA CCSSM*). More information about the *CA CCSSM* is available at <https://www.cde.ca.gov/be/st/ss/documents/ccssmathstandardaug2013.pdf>. The *Mathematics Framework* includes guidance that helps educators structure teaching of the state’s rigorous standards around “Big Ideas” that integrate, rather than isolate, kindergarten through grade twelve (K–12) mathematics concepts. More information about the *Mathematics Framework* is available on the California Department of Education (CDE) *Mathematics Framework* web page at <https://www.cde.ca.gov/ci/ma/cf/index.asp>. At the direction of the CDE and the California State Board of Education (SBE), in June 2024, ETS and Smarter Balanced began to examine the consistency between the Big Ideas of the *Mathematics Framework* and the Smarter Balanced Summative Assessment for Mathematics. Preliminary analysis indicates that the Big Ideas of the *Mathematics Framework* are well-supported in the Smarter Balanced Summative Assessment for Mathematics.

### **Background**

In July 2023, the SBE approved the *Mathematics Framework*. Grounded in California’s mathematics content standards, the *Mathematics Framework* guides how educators should translate the standards into instructional practice to improve outcomes for all students. The *Mathematics Framework* is designed to ensure that students have access to a wide range of opportunities, including pursuing science, technology, engineering, and mathematics (STEM) in college and career.

The *CA CCSSM*, adopted by the SBE in 2010 and updated in 2013, put forth the state’s vision for mathematics in K–12, mapping out what students should know and be able to do by the end of each grade level. The framework provides guidance for enacting the standards through curriculum and instructional approaches grounded in research that reflects best practices across the globe. The goals are to support multidimensional learning and to ensure equity and excellence in mathematics learning so all California students become powerful users of mathematics to better understand and positively impact the world—in their careers, in college, and in civic life.

The *Mathematics Framework* includes guidance to help educators structure the teaching of the state’s rigorous standards around Big Ideas that integrate, rather than isolate, K–12 mathematics concepts—a best practice in high-performing countries. Big ideas are central to the learning of mathematics, link numerous math understandings into a coherent whole, and provide focal points for students’ investigations. This approach encourages teachers to think about how the Big Ideas in mathematics connect both within and across grade levels in developmental progressions. It emphasizes development of the habits of mind and habits of interaction described in the *CA CSSM* Standards for Mathematical Practice, which describe the varieties of expertise that mathematics educators at all levels should seek to develop in their students—for example, persevering in problem-solving, explaining one’s thinking, and constructing arguments.

The CDE, together with ETS and Smarter Balanced, examined the consistency between the Big Ideas in the *Mathematics Framework* and the Smarter Balanced Summative Assessment for Mathematics. The purpose of this analysis is to confirm the consistency between the *Mathematics Framework* and mathematics assessment and provide the public with information on how well the Big Ideas are represented in the assessment. While the full report is not yet complete, preliminary analysis indicates that the Big Ideas in the *Mathematics Framework* are well supported in the Smarter Balanced Summative Assessment for Mathematics. An executive summary of the study is provided in Attachment 1. The complete report will be provided as part of a March 2025 SBE item.

## Attachment(s)

* Attachment 1: Executive Summary of the Report on *Advancing Excellence in Mathematics: Smarter Balanced Support of the Big Ideas in the California Mathematics Framework* (2 pages)

**Executive Summary of the Report on**   
***Advancing Excellence in Mathematics: Smarter Balanced Support of the Big Ideas in the California Mathematics Framework***

In June 2024, ETS and Smarter Balanced began conducting a study to examine the consistency between the Big Ideas in the *Mathematics Framework for California Public Schools* (*Mathematics Framework*) and the Smarter Balanced Summative Assessment for Mathematics. Specifically, the study analyzed: (1) the Smarter Balanced task models, which guide the development of assessment items by describing the item types tied to each target, and (2) the Summative Assessment item bank. The Smarter Balanced summative assessment blueprint, which outlines the number of items to be administered by claim and content category, served as a reference for this crosswalk study.

**Key Findings of Evaluation of Smarter Balanced Task Models**

Content experts from Smarter Balanced and ETS examined how well the Smarter Balanced task models meet three criteria that support the richness of tasks within the Big Ideas:

* **Data Reasoning:** Does the task model involve analyzing data?
* **Real-World Application:** Does the task model require that students solve a problem in a real-life situation?
* **Open Tasks:** Does the task model allow for open-ended responses?

For each criterion, task models were rated as None, Basic, Sufficient, or Robust.

The key findings for each criterion were:

* **Data Reasoning:**
  + Task models were rated “Robust” in all individual grades except grade four, where Data Reasoning received a “Sufficient” rating, highlighting that while students are often required to reason with data, there is an opportunity to provide additional supports for this area in grade four.
* **Real-World Application:**
  + Task models were rated “Robust” in all grades, showing strong integration of real-world problem-solving.
* **Open Tasks:**
  + Task models were rated “Robust” in every grade, indicating that students are required to generate open-ended responses involving written explanations and/or problem-solving strategies.

**Key Findings of Analysis of Smarter Balanced Item Bank**

Content experts from Smarter Balanced and ETS evaluated the Smarter Balanced assessment item bank in terms of how well the item bank is mapped to the Big Ideas and Content Connections of the *Mathematics Framework*. The strength of the match between the item bank and Big Ideas/Content Connections was rated as None, Limited, Partial, or Full.

**Key findings of the item bank analysis:**

* The items in the item bank aligned with each target and largely demonstrated a **full match** to the Big Ideas, reflecting a strong consistency with the core mathematical concepts of the *Mathematics Framework*.
* High school “Shapes in Structures” and “Fairness in Data” were the only areas that may require additional coverage.

**Conclusion**

Overall, the findings of this study highlight that the Big Ideas in the *Mathematics Framework* are consistent with key components of the Smarter Balanced Summative Assessment for Mathematics. By continuing to refine and expand upon the item bank and task models—particularly in the area of Shapes in Structures and Fairness in Data at the high school level, the Smarter Balanced Summative Assessment for Mathematics is well-positioned to meet the goals of the *Mathematics Framework*.