Item 2.A.2.

Mathematics Subject Matter Committee

November 14, 2019

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# Draft Curriculum Framework and Evaluation Criteria Committee Guidelines for the 2021 Revision of the *Mathematics Framework for California Public Schools: Kindergarten Through Grade Twelve*

The guidelines approved by the State Board of Education (SBE) will direct the work of the Mathematics Curriculum Framework and Evaluation Criteria Committee (CFCC). The guidelines are based on statutory requirements, feedback from our focus group meetings in August of 2019, student focus groups in September and October 2019, information provided by the Instructional Quality Commission and the State Board of Education, and public comment.

## In general, the revised California Mathematics Framework for Public Schools, Kindergarten through Grade Twelve (Mathematics Framework) shall

1. be aligned to the *California Common Core State Standards for Mathematics* (*CA CCSSM*) adopted by the SBE in 2010 and modified in 2013;
2. reflect the goal of achieving balance in mathematics instruction, including conceptual understanding, problem solving, and procedural fluency and how they are consistent with the *CA CCSSM* assessment specifications;
3. articulate a clear and concise narrative that gives guidance and serves the needs of different users, including specialists, administrators, and curriculum leaders, and that reflects current, confirmed research in mathematics;
4. be written in language that is inclusive and supportive of multiple users, single or multi-subject credentialed teachers, support staff, administrators, and community leaders while not exceeding 900 pages;
5. include support from and references to current research to guide student-centered learning, including strategies to support a growth mindset in mathematics;
6. include an overview explaining how the standards are organized with an explanation of the coding system for identifying standards;
7. support a progression of learning from transitional kindergarten through grade twelve that ensures all students can achieve college and career readiness;
8. include compelling language that underscores the value of balancing the mathematics content standards and the standards for mathematical practice;
9. provide guidance to help ensure equitable access to high quality mathematics instruction for all elementary, middle, and high school students in California; and
10. include a table of contents and glossary of critical terms.

## Additionally, the revised *Mathematics Framework* shall be explicit in its provision of

1. guidance ensuring access and equity, including research related to Universal Design for Learning, at each grade level;
2. examples of concrete, representational, and abstract models at each grade level;
3. specific guidance of developing domain-specific language and literacy skills;
4. content aligned with the California Assessment of Student Performance and Progress (CAASPP) System assessment specifications, including achievement level descriptors, and support resources for the Smarter Balanced Assessment Consortium;
5. strategies related to those included in the California Department of Education resources, including the English Learner (EL) Roadmap, the *English Language Arts/English Language Development Framework,* the *California* *English Language Development Standards*, and *Educating for Global Competency*, to support guidance and usability of the *Mathematics Framework*; and
6. connections to resources and associations with resources that support and illustrate the guidance in the framework, including graphics, tables, snapshots and vignettes aligned to the guidance in the *Mathematics Framework*, and provide links to those resources when necessary.

## The CFCC shall develop separate chapters on the instructional cycles for grade-level mathematics. These chapters should support planning for instruction and assessment to ensure equitable access and opportunity for all students they shall provide:

1. Guidance for planning instruction that includes
   1. explanations of the components of the content standards and Standards for Mathematical Practice (SMPs) and how they work together;
   2. examples of a variety of instructional and pedagogical approaches to mathematics teaching, including models and examples of what student learning looks like in different classroom settings, along with common misconceptions;
   3. guidelines to support the integration of the principles of Universal Design for Learning in mathematics instruction;
   4. resources that illustrate the connection between mathematics and other academic disciplines and the ways they support one another;
   5. examples of differentiated strategies in mathematics classrooms with students that display a wide range of talents, skills, needs and abilities;
   6. guidance on how to support students with gaps in their mathematical knowledge;
   7. examples to support the use of mathematical modeling strategies; and
   8. guidance on culturally and linguistically relevant pedagogy that supports the instructional needs of all students, including students who are EL, at-promise, Gifted And Talented Education (GATE)-identified, and students with disabilities.
2. Guidance for planning assessment, including
   1. discussion on approaches to measuring student learning, including strategies to support mastery–based approaches to assessment;
   2. the design and use of formative and summative assessments for continuous improvement, including a discussion of assessment strategies for the standards for mathematical practices;
   3. examples of multiple modes of assessment;
   4. how to use CAASPP summative assessment resources to support formative assessment goals and criteria;
   5. how to build and use product- and process-based rubrics; and
   6. references to and support from current research on effective assessment strategies for students who are recognized as ELs, at-promise, GATE-identified, and students with disabilities.

## The CFCC will address the issues related to mathematics instruction in grades eight and beyond, including

1. a clear statement that the *CA CCSSM* in kindergarten through grade eight represent a pathway to higher mathematics starting with either Algebra I or Integrated Mathematics I;
2. guidance concerning acceleration, compaction, and enrichment in the high school mathematics courses of study;
3. a discussion about how the *CA CCSSM* in grades six through eight may inform the description of an accelerated path to higher mathematics beginning with Algebra I or Integrated Math I in grade nine;
4. guidance on student readiness for Algebra I or Integrated Math I including assessment of prerequisite knowledge and skills and appropriate placement (not to supersede the math placement law Senate Bill [SB] 359); and
5. suggested courses for both the traditional (Algebra, Geometry, Algebra 2) and integrated (Integrated Math I, II, III) high school mathematics pathways. The content of these courses shall be the same regardless of the grade level at which they are taught and applicable to and supportive of non-traditional instruction and learning.

## The CFCC shall include ample concepts and strategies throughout the grade-level chapters to support universal access and ensure access, equity, and inclusion for all students. The guidance will

1. outline current research to support planning and implementation of the principles of Universal Design for Learning as they apply to mathematics learning;
2. provide examples to support professional learning in topics for universal access in mathematics and include content for administrator- and teacher-led facilitation; and
3. include specific criteria to help educators identify and understand elements of high-quality mathematics instruction.

## The CFCC shall update and revise the chapter on instructional materials support. The revision shall

1. outline instructional materials’ alignment to the state-adopted mathematics standards at each grade level or span and current research in mathematics instruction;
2. stipulate the requirements for instructional materials consistency with the *Mathematics Framework* and *CA CCSSM*;
3. provide suggestions for instructional support for students who are ELs, at-promise, GATE-identified, and students with disabilities;
4. request that publishers of instructional materials provide assessment practices (e.g., entry-level, diagnostic, formative, interim, skill-based and summative) at each grade level necessary to prepare all students for success in higher mathematics instruction;
5. include images that are age appropriate and depict the diversity of California students, and be affirmatively inclusive;
6. stipulate that the standards being taught must be clearly displayed in the teacher materials;
7. detail such provision for instructional materials and make suggestion of pacing or scope and sequence of instruction;
8. clarify suggestions for instructional materials and the provision for differentiated instruction in the teacher materials; and
9. outline ways instructional resources must show connections to state adopted standards in other subjects in the teacher materials and provide examples of interdisciplinary instruction.

## The revised *Mathematics Framework* will satisfy statutory requirements.

The *Mathematics Framework* must reflect changes in statute affecting the mathematics curriculum and instructional materials that have been enacted since the last revision of the *Mathematics Framework*. This includes but is not limited to the following:

1. The California Mathematics Placement Act of 2015, *Education Code* (*EC*) Section 51224.7, states that the bill would require governing boards or bodies of local educational agencies, as defined, that serve pupils entering grade nine and that have not adopted a fair, objective, and transparent mathematics placement policy as of January 1, 2016, to, before the beginning of the 2016–17 school year, develop and adopt, in a regularly scheduled public meeting, a fair, objective, and transparent mathematics placement policy for pupils entering grade nine with specified elements, and would authorize governing boards or bodies of local educational agencies serving pupils who are transitioning between elementary and middle school or elementary and junior high school to develop and implement a mathematics placement policy for these pupils, as applicable, with these specified elements.
2. Algebra instruction statute, Assembly Bill (AB) 220, *EC* 51224.5, states this bill would require, before a pupil receives a diploma of graduation from high school, that a pupil complete at least one course, or a combination of the two courses required for graduation, that meets or exceeds the rigor of Algebra I or Mathematics I, that is aligned to the content standards adopted by the state board. The bill would provide that a pupil who completes coursework that meets or exceeds the content standards for Algebra I adopted by the state board shall be deemed to have satisfied the graduation requirement. The bill would also exempt from the Algebra I or Mathematics I graduation requirement those pupils who, before enrollment in grade nine, completed a course in Algebra I or Mathematics I, or mathematics courses of equal rigor, that are aligned to the content standards adopted by the state board.
3. Environmental Education Principles, SB 720, *EC* 51227, which states that the Instructional Quality Commission shall ensure that the environmental principles and concepts developed pursuant to Section 71301 of the Public Resources Code are integrated into the content standards and curriculum frameworks in the subjects of English language arts, science, history-social science, health, and, to the extent practicable, mathematics whenever those standards and frameworks are revised.
4. Financial literacy, AB 166, *EC* 51284, which states that, concurrently with but not prior to, the next revision of textbooks or curriculum frameworks in the social sciences, health, and mathematics curricula, the state board shall ensure that these academic areas integrate components of human growth, human development, and human contribution to society, across the life course, and also financial literacy, including, but not limited to, budgeting and managing credit, student loans, consumer debt, and identity theft security.

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