

To: Instructional Quality Commission  
1430 N Street, Room 3207  
Sacramento, CA 95814  
Sent via email to [mathframework@cde.ca.gov](mailto:mathframework@cde.ca.gov)

Date: May 16, 2022

**RE: Feedback on the 2nd Draft of the Mathematics Framework**

Dear Members of the Instructional Quality Commission:

We are members of the Curriculum and Instruction Steering Committee (CISC) Mathematics Subcommittee of the California County Superintendents' Educational Services Association (CCSESA). As mathematics education specialists working to support excellence, equity, and quality mathematics programs within 58 diverse counties, we are deeply invested in the purpose and potential of the Mathematics Framework as a guiding document to support districts, schools, and educators individually and collectively. The framework revision cycle offers mathematics educators across California the opportunity to re-engage in meaningful conversations, to question assumptions, to analyze programs and practices, and to provide input and feedback. Thank you for this opportunity.

As a committee, we have engaged with the leaders in California Department of Education's Curriculum Frameworks and Instructional Resources Division (CDE CFIRD) and with the lead writers of the Mathematics Framework to understand the intent, expectations, and approach.

Within our 11 service regions and with our partners, the California Mathematics Council (CMC), the California Mathematics Project (CMP), and the California Partnership for Math and Science Education (CAPMSE), we have been hosting virtual gatherings of educators and mathematicians from TK-12 and Institutes of Higher Education (IHE) to discuss the second draft of the framework and to gather input, feedback, and public comment. Our various afternoon sessions have focused on different chapters and features of the current draft of the framework. While you will receive additional feedback and comments from individuals and networks who participated in these gatherings, we are incorporating in this letter some common themes that emerged from our reviews.

We would like to express our support and gratitude for several structural elements of the framework and for several beautifully woven concepts that communicate a vision for school mathematics in California. We have identified five themes and provide below some specific feedback as well as some concrete suggestions on how to strengthen or refine them.

Those themes include:

1. Equity: Creating opportunities that foster mathematical agency and identity for ALL students
2. Reimagining focus, coherence, and rigor
3. The Framework as a support for educators
4. Dismantling fundamental hierarchies in mathematics education and ending exclusionary practices
5. Consistency in language, organization, and formatting

## 1. Equity: Creating opportunities that foster mathematical agency and identity for ALL students

During the first public comment period, we raised several considerations for refinement related to equity. We note and appreciate the following changes, which address those considerations and enhance this draft:

- In [chapter 2](#), the addition of [pages 55-56, lines 923-950](#) and additional language in the conclusion strengthened the affirmation of diverse student identities, culturally responsive teaching, and asset-based instructional approaches, creating a more consistent and coherent message.
- The revision and clarification of the definition of "all students" in [chapter 6, page 14, lines 352-354](#) strengthened the promotion of equity and helped to address inequities that result from exclusionary policies and practices.
- The inclusion of research and research-based practices that recognize, acknowledge, and provide support for the range of disabilities, while lifting up the assets that students with disabilities bring to a mathematics community through different ways of knowing, seeing, and doing mathematics. The reference to Rachel Lambert's work, ([chapter 2, page 16, lines 261-277](#)) provides a clear rationale for designing inclusive classroom experiences. The vignette (in [chapter 2, pages 5-15, lines 116-255](#)) with Darren and Monique, of different abilities and the section on multidimensional tasks ([chapter 2, pages 16-17, lines 256-286](#)) provide examples of what inclusive mathematics learning looks like in practice.
- The explicit reference to Universal Design for Learning, (in [chapter 2, page 3, lines 46-49](#); [pages 30-32, lines 478-494](#); [page 33, lines 517-528](#); [page 33, lines 533-539](#)), gives guidance for redesigning our current practices to promote greater inclusion through an asset-framed lens.

In response to this second draft we suggest three additional considerations related to equity:

- Please consider adding the definition of "all students" to [chapter 2, page 2, line 22](#) as well.
- Use consistent language and terms throughout the framework. Specifically, [chapter 2, page 2, line 11](#) calls out "Five Components of Equitable and Engaging Teaching for All Students", while [chapter 10, page 3, lines 56-67](#) uses the title "Five Central Themes of Instruction." We suggest using "Five Components of Equitable and Engaging Teaching for All Students" in both sections.
- Link Linda Darling-Hammond's framework referenced in [chapter 2](#) to its mention in [chapter 10, page 3, line 63](#).

## 2. Reimagining Focus, Coherence, and Rigor

We appreciate new descriptions, details, and references that help to communicate the relationship among the Drivers of Investigation, Content Connections, and Standards for Mathematical Practice. The second draft was strengthened by:

- The addition of swirls to the diagram, a descriptive table for the SMP-CC-DI ([chapter 1, page 19](#)), clarity to SMP-CC-DI ([page 19, lines 453-456](#)), and references to SMPs, CCs, and DIs. The example in [chapter 2, page 61, line 1091](#) provides additional coherence.
- The inclusion of elements from the *Digital Learning and Standards Integration Guide*, particularly in [Chapters 6, 7, and Appendix A](#).
- The addition of references to the University of Arizona Progressions documents.
- The more comprehensive explanation of rigor ([chapter 1, page 31, lines 723-730](#)) and a linked reference for focus, coherence, and rigor ([chapter 10, pages 44-45, lines 1093-1104](#)) is helpful.

## 3. The Framework as a Support for Educators

The second draft builds upon the first draft to support educators in implementing the CCSSM. We acknowledge and appreciate these specific revisions and would like to see each of them in the final Math Framework:

- Additional attention to clarifying the meaning of "Big Ideas" by addressing Big Ideas (in [chapter 1, page 15, lines 362-380](#)), the glossary (in [chapter 14, page 4, line 53-55](#)), references to multidimensional mathematics and an example in [chapter 1](#), the vignette in [chapter 2](#), and the addition of tables from the DSLG in [chapters 6, 7 and Appendix A](#).
- This draft begins to incorporate the principles of Universal Design for Learning (UDL) by blending UDL into multidimensional mathematics, mentioned in [chapter 2 \(page 16\)](#), by referencing the UDL Framework on [page 31](#),

line 483 during discussion of open tasks, and by adding a vignette about different learning styles in chapter 5, pages 5-16.

- The inclusion of NCTM's Effective Teaching Practices: *Teacher and Student Actions* provides a meaningful lens for viewing instruction.
- The grade-band chapters have been enhanced in this draft. Chapter 7, page 4, line 89 has the introduction and connection to the SMPs, CCs and DIs. It establishes the why and connects to chapters 1 and 2. Chapter 8, page 16, line 397 includes the 5 Components of Equitable and Engaging Teaching for All Students.
- Instructional examples have been revised to align with the grade bands they represent. (including the removal of references to the 5th grade class on pages 27 - 30).
- We appreciate the inclusion of Talk Moves (chapter 2, page 36, lines 597-616).
- The connections and resonances among chapters 1 and 2 and the UDL and TRU frameworks (chapter 1, page 7, lines 168-174), NGSS (chapter 1, page 20, lines 463-464) and TPACK (chapter 11, pages 3-4) acknowledge and support the authentic complexity of teaching mathematics.
- Chapter 10 highlights the importance of sustained, long-term, collaboration in professional learning.
- Inclusion of Lesson Study as an effective model for professional learning. Chapter 10, lines 636-639 provide a very helpful description and purpose of lesson study. We appreciate the note that Lesson Study is not about a "Perfect Lesson Plan," rather it is about educators collectively learning about students, about math, and about teacher moves to enhance and increase student learning.

To build a clearer understanding within the context of supporting framework implementation with educators we suggest:

- Add one or more *non-examples* of "Big Ideas" to provide further insight into the concept in the context of this framework or consider adding the process of how the Big Ideas came to be similar to what is shared in the Digital Learning Integration & Standards Guidance webinar with Jo Boaler & Cathy Williams - from minutes 19:21-21:00.
- Include a table of NCTM's 8 Effective Teaching Practices.
- Additional links to include:
  - A hyperlink to the Progressions in chapter 6, on page 17
  - SFUSD visual models in chapter 3 or in chapter 6, page 88, line 1886 during discussion of visual representation.
- Add the same introductory language on the SMPs, CCs, and DIs (as in chapter 7) to chapter 6 and chapter 8
- Include grade band specific standards in addition to the domain referenced in chapter 7, page 27, line 451. Chapter 8, lines 41-51 refers to higher mathematics, we suggest referring to high school standards instead.
- Include Rachel Lambert's 2021 graphic *Design Principles of UDL Math*, which illustrates and expands upon specialized considerations for inclusive design in the mathematics classroom.
- Reference *Revising Word Problems to Address UDL and Standards* (Brown, Bostic, Folger, Folger, Hicks & Knafziger, Learning & Teaching, April 2022, Vol. 115, Issue 4, NCTM) as a model for accessible instructional design and implementation by modifying a rich task through the lens of universal design.
- Include a practical example for universally designing learning opportunities within an existing vignette, beginning with examining barriers within the three UDL principles and investigating opportunities to overcome those barriers.
- Clarify that professional learning experiences do not have to include all seven elements listed in chapter 10, lines 399-407, during a single session. Please state that "These elements, described below, include a focus on some of the following."
- In chapter 10, provide guidance for measuring the effectiveness of professional learning.

#### 4. Dismantling Fundamental Hierarchies in Mathematics Education and Ending Exclusionary Practices

Our CISC Mathematics Subcommittee strongly supports the position of this framework that mathematics education in California should serve as a launchpad rather than a gatekeeper. Furthermore, we agree with the document's assertion that ALL students are capable of making important contributions to their communities and to civic discourse through the lens of mathematics and can achieve the skills to do so at the highest levels. The framework is opening dialogue and collaboration among mathematics educators in all segments in California: TK-12, CA Community Colleges, CSUs, UCs, and

private colleges and universities. Our collaborations demonstrate that mathematics educators across all segments are committed to changing the structural, instructional, and cultural factors that have led to exclusionary practices and maintained unproductive hierarchies in mathematics.

The 2nd draft is strengthened by the inclusion of the following

- NCTM's Principles to Action table, ([chapter 2, page 22-23](#))
- The ideas of *Mathematics as Gatekeeper or Launchpad?* in [chapter 6, page 4, line 89-91](#), and [chapter 9](#)
- An updated visual of pathway options in [chapter 8, page 35, line 870](#)
- Addition of the SMP, CC, and DI table ([chapter 1, page 19](#))
- The *History of Tracking* information in [chapter 9](#)
- Alternatives to tracking in [chapter 9](#)
- The Mathematics Placement Act and its specific requirements, ([chapter 9, pages 22-23, lines 538-557](#))

We suggest:

- Include an example of growth vs. fixed mindset in the introductions for chapters 6-8
- Add the updated pathways visual to the [beginning of Appendix A](#).
- In chapter 9, add excerpts of the legislative declarations to clarify the purpose of the Mathematics Placement Act in providing equitable access to higher level mathematics for students of color.
  - SB359 Section 1 (c) The most egregious examples of mathematics misplacement occur with successful pupils and, disproportionately, with successful pupils of color.
  - (d) Mathematics misplacement has far-reaching impacts on a pupil's confidence, general knowledge of mathematical concepts, and high school experience, and may also impact the college career opportunities available to the pupil.
  - (e) New research shows that it is less common for pupils of color, even high-achieving pupils of color, to reach calculus by grade 12 compared to their white and Asian peers.
- Add the same information about the Mathematics Placement Act to [chapter 10](#) to ensure that school and district leaders have access as well.
- Add a clearer definition of "thoughtful grouping" or change the term to "broadening grouping practices" ([chapter 9, pages 7-8, lines 207-211](#)). The term "thoughtful grouping" might be misinterpreted to mean "ability grouping," homogeneous classes, or long-term tracking.
- Make explicit that the variety of learning opportunities discussed in [chapter 9](#), including acceleration, should **enhance, not supplant or reduce**, access to challenging content. Emphasize, perhaps in a call-out or box, "The goal is to expand access to rigorous mathematics for all students, so that each experiences the joy and excitement of well taught mathematics..."
- We appreciate providing a year 3 or year 4 option for a Data Science course. However, we suggest omitting the suggestion of a "Data Science Pathway" as students may not realize that they will still need Calculus to be prepared for a Data Science major at the university level. A Data Science pathway does not, in and of itself, prepare a student for a Data Science major.

The following were not addressed in the 2nd draft. Please consider these suggestions again as they expound upon the role administrators play in supporting mathematics teaching and learning through not only instructional, but also through structural, leadership.

- In [chapter 10](#), stress the importance of administrators looking critically at program data to determine how systems are supporting or inhibiting access to equitable mathematics. Include transcript analysis and course-taking patterns correlated with metrics of achievement as means to surface inequitable systemic outcomes.
- Also in [chapter 10](#), address course teaching assignments, exclusion of special educators in mathematics Professional Learning Communities, counseling practices, and other messages of hierarchy and exclusion that undermine equity. A callout box or table will provide additional frames for leaders to consider how practices and policies support or inhibit access.
- Adding these lenses will also support a statement in this chapter that makes it clear that teachers are not solely responsible for building an equitable mathematics program TK-12.

## 5. Consistency in Language, Organization, and Formatting

We suggest:

- Separate the TK-5 chapters into two grade-band chapters (i.e., TK-2 and 3-5) to make the text and reading more manageable.
- When there is a live link for a long description of a graphic (e.g., [chapter 1, page 20, Line 459](#); [chapter 10, page 30, line 768, etc.](#)) it is helpful if one is accessing a digital version of the framework. In a printed and sometimes PDF version, the link is no longer live and becomes unhelpful. Consider referencing by page number and line number(s) also.
- Regarding vignettes:
  - Provide all vignettes in a separate appendix with a table of contents and/or a matrix table grade level/span, SMP, CC, DI and Content Standard(s)
  - For each vignette and snapshot provided, label each in a consistent manner (include the standards, CCs and DIs)
  - Make the formatting of each vignette consistent throughout the entire document ([chapter 7, pages 54-55, Lines 1110-1115](#))
  - For resources listed within each vignette, provide a hyperlink to the resource. For example, the vignette in [chapter 2, lines 123-125](#) references a specific “diagnostic assessment” but no link is provided
  - Adding an example of how the SMPs-CCs-DIs are connected or a link to where it is referenced in a vignette or snapshot.
- Regarding the SMP, CC, and DI diagram in [chapter 1, page 20, line 458](#): [Figure 1.1](#)
  - Create a meaningful title for the graphic, perhaps the “Why, How, and What of Mathematics”
  - Label the axes of the graph by category of SMPs, CC and DIs
  - Add Why, How, and What to the DI, SMP and CC diagram
- Use consistent citations when referencing the University of Arizona Progressions document. (examples: [chapter 6, page 17, line 437](#); [page 34, line 814](#); [page 55, line 1158](#); [page 101, line 2121](#))

Thank you for considering these suggestions and for your incredible work on this framework.

Sincerely,



Ellen Barger  
Assistant Superintendent, Curriculum & Instruction  
Santa Barbara County Education Office  
and Chair, CISC Mathematics Subcommittee

## Members of the CISC Mathematics Subcommittee

Name	Title	County Office/ Organization	Region
Kim Ferguson	Learning Support Specialist-Math	Lake County Office of Education	1
Rebecca Lewis	Executive Director Professional Learning & Leadership Support Services	Shasta County Office of Education	2
Sherry Rodgers	Math and STEM Coordinator	Shasta County Office of Education	2
Marian Murphy-Shaw	Educational Services Director	Siskiyou County Office of Education	2
Dave Chun	Director, K-12 Mathematics	Sacramento County Office of Education	3
Heather Parker	Professional Development Coordinator	Sutter County Superintendent of Schools	3
Dawn O'Connor	Executive Director, Core Learning	Alameda County Office of Education	4
Christen Northrop	Mathematics Coordinator	Contra Costa County Office of Education	4
Kim Bambao	Mathematics Coordinator	San Mateo County Office of Education	4
Jenny Cheng	Mathematics Coordinator	Santa Clara County Office of Education	5
Kirsten Sarginger	Mathematics Coordinator	Santa Clara County Office of Education	5
Ma Bernadette Andres-Salgarino	Assistant Director	Santa Clara County Office of Education	5
Zenaida Gallardo	Math Specialist, TK-8th	Kern County Superintendent of Schools	6
Debbie Williams	Math Coordinator	San Joaquin County Office of Education	6
Kelly Russell	Math Coordinator	San Joaquin County Office of Education	6
Satinder Singh	Director of Mathematics	San Joaquin County Office of Education	6
Jamie Garner	Director I, Math	Stanislaus County Office of Education	6
Stacie Doss	Mathematics Project Coordinator	Stanislaus County Office of Education	6
Kia Barrieau	Coordinator of Mathematics & Special Projects	Tuolumne County Superintendent of Schools	6
Paula Heupel	Equity and Innovation	Merced County Office of Education	7
Joseph Lamb	Mathematics Staff Development & Curriculum Specialist	Tulare County Office of Education	7
Kim Webb	Mathematics Staff Development & Curriculum Specialist	Tulare County Office of Education	7
Claudia Maldonado	Math Coordinator	Kern County Superintendent of Schools	8
Cole Sampson	Director- Curriculum, Instruction, and Accountability	Kern County Superintendent of Schools	8
Hilda Wright	Math Coordinator	Kern County Superintendent of Schools	8
Joaquin Castillo	Program Specialist - Mathematics	Kern County Superintendent of Schools	8
Kyle Atkin	Math Coordinator	Kern County Superintendent of Schools	8
Joe Koski	Executive Director, Educational Support Services	San Luis Obispo County Office of Education	8
Melanie Crawford	Director, Continuous Improvement and Support	San Luis Obispo County Office of Education	8
Lauren Aranguren	Director, Equitable Learning Systems	Santa Barbara County Education Office	8
Dr. Cesar Morales	County Superintendent of Schools	Ventura County Office of Education	8

<b>Name</b>	<b>Title</b>	<b>County Office/ Organization</b>	<b>Region</b>
Lisa Salas Brown	Associate Superintendent	Ventura County Office of Education	8
Vicki Vierra	Mathematics Coordinator, TK-12	Ventura County Office of Education	8
Dennis A. Regus	Administrator	Riverside County Office of Education	10
Diana Ceja	Administrator	Riverside County Office of Education	10
Catherine A. Vittorio	Mathematics Curriculum Coordinator, PreK-8	San Bernardino County Superintendent of Schools	10
Melanie Janzen	Mathematics Curriculum Coordinator, 6-12	San Bernardino County Superintendent of Schools	10
Kyndall Brown	Executive Director	California Mathematics Project	
Frederick Uy	Director	CSU Office of the Chancellor	