May 8, 2020

Instructional Quality Commission
c/o California Department of Education
Curriculum Frameworks & Instructional Resources Division
1430 N Street, Suite 3207
Sacramento, CA 95814

Public Comments re: Item 5B: 2021 Revision of the Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve

Dear Instructional Quality Commission Members,

As leaders of nine of California's educational advocacy organizations, we thank you for your commitment to advancing high-quality instructional guidance and resources for California's students. We are writing to you about the 2021 Revision of the *Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve* (Mathematics Framework). We understand that the IQC has provided Mathematics Framework Guidelines to direct the work of the Mathematics Curriculum Framework and Evaluation Criteria Committee (CFCC). We commend the references to equity and access within the Guidelines, specifically the following:

1. ***In general, the revised California Mathematics Framework for Public Schools, Kindergarten through Grade Twelve (Mathematics Framework) shall***
    I. provide guidance to help ensure equitable access to high-quality mathematics instruction for all elementary, middle, and high school students in California; and

2. ***Additionally, the revised Mathematics Framework shall be explicit in its provision of***
    C. guidance ensuring access and equity, including research related to Universal Design for Learning;
    G. 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

3. ***The CFCC shall develop 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:***
    A. Guidance for planning instruction that includes
        - *guidelines to support the integration of the principles of Universal Design for Learning in first instruction for all students, including multiple means of representation (giving learners various ways of acquiring information and knowledge); multiple means of expression (providing learners alternatives for demonstrating what they know); and multiple means of engagement (tapping into learners' interests, offering appropriate challenges, and increasing motivation);*

- *examples of differentiated strategies in mathematics classrooms with students that display a wide range of talents, skills, needs and abilities;*
- *guidance on culturally and linguistically relevant pedagogy that supports the instructional needs of each student.*

B. *Guidance for planning assessment, including*
   - *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*

4. ***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***
   A. *outline current research to support planning and implementation of the principles of Universal Design for Learning as they apply to mathematics learning;*
   B. *provide examples to support professional learning in topics for universal access in mathematics and include content for administrator- and teacher-led facilitation;*

5. ***The CFCC shall update and revise the chapter on instructional materials support. The revision shall***
   A. *provide suggestions for instructional support for students who are ELs, at-promise, GATE-identified, and students with disabilities;*

While we believe that these Guidelines are strong, we are writing to suggest two primary recommendations to strengthen the equity principles in the Framework: 1) include an additional chapter dedicated to equity and access while continuing to include principles and practices of equity and access within each chapter, and 2) ensure that assets-oriented approaches are incorporated throughout the Mathematics Framework and within the chapter dedicated to equity and access.

Chapter on Equity and Access

We recently received a draft list of chapters for the 2021 Mathematics Framework and noticed that the list does not include a chapter specific to Universal Access as the 2013 Mathematics Framework did. It is our understanding that the current plan is for equity and access to be primarily addressed in the chapter on pedagogy and throughout the other chapters. While we understand that addressing equity and access within a chapter on pedagogy is important, we also think that this would be a missed opportunity given that issues of equity and access extend beyond pedagogical practices. **We urge the IQC to reconsider this decision and guide the CFCC to include a chapter dedicated to equity and access *and* continue to include principles and practices of equity and access within each other chapter of the Mathematics Framework as well.**

California continues to have wide and persistent achievement gaps on the math CAASPP for students of color, students from low-income households, English learners, and students with disabilities. For example, in 2018-19, 1 in 10 English learners met math standards compared to 4 in 10 English Only students. And less than 3 in 10 low-income students met math standards compared to nearly 6 in 10 non-low income students. Research indicates that the most effective approach to improving outcomes for all students while closing gaps includes practices and interventions targeted to the highest level of

needs.[1] Targeted practices such as differentiation, universal design for learning, and scaffolding require specific implementation guidance for various student groups. We believe that the complexity and importance of these practices merit a dedicated chapter titled "Universal Access" (as it was in the 2013 Mathematics Framework) or "Equity and Access."

True equity and access require more than pedagogical practices; a holistic approach must address instructional, structural, and cultural considerations. While it is essential to center equity in pedagogy, practitioners are also asking for guidance on eliminating structural barriers to access and develop equitable math programs. This guidance may include equitable course placement policies, program planning, articulation between and across systems and institutions, and equitable access to technology-based resources. Clearly, the current COVID-19 crisis has surfaced the need for all schools and districts to have a plan for distance learning that ensures equitable access to high-quality instruction and culturally responsive learning resources for all students. A chapter dedicated to equity and access is the required and the most logical place for guidance on culturally and linguistically responsive practices and structures to support equitable access to high-quality mathematics instruction.

Once the Mathematics Framework is written, many practitioners will access the content based on the chapter titles, rather than reading the framework in its entirety. It will be difficult for practitioners looking for guidance on how to design their instruction to meet the learning needs of their particular students to find this guidance under the current plan to embed the guidance within the other chapters. For ease of implementation, we recommend that there be both a dedicated chapter for equity and access, as well as clearly labeled sections dedicated to equity and access within each chapter.

Assets-Oriented Approaches

In addition, we encourage the CFCC and IQC **to ensure that assets-oriented approaches are incorporated throughout the Framework and within the chapter dedicated to equity and access.** As the English Learner Roadmap states in principle one, "The languages and cultures English learners bring to their education are assets for their own learning and are important contributions to learning communities." For English learners specifically, we encourage the chapters to include approaches that support multilingual programs and use of student's home language to support the learning of math concepts. Moreover, these assets-oriented approaches can also apply to all students in how the cultures and experiences that they bring with them to school are leveraged to build connections to the content.

Again, we ask the IQC to provide guidance to the CFCC to **include a chapter dedicated to equity and access and incorporate principles and practices of equity and access, including assets-oriented approaches, within each chapter of the Mathematics Framework as well.** We share in your goal of ensuring that each and every student has access to a high-quality and affirming math learning experience. The importance of providing clear guidance for ensuring equitable access and success has never been more apparent than today as schools and educators are striving to respond to the COVID-19 disruption in instruction.

We look forward to continuing to engage in the Mathematics Framework Revision process by attending the meetings of the CFCC and by providing public comment to support the effective inclusion of principles and practices to advance math equity and access. Please feel free to contact us directly if you

[1] Institute of Education Sciences. *Assisting Students Struggling with Mathematics: Response to Intervention (RtI) for Elementary and Middle Schools.* https://ies.ed.gov/ncee/wwc/Docs/PracticeGuide/rti_math_pg_042109.pdf

have any questions or would like additional information or resources to assist you in your very important work of guiding the framework revision process.

Sincerely,

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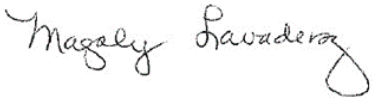

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June 19, 2020

Mathematics Curriculum Framework and Evaluation Criteria Committee
c/o California Department of Education Curriculum
Frameworks & Instructional Resources Division
1430 N Street, Suite 3207 Sacramento, CA 95814

Dear Mathematics Curriculum Framework and Evaluation Criteria (CFCC) Members,

We thank you for the opportunity to comment on the 2021 Revision of the *Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve* (Mathematics Framework). As the leaders of ten California education advocacy and research organizations, and county offices of education, we are dedicated to the goal of ensuring that principles and practices of equity and access are incorporated within each chapter of the Mathematics Framework -- particularly for English learners.

In our review of chapters 3, 4, 5, and 10 that are currently under consideration by the committee, we appreciate a number of elements that are infused throughout. The Mathematics Framework language represents a clear move toward collaborative learning that reflects today's standards and the reality of the world in which students will learn and work. These chapters also reflect language around the importance of student-driven discussion that will support students to deepen their understanding of mathematical concepts and their real-world applications. Finally, there is an acknowledgement that there are different ways to assess knowledge and student understanding.

However, we believe there is a real opportunity and need to centralize equity in the Mathematics Frameworks, by ensuring that pedagogical *and* structural equity and access issues are addressed and are easily accessible to readers. In addition to requesting that a stand-alone chapter focused on equity be part of the Mathematics Framework, we offer our recommendations for strengthening chapters 3, 4, 5, and 10 with a focus on equity and access, including chapter-specific examples.

Strengthening Equity, Access, and Assets-Orientation Across Chapters

Inclusion of Aligned ELD Standards

We see no evidence of alignment of the Mathematics standards with the English Language Development (ELD) standards, despite the fact that Mathematics and ELD standards were aligned per the passage of AB 899 (2013). In fact, the ELD standards are not currently mentioned in any of these four chapters. We recommend that the committee review WestEd's December 2015 report produced for the California Department of Education, *Integrating the CA ELD Standards into K–12 Mathematics and Science Teaching and Learning*, which offers helpful guidance for implementing Designated *and* Integrated ELD in conjunction with math standards.

For example, we recommend placing links to the aligned ELD standards next to the math

standards listed throughout the Mathematics Framework, which are already identified in the WestEd report. Clearly articulating this alignment in the Mathematics Framework will save educators, curriculum developers, and other users time and effort and ensure that supplementary documents do not have to be produced down the line, as they were with the 2013 Mathematics Framework and the 2016 Science framework.

Equity and Considerations for Specific Student Groups
While we appreciate the focus on all grade levels, we believe the Mathematics Framework needs to also identify the needs of all learners. There is no mention of equity or the need to support specific student groups within the chapters (such as English learners, students in multilingual programs, students with disabilities, and other students who have been historically disadvantaged by our education systems). As currently written, the snapshots/vignettes assume that all students are already fluent in English and on grade level. Considerations for English learners and other student groups should be woven into these examples in order to advance equitable learning opportunities and meet students at their current academic performance levels.

Cultural Relevance
We would like to see explicit examples of cultural relevance and responsiveness woven into the Mathematics Framework. It is important for these examples within each chapter to be asset-based by focusing on students' varied experiences as a way to make math relevant to their lives. Specifically, we recommend adding examples that explain how math is viewed in different cultures and the contributions of different peoples to the advancement of mathematics knowledge. We would also welcome expanding on the purpose of learning mathematics to include understanding and critiquing the world through problem-solving and examples of how math has been or can be used to take actions against inequities.

Chapter-Specific Examples
In addition to our general comments above, we would like to offer some specific suggestions that can be integrated into the content of the chapters currently under consideration by the committee. While these comments are not exhaustive, we hope they will serve as helpful examples for how to address the above considerations.

Chapter 3: Number Sense
Page 12, line 283 -- "Number talks are short discussions in which students solve a math problem mentally, share their strategies aloud...")): This section should reference how to build language and scaffold supports for English learners. The reference to individual students thinking about their solutions and presenting to the class may feel intimidating to a second language learner; rather than just individual thought and presentations, one modification might be suggesting that students work in pairs or triads to practice the language needed to explain their reasoning. Another might be to allow students to work in small groups using their home language and/or with a bilingual student as a member of the group to serve as a language broker. This modification would support the development of language while concentrating on content and presentation.

Page 25, line 519 -- "Number talks Grades 3-5": Number talks assume the students have a high degree of English language proficiency. Teachers should identify the language functions needed to participate in this process and integrate language development along with the problem-solving process as part of an integrated ELD delivery. If a student does not volunteer to give an explanation, that does not necessarily signify that they don't understand the concept -- rather, it may mean that they do not have the language to express their thought process. Using Designated ELD to have students practice using math discourse to explain their thoughts is another scaffold that would be helpful with other examples in the chapter.

Chapter 4: Exploring, Discovering, and Reasoning With and About Mathematics

Page 8, line 209 -- "Bringing the Mathematical Practices to Life": This section should include an explicit connection to how classroom structures -- including elements such as math discourse, collaborative activities, and number talks -- can be used to support English learners, and how these elements connect to the ELD standards (for inclusion in both Integrated and Designated ELD).

A snapshot focused on Integrated and Designated ELD would be helpful to include to align with Standards for Mathematical Practice (SMP) 3, *Construct viable arguments and critique the reasoning of others.* Teachers need to incorporate scaffolds in their lessons to assist students with the language demands of constructing viable arguments and the ability to orally critique the thinking of others. Integrated and Designated ELD could be woven into the existing First Grade snapshot on page 11 titled *Number Talks for Reasoning*, the Grade Seven snapshot titled *Estimating using structure* on page 14 which provides an example of number talks, and the High School snapshot on page 28 titled *Number string on an open number line,* which features math talks.

Chapter 5: Data Science

Whole chapter: This chapter would benefit from clear language about data science learning being fundamental for helping students understand critical, real-world issues of equity and justice. In practice, this means students are learning data science concepts and have access to data that speak to relevant issues in culturally responsive ways. There is also an opportunity throughout to emphasize the importance of ensuring that more students, particularly English learners, have access to rigorous data science courses that will be valuable and supportive of students pursuing educational opportunities beyond K-12.

Page 3, line 75 -- "Students should work with real data, at least some of which should come from their own communities": This language acknowledges the importance of learning to be contextualized and relevant to the lives of students. However, there is an opportunity here to more specifically articulate that data and examples should be culturally relevant and reflective of the diverse experiences of students across California.

Page 5, line 147 -- "Transitioning from Pre-K": This section acknowledges the important role that language plays at an early age. There is an opportunity to build upon this by explicitly stating the language assets that dual language learners bring with them into the classroom and identifying opportunities to capitalize on those assets for academic and linguistic advancement.

Chapter 10: Assessment in the 21st Century

Whole chapter: Consider adding a specific section on assessment considerations for English learners and students in multilingual programs. The chapter should discuss the importance of appropriate assessment design and placement to ensure that all students, including English learners, have equal access to rigorous coursework. Issues with grading could also be addressed more directly given equity implications, such as access to rigorous coursework.

Pages 2-4 -- "Issues with Traditional Assessment": This section provides a great discussion on test anxiety, citing research on its impact on girls. In addtiion, there should be relevant research included that also applies to other student groups, such as on stereotype threat. Issues of cultural competency and language considerations in assessments should also be explicitly addressed.

Pages 5-20 -- "Formative Assessment": The discussion of formative assessments on page 5 offers another opportunity to discuss cultural relevance and language access in assessment design, including the opportunity to assess in the student's home language. Assessment options for students in dual language programs should also be included. The example of formative assessment lessons (starting on page 6) should also include examples of assessments and modifications for English learners. Further, while the section on "Self and Peer Assessment" on page 15 is a helpful addition, it would benefit from explicitly stating the benefit to language development and discussing considerations for pairing students at different English proficiency levels.

Pages 20-25 -- "Summative Assessment": We appreciate the language on "Retaking Assignments and Tests" on page 22 as these options provide a better opportunity for students to show what they have learned. This section can be strengthened with more information and guidance for teachers on how to do this and tying it to issues of testing anxiety and stereotype threat. The "Portfolios" section on page 23 should mention the option for students in multilingual settings to demonstrate knowledge of math concepts through the use of their home language. The "Smarter Balanced Consortium and the CAASPP" section on page 23 should cite that the CAASPP Mathematics assessment is available in a stacked version that displays the assessment questions in English and Spanish and attributes responses in either language to a math score.

We look forward to continuing to engage in the Mathematics Framework revision process by attending the meetings of the Mathematics CFCC and providing public comment to support the effective inclusion of principles and practices to advance math equity and access. Please feel free to contact us directly if you have any questions or would like additional information or resources to assist you in your important work.

Sincerely,

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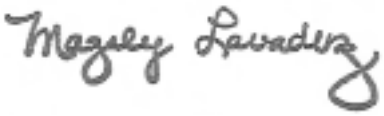

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August 4, 2020

Mathematics Curriculum Framework and Evaluation Criteria Committee
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Dear Mathematics Curriculum Framework and Evaluation Criteria (CFCC) Members,

We appreciate the opportunity to continue to comment on the 2021 Revision of the *Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve* (Mathematics Framework). This letter is signed by 11 California education advocacy and research organizations, and county offices of education, who are dedicated to the goal of ensuring that principles and practices of equity and access are incorporated within each chapter of the Mathematics Framework—particularly for English learners.

This letter contains comments and feedback stemming from our review of *Chapter 1: Introduction*, *Chapter 2: Teaching for Equity and Engagement*, and *Chapter 8: Grades 9-12*. We understand that all of the drafts will still go through additional revisions and appreciate the recognition that there is a long way to go to adequately address equity and access in all of the chapters. We hope to see significant progress in the subsequent drafts and that our recommendations support the writers and Mathematics CFCC toward meeting that vision. As we have recommended in our previous letters, a chapter focussed on equity and access can tackle these issues while also incorporating examples of their application throughout the other chapters.

Our main recommendations across all chapters include the following:

- **Operationalize the theory and vision of equity and access outlined in *Chapter 1: Introduction* with more practical guidance and examples throughout the other chapters**. Each chapter of the Mathematics Framework should explicitly commit to the vision outlined in Chapter 1. Guidance and examples must show scaffolding to meet the needs of English learners. For example, the vignettes throughout Chapter 2 and Chapter 8 are more focused on children on-grade level and can benefit from an emphasis on teaching to a variety of learners (there is no language of scaffolding for English learners or differentiation for other learners).

  Stronger examples can also be included so that students see themselves as part of the Framework. Examples need to better relate to students' experiences and interests, address relevant social justice issues, and come from diverse student perspectives. The Framework should include more examples from the perspective of immigrant students, English learners, and other students who have been historically marginalized.

- **Address structural issues that lead to inequitable access to rigorous math coursework.** While there are examples related to instruction and addressing the mindset of students as learners, the chapters still lack an appropriate discussion of the structural issues that lead to inequitable access to rigorous math coursework. Some of these issues include grading; tracking; course placement; access to culturally relevant materials; and (especially in the time of COVID-19) access to devices, internet connectivity, and synchronous learning time.

- **Incorporate ELD standards within all chapters and map them to their corresponding Math standards**. There is a need to include a discussion of the legal requirement for both designated and integrated ELD, and how integrated ELD supports the learning of math concepts and content. This involves supporting teachers to understand how to scaffold the language of the lesson. There is still no mention of ELD or ELD standards within any of our reviewed chapters. As mentioned previously, it is important to map out the ELD standards to their corresponding Math standards and this alignment is called for in the passage of AB 899 (2013). We also point the committee again to WestEd's December 2015 report produced for the California Department of Education, *Integrating the CA ELD Standards into K–12 Mathematics and Science Teaching and Learning*, which maps ELD standards to math standards.

- **Strengthen language to explicitly meet the needs of specific students groups, including English learners, students with disabilities, dual language learners, and others.** The current language discusses "all students" without specifically describing who those students are. This also includes ensuring that the needs of some student groups, including English learners and students with disabilities, are not assumed to be the same. The needs of dual language learners throughout the framework should also be considered so that content can be delivered in English and the other language of instruction.

Below we address chapter-specific recommendations:

Chapter 1: Introduction

The introduction is strong and lays out a good plan for the issues that each chapter of the framework should address. We strongly urge the writers to connect the vision in the introduction with the content in each corresponding chapter. Specifically, the chapter references racial, gender, and language inequities that have resulted from exclusionary policies and practices. It is essential that each chapter provide specific guidance for implementing policies and practices to dismantle these inequities.

The introduction should emphasize the need to have coherence and rigor across all of the frameworks. For coherence, this means discussions about what the alignment across the different frameworks means for the instruction of English learners. Within rigor, there needs to be a discussion about what rigor looks like for specific student groups, including rigor in content and examples.

Chapter 2: Teaching for Equity and Engagement

This chapter does a good job of emphasizing the importance of teaching big ideas, connecting to students' prior knowledge, being mindful of how questions are posed, encouraging students to use language of comfort, and supporting students with visuals. However, this chapter still lacks clear examples and guidance to operationalize this and lacks a clear description of the structural issues leading to inequities in math. The chapter can be improved by ensuring it contains:

- **Vignettes that offer strategies for equitable access.** Vignettes should show how teachers differentiate their instruction to reach a variety of students. There is an opportunity to add examples that focus more on language development and to include guidance on scaffolding for diverse learners within each vignette. For example, one strategy to highlight and uplift for access is accepting student responses and teacher input in the language spoken by students as in the vignette on pages 14-15 (lines 349-373)**,** which encourages the teacher to answer in Spanish.

- **Integration of English language development.** Currently the chapter has no reference to integrated ELD, strong examples of language development strategies, or strategies for dual language classrooms. While there is a short section of the chapter that focuses on ELs and students with disabilities, it has very superficial language on ELs. There is an opportunity here to incorporate ELD standards and discuss the discourse of Math and how math lessons should be aligned to both math content and ELD standards.

- **Culturally relevant and responsive practices.** The chapter lacks a detailed description and examples of culturally relevant and responsive practices. We encourage the inclusion of stronger examples of social justice issues that are also more relevant to our students. For example, the "Teach Toward Justice" vignette on pages 16-18 (lines 388-426) references the principles of justice for understanding and making change in the world. However, this is a missed opportunity to engage students in applying math content to a challenge in the world that is impacting their lives. We recommend including more robust and relevant examples that engage students in understanding issues. For example topics such as the disproportionate impact of environmental degradation and climate change, disparities in healthcare access , and virus spread and containment (especially related to COVID-19) could be considered. Moreover, the chapter could have a more robust conversation about the math contributions from different cultures, discuss cultural identity, and offer strategies for culturally responsive teaching. Within culturally responsive teaching, there can be a discussion about the role of educators, school leaders, and districts in considering the needs of their diverse students in selecting course materials.

- L**anguage that is assets-based throughout.** We appreciate the general inclusion of assets-based language throughout the chapter and the Framework. However, there is some language in the chapter that is still problematic. For example, the reference to "low-status students" (line 304) characterizes students as having a deficit. As the

chapter is reviewed again, we encourage the writers to check for this language and be mindful to not "problematize" the lived experiences of students of color and those living in poverty. We also encourage the use of "emergent bilingual students" as a possible frame for English learners and students in dual language programs.

- **Discuss Needs of Specific English learners.** The chapter could include a discussion of the different English learner typologies so that these students are not all seen as the same. We encourage writers to borrow from the language in the ELA/ELD Framework on the typologies of English learners. It is also important to understand that English learners come from diverse backgrounds and home languages. The chapter can also discuss the issue of the over-identification of English learners as students with disabilities and its implications of Mathematics instruction.

- **A stronger discussion of trauma-informed pedagogy.** While the chapter (on line 212) mentions trauma-informed pedagogy, this important instructional approach is complex and requires more explanation than the brief reference. If this topic is going to be mentioned, it should be given the proper focus and attention it deserves, with references to research and resources.

Chapter 8: Grades 9-12

We appreciate and support the language in the chapter about using math to understand and affect the world. This provides a good framing that can make math relevant and connect to students' lives. However, there are some opportunities for improvement, including:

- **A stronger focus on math achievement in California and achievement gaps.** While this chapter has a good comparison of the national NAEP and PISA scores (pages 3-5), the focus for the NAEP scores should be on those from California. Moreover, this section could call out achievement gaps by discussing achievement by race and language status. Additional data related to gaps in access and opportunity (course access, access to credentialed teachers, etc.) would also help to illustrate some of the root causes to the achievement gaps and highlight opportunities for closing them.

- **More assets-based language.** We continue to appreciate the efforts to ensure that language in this chapter is assets-based. However, there are some examples of language that can be reframed. For example, the mention on page 6, line 121 on "encouraging students-even strong mathematics students…" can be reframed as we should assume that all students can be strong in math.

- **Examples and strategies to address structural issues of inequity.** The chapter touches on some issues of school culture and access, however the conversation merits a more detailed description. For example, the section on "exclusionary math" starting on page 9 offers a great opportunity to expand on these issues and be more explicit about them. This section references research and concepts that can be expanded on, including an explanation of how "to counteract the many forces that filter and exclude so many from mathematically-intense pursuits" (lines 207-208). More examples of policies and

practices that serve to increase access and inclusion would be beneficial to many audiences.

- **Incorporation of ELD standards and language development strategies within the CCSSM clusters of emphasis and COIs.** There are opportunities to incorporate the ELD standards and related strategies under each of the CCSSM clusters of emphasis and COIs. For example the description of *COI 4: Stories told by data* on page 33, lines 884-885 offers an opportunity to incorporate concepts of language development and examples that are culturally relevant. These descriptions should also incorporate additional strategies for differentiation for other student groups. In addition, lines 480-481 ("When students share responses, they will hear from other students some points of view that they hadn't considered.") is a great opportunity to expand on strategies for language development. The English Learner Success Forum has created *Guidelines for Improving Math Materials for English Learners* that might help.

- **Include more vignettes that are culturally relevant to the experiences of California students and address differentiation.** The vignettes can include examples that offer application to issues that students in California can relate to, including finding solutions to problems related to social justice. For example the vignette on whaling in Alaska offers a missed opportunity to discuss strategies to scaffold for English learners and other students. However, there might be another vignette that includes concepts of climate change and impact on a community that can be California specific. Another opportunity for differentiation can be found on page 22, lines 561-577, which includes students sketching what they see in a video and discussing their findings with a partner.

Thank you again for the opportunity to offer our feedback in our shared goal to ensure that the principles of equity in access are incorporated within the Mathematics Framework. We look forward to the next draft of the chapters and to our continued engagement.

Sincerely,

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CALIFORNIANS TOGETHER
CHAMPIONING THE SUCCESS OF ENGLISH LEARNERS

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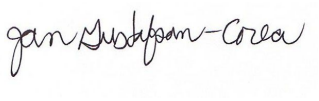

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August 11, 2020

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Dear Members of the Instructional Quality Commission,

We are writing to update you on our engagement with the Mathematics CFCC during their June 24-25 and August 5-6 meetings and our efforts to ensure that the 2021 Revision of the *Mathematics Framework* includes **a chapter dedicated to equity and access and incorporates principles and practices of equity and access within each chapter.**

Within our focus on equity access, we are looking to both instructional practices that ensure access to all students and to addressing systemic barriers. For English learners, this means incorporating ELD standards aligned to Math Standards (including integrated and designated ELD practices throughout). For all California students, this also means including examples and strategies that make teaching and learning culturally relevant. We need to make sure that the vignettes and examples within each chapter are culturally relevant and are examples of differentiating instruction for a diverse student population. In short, our English learners, immigrant students, and students of color must see themselves in the Framework and educators must see how they are intentionally addressed.

We invite you to view the letter that our coalition submitted ahead of the May 13 Instructional Quality Commission meeting, the June 24-25 Math CFCC meeting, and the August 5-6 Math CFCC meeting, for more information on what we have seen in the draft chapters so far.

We also want to take this opportunity to thank the CDE staff and Math CFCC members that have pushed for the inclusion of several of the recommendations highlighted in our letters. We particularly appreciate the theory and vision of equity and access that was outlined in *Chapter 1: Introduction*. Each chapter of the Mathematics Framework should explicitly commit to the vision outlined in this chapter and provide guidance and examples that operationalize this.

We understand that the draft chapters are a work in progress and look forward to our continued engagement so that the Mathematics Framework is one that we can all be proud of. If done well, the Mathematics Framework can serve as a model which can inform future framework updates for other subjects.

Sincerely,

Dr. Elisha Smith Arrillaga
Executive Director
The Education Trust-West

Martha Hernandez
Executive Director
Californians Together

September 22, 2020

Mathematics Curriculum Framework and Evaluation Criteria Committee
c/o California Department of Education Curriculum
Frameworks & Instructional Resources Division
1430 N Street, Suite 3207
Sacramento, CA 95814

Dear Mathematics Curriculum Framework and Evaluation Criteria (CFCC) Members,

We appreciate the opportunity to continue to comment on the 2021 Revision of the Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve (Mathematics Framework). This letter is signed by 13 California education advocacy and research organizations, and county offices of education, who are dedicated to the goal of ensuring that principles and practices of equity and access are incorporated within each chapter of the Mathematics Framework—particularly for English learners.

This letter contains comments and feedback from our review of *Chapter 6: Grades TK-5*, *Chapter 7: Grades 6-8*, *Chapter 10: Technology and Distance Learning in the Teaching of Mathematics*, and the updated *Chapter 3: Number Sense*. We appreciate the increased focus throughout the chapters on EL specific strategies in examples and vignettes, incorporation of both integrated and designated ELD throughout, and inclusion of asset-based terminology and approaches. As with any work in progress, there are some areas within each chapter where improvements can be made for the benefit of ELs, multilingual students, and California's diverse student population.

For all chapters, we recommend adding a more robust structure to promote language participation. While the chapters have sentence frames and examples of language supports, such strategies could be more explicit and robust. For example, math language routines can be built into the vignettes. We recommend *Principles for the Design of Mathematics Curricula: Promoting Language and Content Development* from the Stanford University Graduate School of Education as a resource: https://stanford.io/2Ho0kYS.

Chapter 6: Grades TK-5

We appreciate the inclusion of ELD strategies and language calling for the provision of mathematically rich environments that offer frequent opportunities for math discourse (such as math talks). The chapter has a vignette on integrated ELD and a variety of ELD strategies highlighted. For example, there is a mention of cognates with "approximate" and "approximado" (lines 192-193), a table focused on multiple meaning words (lines 229-230), small group instruction by English proficiency level (lines 233-243), and sentence frames (lines 249-254).

As mentioned in previous letters, mathematical discourse helps all students but is critical for ELs, who need to practice and see language modeled. We appreciate the mention of how teachers can support their students in exploring mathematics through classroom discourse equitably. For example, the Grade 4 vignette is drawn from research on supporting ELs in mathematical activities, and highlights ways that teachers can draw on students' existing knowledge to support learning. At the end of the Grade 4 vignette, there is a summary of ways teachers can address the needs of emergent multilingual students (Lines 305-319)

Recommendations for improvement:

- The respective California ELD standards should be referenced across all vignettes and cited alongside math standards to ensure simultaneous attainment of math concepts and language development. While the first vignette mentions ELD standards and strategies, such explicit language is missing from the other vignettes. There is also no discussion about how teachers can identify ELD standards to provide support during the lesson. Some areas of opportunity include:
    - Pages 3-11: Suggest that the teacher use designated ELD time prior to presenting the lesson to allow the student to compare concepts with real life objects, write a few sentences, or discuss with other students.
    - Page 13, lines 370-387: The discussion about developing math discourse and the sample questions seem abstract and metacognitive. Recommend using designated ELD time to develop the math academic discourse and help students with the language they need to explain their thoughts. Also suggest that teachers check if ELs are able to use the discourse in the context of the lesson to inform further support in small groups or in future designated ELD lessons.
    - Page 24: Asking questions to play "Guess Who" could be previewed in designated ELD.
    - Page 73, lines 1005-1996: Add some suggestions on how the teacher can work with students to meet the language challenges in the lesson.

- Examples can be strengthened to make the chapter more relevant and asset-based. The chapter does include some good examples, such as in the use of "cognates" (page 7) and the use of the term "emergent multilingual student." These examples should be expanded. Some areas for this include:
    - Page 30, lines 863-867: Include examples in reference to increasing student engagement with problems that "highlight diverse cultural groups."

Chapter 7: Grades 6-8

The chapter raises several issues that must be addressed to ensure equitable access to math for all students. For example, tracking and acceleration in middle grades are called out as inequitable practices, heterogeneous grouping is mentioned as a practice that is beneficial for all students (including high achieving students), and both of these arguments are supported with research. The chapter also provides examples of tasks that are culturally relevant (such as the data science task focused on basketball shots of a popular player) and uses engaging

examples that help students make sense of mathematics in context. The chapter also includes a vignette on integrated ELD and Mathematics (COI 3 CA Clusters of Emphasis).

Recommendations for improvement:

- Support practitioners in transitioning to geometry that is more accessible to students. For example, the last COI vignette should address transformational geometry to make another strong statement about the shifts necessary for more equitable outcomes for students.

- Add more examples and authentic problems that are culturally relevant. For example, "COI 2: Stories Told by Measurement and Data" provides an opportunity to add more examples. There also needs to be more real-world authentic problems for students of all backgrounds as opposed to the puzzle and pattern problems that do not promote real-life connections. Some areas of opportunity include:
    - Page 2, lines 42-48: Cultural relevance should be an integral part of being "authentic". What is relevant and what students wonder about is influenced by their community and family culture. An authentic problem should value and make use of the knowledge of students and families.
    - Page 2, lines 50-53: Identify the mathematics for which the topics mentioned as the "bones" of is classical mathematics (3 C's Framework: Classical, Community and Critical), leaving a space to consider other mathematics.

- Use more asset-based language throughout. For example, "Critique" could turn into "ask questions and notice features in order to understand and learn from the reasoning of others."
    - Line 645: Kiyo should be given an opportunity to explain how she arrived at this expression and focus on what makes sense about her thinking first rather than what is incorrect.

- Ensure that vignettes highlight how student identity and agency are developed, how their prior knowledge is tapped, and how their native languages are built on. Using vignettes that highlight lessons that have used UDL principles in its design would help specifically target instructional moves designed for ELs, modeling intentionality in the design. Some areas of opportunity include:
    - Page 6, lines 65-67: Support practitioners in understanding how to "tap into" what students bring by providing strong examples. Vignettes should highlight the diverse cultural and linguistic assets students bring with them.
    - Page 14, line 364: Mention the opportunity to reach out to culturally and linguistically diverse students and find out what they are interested in.
    - Page 21, line 504: Identify the strengths of the 12 students highlighted and use them to design this lesson. This vignette identifies the top-layer characteristics of the students in this class only. What are the strengths of the four students with IEPs and the eight students who are emergent bilingual?

Chapter 10: Technology and Distance Learning in the Teaching of Mathematics
This chapter makes several references to the importance of ensuring ELs have access to integrated and designated ELD during distance learning and the importance of ensuring that all students have access to the technology that is being used for instruction (it highlights Principles for Technology Use in Mathematics Learning, including Principle 3: Learning Technologies Are Accessible for All Students). The chapter also recognizes the importance of teacher professional development in order to effectively implement technology and distance learning (the chapter references a framework, which includes Principle 2: Support for Teachers of Mathematics Accompanies Use of Learning Technologies).

Recommendations for improvement:

- Provide stronger guidance regarding access to devices and connectivity beyond the pandemic. In the section focused on distance learning, there is no guidance around ensuring access to devices & connectivity, or how to ensure equitable access to the curriculum for students who do not have access to technology. The distance learning section is what is on the CDE website right now regarding guidelines for distance learning and not specific to math. The framework guidance should be more forward thinking about distance and hybrid learning generally (beyond the current pandemic).

- Strengthen language to ensure distance learning is culturally relevant and engaging for students. The chapter references the TPACK Framework which promotes the balance of technology, content, and pedagogy. While the chapter discusses the potential of technology to create engaging learning experiences, it does not mention ways to ensure that the learning experiences are culturally relevant and sustaining. This is a missed opportunity. Technology-based learning opportunities can be designed in ways to nurture students' belonging, identity, and agency, especially in the area of math (See Stride 3 of a Pathway to Equitable Math Instruction as a guide: www.equitablemath.org). There needs to be more attention to opportunities for students to talk with peers and engage meaningfully in a distance learning environment.

- Demonstrate how teachers can facilitate math discourse and language scaffolding using technology or in a distance learning setting. This can be done in the vignettes and other sections of the chapter.

- Ensure considerations for multilingual students and families. Some areas of opportunity include:
    - Lines 498-504: Address "Preparing Families and Staff for Distance Learning." In this section, the chapter states that "it is important to engage with parents in the language which is spoken in the home." The framework should also recommend that schools and districts provide bilingual (or multilingual) technology support to students and parents.

- Ensure instruction continues to place distance learning in context. The literature and research cited is not robust for distance learning in K-12 education. More learning is

needed to ensure best practices. For example, while the chapter references a US Department of Education study (line 388) that shows "well-designed distance learning … is often more effective than traditional in-classroom learning alone", this study was based largely on higher education or professional online learning.

Chapter 3: Number Sense
The updated chapter has a stronger emphasis on providing strategies for students to make connections between current language, new language, and the mathematical concepts. The chapter has a more explicit focus on how ELD and language plays a role in making sense of numbers for all students, an ELs in particular.

Recommendations for improvement:

- Provide opportunities for teachers to show how to support students in making sense of numbers. The chapter should lift areas of professional learning for educators to develop metacognition around language development. The chapter should also lift the areas where we need to empower teachers to teach number sense. We recommend, *Understanding Language* from the Stanford Graduate School of Education as a resource: https://ell.stanford.edu/teaching_resources/math

- Ensure that examples are engaging and have relevance for students. While the chapter does a good job of providing concrete examples, there could be more examples that connect to students' real world experiences. Making meaning of numbers should also incorporate the story and application behind them.

Thank you again for the opportunity to provide feedback and suggestions on these important chapters. We appreciate the continued progress of the Mathematics CFCC, the writers, and CDE staff and appreciate the progress that has been made in subsequent drafts of the chapters.

Sincerely,

Martha Hernandez
Executive Director
Californians Together

CALIFORNIANS TOGETHER
CHAMPIONING THE SUCCESS OF ENGLISH LEARNERS

Dr. Elisha Smith Arrillaga
Executive Director
The Education Trust-West

20 YEARS OF FIERCE ADVOCACY
The Education Trust–West

Jane Steinkamp
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Pamela Burdman
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October 16, 2020

Mathematics Curriculum Framework and Evaluation Criteria Committee
c/o California Department of Education Curriculum
Frameworks & Instructional Resources Division
1430 N Street, Suite 3207
Sacramento, CA 95814

Dear Mathematics Curriculum Framework and Evaluation Criteria Committee (CFCC) Members,

Thank you for the opportunity to continue to comment on the 2021 Revision of the *Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve* (Mathematics Framework). This letter is signed by 15 California education advocacy and research organizations and county offices of education who are dedicated to the goal of ensuring that principles and practices of equity and access are incorporated within each chapter of the Mathematics Framework. This letter contains comments and feedback focused on *Chapter 2: Teaching for Equity and Engagement*, *Chapter 5: Data Science*, *Chapter 9: Supporting Equitable and Engaging Mathematics Instruction*, *Chapter 11: Mathematics Assessment in the 21st Century*, and *Chapter 12: Instructional Materials*.

Across all chapters, we continue to see improvements that can meet the needs of English learners and connect to students' experiences. Our general recommendations for all chapters are to continue to:

1. **Improve examples and strategies to ensure that the Framework is equity-focused, culturally sustaining and asset based; and**

2. **Incorporate examples and strategies to improve language access, including opportunities to practice and scaffold language and incorporate ELD standards**.

Below is our chapter-specific feedback. More detailed recommendations are provided in the appendix.

Chapter 2: Teaching for Equity and Engagement

The chapter has included more direct examples and references to English learners in the text and vignettes, which is an improvement from the previous version. The chapter also includes additional references to students' experiences, knowledge, and native languages. We also appreciate the reference to the California ELD standards on page 12 and attention to addressing in the moment teaching for specific understanding and language.

There are still areas for improvement to meaningfully address and expand cultural sustainability/relevance and language access. Moreover, some of the current references are not asset based. While the chapter includes some examples of scaffolds for understanding

content, it is still lacking scaffolds for language development. The chapter currently has only one mention of ELD standards when math standards are presented.

In addition, an essential precursor for instruction before engaging in the five components listed (starting at line 109) is that teachers must understand and know their students. Teachers can integrate mathematics content with key social-emotional and academic development (SEAD) themes of agency, identity, belonging, and discourse. See *A Pathway to Equitable Math Instruction: Stride 3 Creating Conditions to Thrive* for resources and planning guides for each of the four SEAD themes.

Chapter 5: Data Science

The chapter includes asset-based approaches that can uplift student experiences and support learning through language. This includes the three principles of learning data science: 1. working with real data that comes from their communities, 2. collaborative data investigations, and 3. classroom discussions to encourage sense making (lines 109-123). The data talks allow students to engage in discourse around interesting data representations. The K-5 vignette shows examples of students collecting and representing data about the real world.

However, there are some areas that can be improved to add more cultural relevance and incorporate ELD strategies. For example, the seventh grade vignette (lines 756-785) could be made more culturally relevant by connecting it to a real-world context. An alternative activity that covers the same concepts through a social justice context is "Driving While Black or Brown" from *Rethinking Mathematics: Teaching Social Justice from the Numbers*. The chapter could also address strategies for families to support student learning, which is a missed opportunity. Families generate a lot of data in their daily lives (e.g. as consumers, as workers, as users of social media, etc.). As such, families can be used as sources of data for statistical investigations. The chapter could also do a better job of incorporating specific ELD strategies into each vignette. Each activity could include an example of a strategy to support English learners.

Chapter 9: Supporting Equitable and Engaging Mathematics Instruction

The chapter conveys that all students deserve access to high-level mathematics and recommends that all students take the same, rich mathematics courses in K–8. We appreciate the acknowledgment that tracking has resulted in widespread racial inequities, including the filtering of students out of Science, Technology, Engineering, and Mathematics (STEM) pathways. The chapter also acknowledges the important role that administrators play in conveying high expectations for mathematics instruction by supporting teachers with resources and time for planning lessons, professional learning, and collaboration. Resources were also cited that provide support and knowledge of inclusive teaching approaches, especially those that focus on English learners and students with learning differences. Resources were offered for administrators to learn more about math teaching and learning within the context of equity and social justice issues.

As the chapter is revised, we recommend addressing professional learning on designated and integrated ELD and dual language instructional approaches. Educator resources and support must be inclusive of primary language resources and include collaboration time between the ELD teacher and the content area teacher. There is currently no mention of the need to provide professional development on the ELD standards or integrated ELD. Figure 11.3 from the ELA/ELD Framework explicitly highlights the critical content for professional development. It underscores addressing the needs of diverse learners, the inclusion of culturally and linguistically responsive teaching as well as supporting biliteracy and multilingualism, and understanding the Mathematics standards as well as the ELD standards. A vignette that spotlights Math and ELD teachers collaborating and engaging in a professional learning community (PLC) or professional learning network (PLN) would be a good way to underscore the importance of this collaboration.

Figure 11.3. Critical Content for Professional Learning

Establishing a Vision for California's Students • Develop the readiness for college, careers, and civic life • Attain the capacities of literate individuals • Become broadly literate • Acquire the skills for living and learning in the 21st century	**Understanding the Standards** • CA CCSS for ELA/Literacy • CA ELD Standards • Model School Library Standards • Implementing science, history/social studies, career and technical education, and other standards in tandem	**Establishing the Context for Learning** • Integrating the curricula • Motivating and engaging learners • Respecting learners' • Ensuring intellectual challenge
Enacting the Key Themes of ELA/Literacy and ELD Instruction • Meaning Making • Language Development • Effective Expression • Content Knowledge • Foundational Skills	**Addressing the Needs of Diverse Learners** • Comprehensive English language development: integrated and designated ELD • Additive approaches to language and literacy development • Meeting the needs of students with disabilities and students experiencing difficulty • Meeting the needs of advanced learners and other populations	**Exploring Approaches to Teaching and Learning** • Models of instruction • Culturally and linguistically responsive teaching • Supporting biliteracy and multilingualism • Supporting students strategically (including UDL and MTSS)
Sharing the Responsibility • Collaborating within and across grades, departments, and disciplines • Promoting teacher leadership • Partnering with community groups and higher education • Collaborating with parents	**Evaluating Teaching and Learning** • Types and methods of assessment (formative, summative, rubrics, portfolios, diagnostic) • Cycles of assessment (short, medium, long) • Student involvement in assessment • Appropriate preparation for state assessments	**Integrating 21st Century Learning** • Critical thinking skills • Creativity and innovation skills • Communication and collaboration skills • Global awareness and competence • Technology skills

This chapter should strengthen its focus on equity, especially given its title. As currently written, there is much more attention paid to engagement than to equity. Professional learning on culturally relevant teaching pedagogy and unconscious bias should be explicitly mentioned. We recommend using *A Pathway to Equitable Math Instruction* from The Education Trust--West as a resource. The chapter should also specify which student groups have been marginalized and underserved and for whom equitable practices are targeted. Moreover, while the section that recognizes the impact of teachers' own experiences of mathematics on their own identities and practices (lines 223-234) is important, it would be helpful for this section to acknowledge that students' experiences with math learning shape their math identities as well and that these experiences often take place within a context of institutionalized and societal racism.

This chapter would also benefit from providing guidance and resources for engaging families and community organizations as essential partners in supporting equitable and engaging instruction. It appears that there is a missing section to address these key sources of support, given the introduction to the chapter.

Chapter 11: Mathematics Assessment in the 21st Century

We appreciate the additional language and research in this chapter around bias in assessments and its impact on students of color and tracking. The snapshot on pages 25-26 about retaking assignments and tests is also positive.

As noted in our previous comments, we urge the committee to add a specific section on assessment considerations for English learners and students in multilingual programs. Reference to the stack version of the Math CAASSP exam in Spanish and English would be helpful to include. Assessment options and examples for students in dual language programs should also be included. The formative assessment example (on page 6) should also include examples of assessments and modifications for English learners. Further, it would be helpful to discuss considerations for pairing students at different English proficiency levels and explicitly state the benefit to language development. The "Portfolios" section on page 26 should mention the option for students in multilingual settings to demonstrate knowledge of math concepts through the use of their home language.

Chapter 12: Instructional Materials

This chapter is very important as it provides direction to instructional material developers and guidance to LEAs on how to best select instructional materials. The chapter should be explicit that high-quality instructional materials must consider the experiences, assets, and needs of all students (including ELs) embedded in the core content. There should also be language in the criteria about encouraging the submission of instructional materials in multiple languages.

In order for instruction to be equitable, materials need to guide teachers in how to amplify the language for comprehensible input and to provide sustained practice in using target disciplinary language. The guidance for supporting ELs should be more explicit. For example, under category 4, the roadmap for teachers should provide explicit language for how to support equitable student collaboration and conversations that account for the students' language proficiencies. It should also provide guidance in assessing language needs and responding appropriately through scaffolding. Math practices are language intensive; therefore, language development around those math practices should be intentional and explicitly guided in teacher and student materials. We recommend referencing the *Guidelines for Improving Math Materials for English Learners*, which provide specific guidance to developers of mathematics content on key areas of English language development that must be embedded across a curricula to provide the necessary foundation for the simultaneous development of disciplinary knowledge, language and literacy for ELs as well as guide teachers to be more inclusive of the various needs of ELs, ultimately leading to a significant increase in EL students' access to grade-level content.

There should be additional guidance in teacher materials for grouping students with consideration of their language needs. Learning materials (including teacher guides) are a form of professional learning for teachers. Materials should provide guidance for teachers in the following areas:

- How to group with language needs in mind,

- How to assess for language development,
- How to analyze tasks for language demands and plan for how to support students in meeting those demands based on students' needs, and
- How to amplify language for ELs and to provide multiple entry points to content and practices

Guidance should also be added for curriculum providers on cultural relevance and reflecting the diversity of student experiences. Using this scorecard can be a starting point: *Introducing the Culturally Responsive Curriculum Scorecard: A Tool to Evaluate Curriculum*.

In addition, we include the following recommendations for each of the categories:

- Category 1: Include some level of cultural relevance and language access as a qualifying factor.
- Category 2: Going beyond glossaries, tables of contents, and referencing of standards, call for instructional materials to show a strategic, intentional progression of big concepts; math practices; language use; and over the scope of lessons, units, and entire courses.
- Category 3: Include guidance on opportunities for revision and re-engagement.
- Category 4: Rather than framing access and equity as a matter of "differentiating" or modifying already adequate instructional materials, this can be framed as something more like: "There is no such thing as a 'good' standards-aligned instructional material that is not designed with the experiences of English Learners as a foundational principle. Afterthoughts are not enough. If it is not designed well for English Learners, it is not designed well." English Learners, advanced students, and students with disabilities are not mutually exclusive groups. Additionally, it may be better to focus on suggestions for deepening and extending ideas rather than locating the issue with a group of "advanced students." Different students may be more or less advanced with different topics on different days.
- Category 5: Consider the following under each listed factor. For #1, include attention to progression of ideas, practices, and language; for #3, clarify what is meant by "curriculum guide;" for #4, include sample student responses; for #9, include guidance for how teachers can listen to and learn from the math practices of families (e.g. make it a two-way street); for #10, include ideas for revision and re-engagement; and for #11, add opportunities for students to make sense of their own and each other's thinking.

We have included more page- and line-specific recommendations in the attachment to this letter. Thank you again for the opportunity to offer our feedback in our shared goal to ensure that the principles of equity and access are incorporated within the Math Framework.

Sincerely,

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Executive Director
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Appendix: Specific Recommendations

Chapter 2: Teaching for Equity and Engagement

2.1. Page 4, line 103: The explanation of scaffolds and language development being sentence frames and sentence starters is too simplistic. We suggest this alternative language: "teach the discourse and linguistic challenges and build background knowledge of the content of the lesson."

2.2. Page 4, line 105: "Give opportunities for pre-learning" should include using designated ELD instruction.

2.3 Page 5-7, lines 146-189: Tapping prior knowledge of farming should also include prior knowledge of working as a farmworker or growing your own garden. In addition to making reference to California's role in the production of fruits and vegetables, also include the contributions of the farmworkers who put food on our tables. This example can also encourage students to form small groups to discuss the issue in their home language and then present their findings to the class in both English and their home language.

2.4. Page 6, lines 152-161: Support for LTELs through sentence frames is very simplistic. In addition to naming shapes, teachers need to identify the linguistic challenges of the content and what students will need to participate in group problem solving. Previewing with EL students prior to forming groups or pairs would help predict success for engagement.

2.5. Pages 7-8, lines 190-221: This is an opportunity to list ELD standards next to the aligned Math standards.

2.6. Page 12, lines 327-328: It is a simplistic suggestion to just repeat the question. Instead use a manipulative to explain the concept and then ask the student to demonstrate two digit numbers and then explain.

2.7. Page 13-16: These examples could incorporate ELD standards.

2.8. Pages 20-21, lines 460-492: The vignette could include references to ELD standards and highlight that the process allows students to practice the language of math with manipulatives for greater comprehension.

2.9. Page 22, line 532: Eliminate the reference to vulnerable in reference to ELs.

2.10. Page 23. Line 56: Insert the word "accepting" before "multiple styles".

2.11. Pages 25-26: It is unclear how the vignette is an example of social justice.

2.12. Pages 27-28, lines 654-685: The vignette is a good attempt, but it would model better practice to arrange for translation, if needed, without fellow students having to ask if a student understands English when calling on a student to present to the whole class or take questions from the whole class.

Chapter 5: Data Science

5.1. Page 69, line 1480: Under the "Free Resources for the Teaching of Data Science," consider adding: UCLA's CourseKata Statistics and Data Science course: www.coursekata.org.

Chapter 9: Supporting Equitable and Engaging Mathematics Instruction

9.1. Lines 71-85: There is a need to specifically reference professional learning on culturally responsive teaching strategies, Integrated ELD, and dual language approaches. Consider referencing resources from the Coalition for English Learner Equity and the English Learner Success Forum.

9.2. Lines 145-150: Since a critical component of rich learning is the planning time and pedagogical knowledge necessary to facilitate an active mathematics learning environment and second language considerations, administrators should evaluate and redesign the use of time and school schedules to increase opportunities for professional learning and collaboration, including participation in professional learning communities, peer coaching and observations across classrooms, and collaborative planning that includes ELD teachers.

Chapter 12: Instructional Materials

12.1. Page 1, lines 21-25: To engage in these core practices, ELs and all students need opportunities to develop the disciplinary language of mathematics to formulate and refine questions, to communicate their reasoning, and to develop and defend mathematical explanations. Furthermore, mathematical practices are inherently social practices, developed through interaction with the ideas of others.

12.2. Page 2, line 36: Including progressions of mathematical language development is advisable, including sustained attention to language development in materials and supports for students.

12.3. Page 2, line 43: Students working from home can be shown how everyday objects can be used as mathematical tools.

12.4. Page 4, line 92: Link broken.

12.5. Page 5, lines 142-143: We know what it means to be proficient at discrete content standards through assessments, but materials may not be entirely clear about what it means for students to be proficient at the mathematical practices. This is a larger

critique of the Common Core standards, but I think still an important issue to note since the term "proficient" figures largely in this document.

12.6. Page 6, lines 164-165: This is a commendable and important statement. But what does it mean exactly? If left underspecified, it could just mean adding the math practices labels to lessons to show tenuous connections. Instead, more guidance is needed here. For example, materials should include a clear connection for the conditions needed to support mathematical practices such as interaction with peers, access to complex text, language models, etc.

12.7. Page 6, lines 170-172: Given this, the task of eliciting students' thinking and wonderings highlights the central role of discourse as an essential tool for sense-making. Lesson materials need to provide guidance on how not only elicit students' ideas, but how to build on them.

12.8. Page 7, lines 177-178: Given this, materials will need to explicitly communicate the forms, text types, and standard ways of engaging in "mathematical investigations" including the language shifts from informal exploration to more polished presentations and products.

12.9. Page 7, lines 185-187: Just a note of caution. Developing fluency and number sense should be a goal of the core program, not relegated only to "intervention" students. Just a point of clarification to a larger issue when interventions are shoring up holes in the core program.

12.10. Page 7, line 194: In addition to math terms, students benefit from more unpacking of the syntax of mathematics, the way we use symbols, the way we read square roots, etc. Much of this remains "hidden code" to students. (see Judit Moschovich's paper at the Understanding Language website.)

12.11. Page 8, line 217: Materials should provide guidance on how teachers can see if students are progressing in their use of mathematical practices (forming arguments, modeling, etc.). Most materials provide ways to assess only content standards, not progress on mathematical practices. ELs need explicit and sustained attention to the language needed to engage in the math practices.

12.12. Page 9, lines 242-244: Content developers should be required to explicitly show how their materials address this goal: *English learners read, analyze, interpret, and create a variety of literary and informational text types. They develop an understanding of how language is a complex, dynamic, and social resource for making meaning, as well as how content is organized in different text types and across disciplines using text structure, language features, and vocabulary depending on purpose and audience. They are aware that different languages and variations of English exist, and they recognize students' home languages and cultures as resources to value in their own right and also*

to draw upon in order to build proficiency in English. English learners contribute actively to class and group discussions, asking questions, responding appropriately, and providing useful feedback. They demonstrate knowledge of content through oral presentations, writing tasks, collaborative conversations, and multimedia. They develop proficiency in shifting language use based on task, purpose, audience, and text type.

12.13. Page 10, lines 263-264: For activities that require extended responses from students, the answer keys should reflect a wide range of plausible student answers, and be written in ways that students are likely to respond. These should always be exemplary answers as they do not reflect student responses teachers will elicit. Included in this range should be examples of sound reasoning from students who are in the process of learning English.

12.14. Page 10, lines 276-278: These communications should be written to reach a wide audience, with practical suggestions, and in languages that parents and caregivers can understand.

12.15. Page 11, lines 281-282: Working with students' ideas means working with students' language. Materials should help teachers develop the "close listening" needed to support students thinking, for example, content developers could include "listen fors" to orient the teacher.

12.16. Page 11, line 283: Instructional materials should address standards and fully-integrated math practices, should focus on math investigations, and build on students' ideas, highlighting the social nature of teaching and learning and associated use of language. Therefore, the learning objectives should be robust enough to capture the full range of skills in use. The objectives should include not only the skill or understanding, but also how students will demonstrate their understanding, their reasoning (Here it may be useful to reference the ELD guidelines on interpretative, collaborative, and productive modes). Demonstrating understanding requires an explicit attention to the language needed to demonstrate understanding and engage in the practices. Learning objectives should reflect not only the math, but the language demands inherent in accomplishing the math objectives.

November 2, 2020

Mathematics Curriculum Framework and Evaluation Criteria Committee
c/o California Department of Education Curriculum
Frameworks & Instructional Resources Division
1430 N Street, Suite 3207
Sacramento, CA 95814

Dear Mathematics Curriculum Framework and Evaluation Criteria Committee (CFCC) Members,

Thank you for the opportunity to continue to comment on the 2021 Revision of the *Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve* (Mathematics Framework). This letter is signed by multiple California education advocacy and research organizations and county offices of education who are dedicated to the goal of ensuring that principles and practices of equity and access are incorporated within each chapter of the Mathematics Framework.

This letter contains comments and feedback focused on *Chapter 4: Exploring, Discovering, and Reasoning With and About Mathematics; Chapter 6: Grades TK-5; Chapter 7: Grades 6-8; and Chapter 8: Grades 9-12.* Across all chapters, we continue to see areas of improvements to better meet the needs of English learners and connect to students' experiences. Our general recommendations for all chapters are to continue to:

1. Incorporate examples in the vignettes and strategies that are culturally relevant and connect to the diverse experiences of California's students.

2. Incorporate additional strategies and examples to support ELD and language access within instruction, including opportunities to practice and scaffold language and incorporate ELD standards.

3. Leverage opportunities for family connections, which can improve the cultural relevance of instruction, support student home language, and improve school connectedness.

4. Consider the needs of multilingual classrooms and programs. This is a suggestion to consider across all chapters in the Framework, ensure that there are multiple examples of students and teachers mixing in languages other than English in their interactions, and with strategies for Math instruction in these settings.

Chapter 4: Exploring, Discovering, and Reasoning With and About Mathematics

The chapter has a good discussion about how math can be used by students to solve real life issues. This goal provides a great opportunity for this chapter to add more examples of issues that can be solved through math that are relevant to student's lives and building language access. Areas of improvement include:

Building Language Access. The chapter mentions ELs only once (on page 27) while there were no concrete suggestions for how to build language along with content, how to scaffold lessons for ELs, or how to use ELD to build the discourse needed to participate in the lessons.

Differentiation to Support Students. The vignettes and snapshots assume all students are a native English speaker and/or working on grade level. There should be a mention about how to support students who are not working on grade level, how to build background knowledge, and the important content and communication strategies that can support access. More scaffolding is needed throughout as many of the examples continue to assume that all students are on grade level.

Cultural Relevance. While there was some discussion about using math for real life issues that need solutions, the examples are minimal. The chapter also has no reference to primary language, students' lived experiences, or prior knowledge.

Suggested changes include:

- **Page 2, lines 40-52.** Consider adding support in developing reasoning as well as language as students engage in these disciplinary practices. The math practices, both in their framing as habits of mind but especially as habits of interaction, are linguistic processes.
- **Page 6, after line 164.** Add the following suggested language: *In addition, these three SMPs all require a high degree of language proficiency to content knowledge and reasoning. Looking at the ELD standards to guide building the English language proficiency for English Learners along with the SMPs and Math Standards would help illustrate how best to integrate language development in the lessons. For many students having small groups in which students can do the investigations, critiques and reasoning in their home language and language of strength is another facilitative alternative delivery mode. In designated ELD time the language of critiquing, reasoning, generalizing and argumentation is a space to help prepare English Learners for engagement in the SMPs and the mathematical content.*
- **Page 7, lines 168-172.** This frames the purpose of communication as sharing and justifying conclusions. Suggest expanding it to include more process-oriented reasons for communicating.
- **Page 8, lines 216-226.** Suggest adding language about attending to the language demands of students as this would support creating classroom culture in which all students are constructing and critiquing viable arguments.
- **Page 9.** In the discussion of the seven math norms, language can be added around cultural relevance, such as being inclusive of everyone. The norms can be elaborated on with this goal in mind and add an examination and examples.
- **Page 10, lines 268-270.** Explain that merely asking students to talk to each other in math class is insufficient and that the facilitation of high-quality discourse needs to be intentional, especially with attention to language development.

- **Page 10, line 274.** Add the following suggested language: *Random assignments for student interactions could prevent high-quality math discourse. Intentional patterns of grouping, such as primary language grouping, to support effective interactions and communication is important. Another option is to consider assigning a student bilingual broker for each small group of ELs and EO students, who is given extra training and support, can provide the language support leading to understanding by each group member and an appreciation of everyone's thinking.*
- **Page 12, line 314.** Add the following suggested language: *The use of concrete representations also provides the scaffolding that English learners need to demonstrate their understanding when they are at the beginning stages of developing English proficiency. While some students in a class may be ready to work without manipulatives or other concrete representations, some English learners may still need that support to make meaning and demonstrate their understanding.*
- **Page 15.** On the first grade snapshot, we suggest adding the following language, which could also apply to all snapshots and vignettes: *Prior to the lesson the teacher understands that presenting a question or problem to the whole class and asking for individual responses will be challenging for some English learners. In the designated ELD lessons prior to this whole group instruction, the teacher practices the discourse needed to explain their thinking and problem solving while giving them the language they need to be able to participate.*
- **Page 16, lines 388-392.** This is a good opportunity to add a mention of the importance of making mathematical contexts culturally relevant to ensure that diverse student experiences are considered. This is also an opportunity to add language around family connections since if parents relate to the material, it might be more likely that they feel identified and can contribute to their student's understanding.
- **Page 34, lines 767-773.** The language about how "Mathematical knowledge and understanding is developed and demonstrated socially," should be expanded to suggest how you create an environment and routines that give access to all students being able to communicate their thoughts and ideas and work socially in a classroom of mixed language and math proficiencies.
- **Page 40, lines 836-839.** This might be another opportunity to mention that socialization occurs through language.
- **Pages 40-41, lines 840-879.** Suggest calling back to some of the issues of fairness and justice brought up in lines 53-66.

Chapter 6: Grades TK-5

The chapter includes several ELD strategies and language calling for the provision of mathematically rich environments that offer frequent opportunities for math discourse (such as math talks). As mentioned in previous letters, mathematical discourse helps all students but is critical for ELs, who need to practice and see language modeled. We appreciate the mention of how teachers can support their students in exploring mathematics through classroom discourse equitably. For example, the Grade 4 vignette is drawn from research on supporting ELs in mathematical activities, and highlights ways that teachers can draw on students' existing knowledge to support learning. Areas of improvement include:

Add and Improve Vignettes to Make Connections to COIs and Include ELD. A vignette would be helpful after each of the descriptions of COIs and help students to connect the content standards and the SMPs. Respective California ELD standards should be referenced across all vignettes. While the first vignette mentions ELD standards and strategies, such explicit language is missing from the other vignettes.

Include Additional Suggestions for Language Support. Throughout all examples, add additional suggestions on how the teacher can work with students to meet language challenges in the classroom. The grades 3-5 section has few references to the needs of ELs, whereas the TK-2 section incorporated these regularly. With all the examples, please include some instances or vignettes in which the teacher is seriously thinking about ELs.

Suggested changes include:

- **Page 2, line 42.** Mention at the beginning that that understanding math also means engaging with others in math and "doing" math. The chapter has great examples of doing and engaging in math later, but this main point should be explicit from the start so that it is clear that understanding is not about "keeping it to myself."
- **Page 8, line 221.** Correction to "aproximado." The word only has one p in Spanish.
- **Page 16, lines 482-486.** The explanations and descriptions following these four categories could also describe the incorporation of the anti-racism and social emotional academic development that is needed in the math framework, and desperately needed in TK-2.
- **Page 24-25, line 706-716.** If the purpose of these COIs is to connect the content standards and the SMPs, then there should be more evidence of the SMPs in these lists. Maybe adding a chart that shows how each COI is connected to which content standards and which SMPs.
- **Page 26, lines 756-761**. These examples seem to be about data stories, but the examples are about shape and space. SMP connections should also be added.
- **Page 27, lines 780-786:** Asking questions to play "Guess Who" could be previewed in designated ELD. Suggest making that connection.
- **Page 33, line 954.** The word "allow" seems negative. Suggest changing it to something like "enrich the opportunities" for ELs to succeed.
- **Page 33, lines 954-961.** Include examples in reference to increasing student engagement with problems that "highlight diverse cultural groups."
- **Page 52, line 1451.** Name the SMPs being described so the connection is easier to make.
- **Page 56, line 1548**. Great example of an emergent bilingual student. Suggest changing "emergent EL" to "emergent bilingual".
- **Page 66, lines 1801-1807.** This snapshot seems just procedural, and could include strategies for ELs.
- **Page 69, line 1868.** Name the SMPs being described so the connection is easier to make.
- **Page 72, line 1964.** Name the SMPs being described so the connection is easier to make.
- **Page 75, lines 2064.** This snapshot could include strategies for ELs.

Chapter 7: Grades 6-8

The chapter includes good examples on how to assist teachers in teaching math for conceptual understanding, examples of scaffolding that enable all students to be successful in math, and the attention given to English learners and students with disabilities. The chapter also includes several examples of strategies for teachers to explain aspects of a vignette to provide background information to students, such as the explanation of "elite swimming" on line 429. Areas of improvement include:

Building on bilingualism. One area of improvement for the chapter is to discuss bilingualism and biliteracy within the instruction of Mathematics subjects. While the chapter addresses the needs of ELs, there is nothing that addresses biliteracy. It is difficult to translate a deep understanding of mathematical concepts without proficiency of the academic language. Deep conceptual understanding can be nurtured through developing the ability to recognize patterns and draw connections in mathematics via engaging and rich math discussions.

Cultural relevance. While making connections to student culture is addressed in several places, the chapter could elaborate on the types of cultures and how they affect students' understanding and interpretation of math. This is a great opportunity to share with educators about the different cultures that exist in our school system and the impact of bias.

Suggested changes include:

- **For all three vignettes.** Suggest structuring all Vignettes in the same way and use the second one from Tulare COE as a model. The other two vignettes are very brief and educators have to go out of the documents to look for the actual lesson plans. Having the three vignettes with similar structure would be very helpful to the field. All three vignettes could also explicitly address integrated ELD, just like Vignette two on Equivalent Expressions.

- **Adding a Vignette for 7th or 8th Grade.** The current vignettes include one for multiple grades and two for 6th grade. It would be great to consider focusing on another grade.

- **Page 16, lines 424-428.** In the "Vignette: Followed by a Whale", we suggest adding background information about whale beaching to ensure that students who are not familiar with marine life understand the urgency of the situation. We are assuming that the baby is lost and there is a need to bring the baby back to the mother, but one could assume that the baby is just swimming close to shore without this background. Some of the language in the story is also unclear which makes it difficult to get to the math. For example,: *Should Lynne swim out to the oil rig with the baby whale, or should she swim to shore inducing the baby to follow her and possibly be in danger?*

Chapter 8: Grades 9-12

The chapter needs careful editing to correct typos, pronouns without antecedents, and paragraphs that seem to be copied and pasted together leading to non-sequiturs. It is great to see each Vignette with a short paragraph about language development, UDL, and

accommodations. However, it would be useful if these ideas were explained earlier in describing the design of the task. For the treatment of language, the authors should consider referring to The English Learner Success Forum guidelines, particularly the guidelines in Focus Area 1 related to the interdependence of mathematics and language. The chapter should also describe how the lessons incorporated language development, practice, and mathematical goals.

While there appears to be the encouragement of the MU pathway, what seems to be missing here is any discussion of how students who take one pathway (say MU1 MU2, Statistics in grades 9, 10, and 11, and then who decide to switch to a STEM track pathway in their senior year) accomplish their educational goals. This seems like a very non-trivial issue that needs to be considered before the pathway idea is rolled out on a large scale in the California Framework. (I am thinking of this from the perspective of higher education where, if a student starts a STEM major in College Algebra or Pre-Calculus, their time to degree is 5 years minimum). If this recommendation is not made with care, it seems likely we could easily wind up with another set of equity issues that are similar to California's ill-fated attempt to mandate 8th grade Algebra.

Suggested changes include:

- **Page 7, line 129:** It is not clear what is meant by "previous courses." It would be helpful to add a topic sentence to organize this paragraph. Seems like the last sentence in this paragraph may be the main point.
- **Page 8, line 160:** Check to ensure that the AP Calculus syllabus is procedural or clarify. The course outline from College Board (https://apcentral.collegeboard.org/pdf/ap-calculus-ab-bc-course-a-glance-0.pdf?course=ap-calculus-ab) seems to indicate otherwise.
- **Page 12, line 217.** Suggest adding detail on "Integrated 1" and "Integrated 2" from the figure.
- **Page 13, line 256:** The antecedent to "This" is not clear.
- **Page 13, line 258:** What does "brains are fixed" mean? Suggest clarifying.
- **Page 15, line 306:** Delete new from "new mathematics," since it seems like a term best avoided.
- **Page 16, line 348:** Suggest deleting "foreign" from "foreign languages."
- **Page 20, line 470.** Do the authors mean a "number talk" or the "Math Talk Moves"? The authors should cite the researchers who developed these routines. (Chapin, O'Connor and Anderson for the latter).
- **Page 23, line 551.** This vignette is confusing. Where did the Ferris wheel come from? The example seemed to be about drone motion. Something seems to be missing. From a content perspective, include quantitative reasoning in this example.
- **Page 30, line 708.** Referring to "ability" seems like a fixed mindset thing to do.
- **Page 42, line 925.** Needs much more elaboration on principles of UDL and how they were included in this lesson.

- **Page 44, line 992.** It is nice that they include Disciplinary language development. Clearly it is the final thought. But developing disciplinary language should be a key part of the goals of lesson development, not an afterthought.
- **Page 50, line 1143.** Include discussion of language goals, math goals, and ELD supports in this section.
- **Page 57, line 1304.** Clarify what is meant by “traditional” in their content.
- **Page 64, line 1415:** The MP.3 explanation and example is copied from algebra. This seems like an error given the earlier statement on lines 1404-05. The MP.6 example of "rhombus versus a quadrilateral" is not a good example since a rhombus is a type of quadrilateral.
- **Page 84, line 1879:** This vignette as written is not appropriate given that it is asking a high school student who is not a member of the Inupiat and Siberian Yupik people to make a recommendation about how many whales they people should be allowed to hunt. Suggest changing the framing.
- **Page 88, line 1941:** Concerned that the taco cart example might be seen as cultural appropriation. Suggest changing this to another reference.

Thank you again for your attention to these recommendations. We also look forward to following up with additional examples of vignettes or strategies that could be considered for inclusion in the framework at a later date. Thank you again for the opportunity to offer our feedback in our shared goal to ensure that actionable principles of equity and access are incorporated within the Math Framework.

Sincerely,

Martha Hernandez
Executive Director
Californians Together

CALIFORNIANS TOGETHER
CHAMPIONING THE SUCCESS OF ENGLISH LEARNERS

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20 YEARS OF FIERCE ADVOCACY
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November 13, 2020

Instructional Quality Commission
c/o California Department of Education
Curriculum Frameworks & Instructional Resources Division
1430 N Street, Suite 3207
Sacramento, CA 95814

Public Comments re: Item 3A: California Comprehensive State Literacy Plan

Dear Instructional Quality Commission Members,

Thank you for the opportunity to comment on the California Comprehensive State Literacy Plan. As mentioned in our September letter, we appreciate the references to policy changes over the past ten years that support achievement for English learners (ELs) and multilingualism. This includes the English Language Development (ELD) standards that specify strategies for both designated and integrated ELD, the English Learner Roadmap, the State Seal of Biliteracy, and the California Education for a Global Economy Initiative.

After reviewing the public comment responses, we appreciate several of the recommendations, including the expanded focus on biliteracy, added references to language resources, and clarification that designated and integrated ELD is a legal requirement and therefore something that all LEA's "shall" provide as opposed to "should".

However, a key area of concern that does not appear to be properly addressed is the disproportionate focus on foundational skills at the expense of the other four themes of meaning making, language development, effective expression, and content knowledge. The response to several people commenting on this issue indicated that foundational skills and dyslexia were "identified as statewide needs". How was this determined and what are the data and/or results that point to these two specific needs? We are concerned that such a narrow focus on foundational skills can have devastating consequences for ELs, who also benefit greatly from the other four themes to build comprehension.

In 2006, the *National Literacy Panel for Language Minority Children and Youth* released its congressionally mandated report concluding with key findings: That while components of teaching reading skills are important for all students (including ELs), they are not sufficient for ELs and when made the cornerstone and sole focus of language arts instruction, result in a growing gap. The report pointed out that oral language had all but disappeared from language arts instruction and was the essential foundation of literacy for ELs.

Prior to the implementation of the Common Core Language Arts Standards, it was often observed that the students in lower grades could sound out the words perfectly and read with fluency. But when asked, "*What did you just read?*" or "*What was the story about?*", teachers

would get a blank stare and students often would say, "*I don't know*." For ELs, skill development devoid of language development can delay the acquisition of English proficiency and teaches students just to word call and not attend to the meaning of the text.

We hope that a key lesson from this past experience is to ensure that future literacy efforts have a more comprehensive focus on literacy and that all five themes are a part of all grants awarded to implement the California Comprehensive State Literacy Plan.

Thanks again for the opportunity to comment on this important matter.

Sincerely,

Martha Hernandez
Executive Director
Californians Together

CALIFORNIANS TOGETHER
CHAMPIONING THE SUCCESS OF ENGLISH LEARNERS

November 30, 2020

Mathematics Curriculum Framework and Evaluation Criteria Committee
c/o California Department of Education Curriculum
Frameworks & Instructional Resources Division
1430 N Street, Suite 3207
Sacramento, CA 95814

Dear Mathematics Curriculum Framework and Evaluation Criteria Committee (CFCC) Members,

Thank you for the opportunity to continue to comment on the 2021 Revision of the *Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve* (Mathematics Framework). This letter is signed by 15 California education advocacy and research organizations and county offices of education who are dedicated to the goal of ensuring that principles and practices of equity and access are incorporated within each chapter of the Mathematics Framework.

This letter contains comments and feedback focused on *Chapter 9: Supporting Equitable and Engaging Mathematics Instruction; Chapter 10: Technology and Distance Learning in the Teaching of Mathematics;* and *Chapter 11: Assessment in the 21st Century.* Across all chapters, we continue to see areas of improvements to better meet the needs of English learners and connect to students' experiences. What follows are chapter specific feedback to continue to improve on the great work produced the committee, writers, and staff thus far.

Chapter 9: Supporting Equitable and Engaging Mathematics Instruction

The chapter provides great guidance to support teachers to create equitable and engaged mathematics environments and provide quality instruction. There have been significant improvements to this chapter that should be commended, including within the addition of additional resources to support access and equity, stronger guidance to support English learner achievement, and a stronger focus on professional learning that is focused on access and equity.

Recommended Language Additions:

For this chapter, we are providing recommended language that we hope will be considered for inclusion within the Framework. This language includes a lesson study vignette that centers an ELD teacher and EL student, a paragraph on coaching for math equity, and a snapshot of what cultivating antiracist math educators can look like.

- **Vignette Focused on a Lesson Study Including an ELD Teacher and EL Student** (*by The California Action Network for Mathematics Excellence and Equity (CANMEE) Steering Committee*). The second grade teachers at 54th Street Elementary met during their PLC time to discuss the performance of their English learners in mathematics. All of the teachers noticed that their EL students were having difficulty explaining their solutions to

mathematics problems verbally and in writing. They invited the ELD specialist to the meeting to share their concerns and obtain suggestions for addressing the student's needs.

The ELD specialist had recently attended a public lesson focused on equity at another elementary school. The ELD specialist suggested that the second grade teachers consider participating in a lesson study focused on building the agency of their EL students. The teachers decided to engage in a lesson study cycle of 30 hours and followed the lesson study model of study, plan, do/test, and reflect. As part of the equity focus on lesson study, each teacher selected four EL students as focal students from their classes and interviewed them to determine their strengths and challenges in mathematics. Based upon the interviews and classroom observations, the teachers wrote assets-based descriptions for each focal student. The teachers met and shared their focal student descriptions. During the study phase of lesson study, the teachers read literature that centered on effective practices for EL (e.g., CA ELD Standards, CA English Learner Roadmap, Math Equity Toolkit, Mathematics, the common core, and language: Recommendations for mathematics instruction for ELs aligned with the Common Core (Moschkovich), and Second language development and implications for the mathematics classroom (Celedón-Pattichis & Ramirez, Eds.) As part of the plan phase, teachers designed a mathematics lesson with a task that required students to record their thinking in a journal, and share their ideas with a partner. One of the goals for the focal students is to increase their productive language skills. The teachers engaged in the mathematics task themselves to anticipate both productive and unproductive student strategies. The teachers developed questions to ask those students who used unproductive strategies. The teachers consulted with the ELD specialist occasionally for additional resources. The specialist posed questions to allow the teachers to do the thinking.

In the do/test phase, one of the teachers on the team volunteered to teach the lesson while the other teachers observed the lesson to determine the effect of the lesson they designed. An outside expert in mathematics content was invited to provide feedback on the mathematics content of the lesson, serving as the mathematics commentator. The ELD specialist served in the role of equity commentator. The ELD specialist observed the focal students' interaction with the lesson, their productive language skills, and their engagement with the lesson and with their peers. The second grade teachers also invited their colleagues at the school as well as parents to observe the public lesson.

After the lesson was taught, as part of the reflect stage, the team of teachers shared their thoughts and observations about the implementation of the lesson. The mathematics and equity commentators shared their observations of the lesson and provide suggestions for next steps. Other observers also made comments about the lesson.

At the end of the cycle, the second grade teachers reflected on the whole process. They found value in the ability to collaborate with their peers about a problem of practice that was specific to their school. The teachers also felt that the support from the ELD specialist was critical to their success. They all noticed an increase in agency among the focal students

as a result of process. Lastly, the second grade teachers felt more confident about their ability to meet the needs of their students who are English learners.

References:
Moschkovich, J. N. (2012). Mathematics, the common core, and language: Recommendations for mathematics instruction for LSs aligned with the Common Core. (Proceedings of the Understanding Language Conference, Stanford University.)

Ramirez, N.G., & Celedón-Pattichis, S. (2012). Second language development and implications for the mathematics classroom. S. Celedón-Pattichis, & N. Ramirez (Eds.) In Beyond Good Teaching: Advancing Mathematics Education for ELLs, (pp. 19-37). National Council of Teachers of Mathematics.

- **Coaching for Math Equity** (*by The Education Trust-West*): Instructional leaders are at various stages of readiness to engage in working towards math equity. *Stride 5: Sustaining Equitable Practice* from *A Pathway to Equitable Math Instruction* (www.equitablemath.org) is designed to support instructional coaches, administrators, or lead teachers who are seeking guidance on an approach to coaching in a way that addresses issues of equity in the math classroom. This guide focuses on developing cultural competence, emotional intelligence in both teachers and students, and the knowledge and skill-building of teaching. The exploration of these particular categories was inspired by Elena Aguilar's "Mind the Gap," a framework which asserts that the key to working with adult learners is to first identify the area where there is room for growth, and then to be intentional in addressing those areas. This tool presents the opportunity for coaches and teachers to choose the direction for math equity coaching that is most closely aligned to the appropriate area for teacher development and/or department- or school-wide goals. This tool is also inspired by Zaretta Hammond's book, Culturally Responsive Teaching and the Brain. The categories of coaching actions are loosely guided by the sections of Hammond's book. By interweaving these two frameworks, and directing coaches to the resources that support the intersections of ideas, the guide offers choice and multiple pathways so that educators can embrace math equity professional coaching in a way that best meets their needs. Meanwhile, this tool is not exhaustive and can therefore be thought of as a starting point for the work of coaching for math equity.

- **Cultivating Antiracist Math Educators** (*by The Education Trust-West*)**:** Educator self-reflection and growth is key to creating mathematics learning environments that are antiracist. *Stride 1: Dismantling Racism in Mathematics Instruction* from *A Pathway to Equitable Mathematics Instruction* (www.equitablemath.org) provides a helpful framework for identifying characteristics of antiracist teachers and a workbook for educators to examine their actions, beliefs, and values around teaching mathematics. The framework for deconstructing racism in mathematics offers essential characteristics of antiracist math educators and critical approaches to dismantling white supremacy in math classrooms by visualizing the toxic characteristics of white supremacy culture (Jones and Okun 2001; dismantlingRacism 2016) with respect to math. Building on the framework, teachers engage

with critical praxis in order to shift their instructional beliefs and practices toward antiracist math education. By centering antiracism, the workbook models how to be antiracist math educators with accountability.

Antiracist math educators deconstruct the ways they have been taught math to learn and teach math differently. Characteristics of Antiracist Math Educators:

- Design a Culturally Sustaining Math Space
- Center Ethnomathematics
- Make Rigor Accessible Through Strong and Thoughtful Scaffolding
- Prepare Students of Color to Close the Gap in Access to Stem Fields
- Embrace and Encourage Multiple and Varying Ways of Sharing, Showing, and Communicating Knowledge
- Support Students to Reclaim their Mathematical Ancestry

<u>Recommended areas of improvement:</u>

- **Line 55.** Recommend describing what are the elements or details of what is considered quality instruction.

- **Line 126.** In the section on *Professional learning for Equity and Engagement* there is a need to explicitly mention professional learning focused on the components of high-quality instruction that integrates the Common Core State Standards in Mathematics, the Standards for Mathematical Practice, and the California ELD Standards so that all students develop conceptual knowledge and the English language simultaneously.

- **Line 126.** In the section on *Professional learning for Equity and Engagement* recommend mentioning students in dual language programs learning mathematics in a language other than English and the importance of utilizing the home language as a strategy for access and equity.

- **Lines 142-149.** Suggest including linguistic exclusion as a key issue for engagement for English learners. This is a strong paragraph that is appreciated.

- **Lines 165-172**. On the quadrant titled *Enacting the Key Themes of Mathematics Instruction*, we appreciate that these are modified from the ELA/ELD Framework Key Themes but not sure that they would be the same. This might just need to be clarified.

- **Lines 173-215.** Suggest adding a point referencing the English Learner Roadmap as a resource. It is particularly important for teachers to have professional learning about the EL Roadmap since all teachers are language teachers. The following quote from the Roadmap might be considered: *"Underlying this systemic application of the Principles is the foundational understanding that simultaneously developing English learners' linguistic and academic capacities is a shared responsibility of all educators, and that all levels of the schooling system have a role to play in ensuring the access and achievement of the 1.1 million English learners who attend our schools."*

- **Lines 267-272**. Suggest that it is not just about "acknowledging the exclusionary history". This should also include implementing asset based, culturally relevant, and sustaining pedagogy.

- **Line 272**. Add a bullet point about the need for pre-service teachers to understand that they are teachers of both mathematics and language in order to provide equity and access to ELs. This would include the need for teacher preparation programs to include knowledge and use of the ELD standards and the pedagogy of integrated ELD.

- **Line 305**. Add that new teachers need to know who their English learners are and have support to differentiate instruction for diverse student populations.

- **Line 357.** Suggest including the importance of understanding students culture and identity, and how this connects to the history of exclusion for many, especially linguistically diverse students.

- **Lines 358-360.** "Funds of knowledge and other assets" are mentioned, but language should be specifically called out as teachers should be aware of the difference between students who know math and those who do not speak English enough to demonstrate what they know.

- **Lines 402-406.** Add language about who can be included in the feedback. We recommend including students and families as part of the feedback.

- **Lines 425-429.** Suggest also including a resource for planning effective professional learning connected to ELA/ELD. A connection can be made with Chapter 11 of the *2014 California ELA/ELD Framework*, in particular to *Figure 11.4 Addressing the Unique Needs of English Learners* and *Figure 11.5. Framing Questions for Lesson Planning*.

- **Line 585.** Suggest adding a description of what a blended model of professional learning is for those that are not as familiar with this area.

- **Line 698**. In the section of *Teacher Leadership*, include leadership to support dual language learners, which can reference the following resources: *NASEM Report - Overview*, *Leadership in Dual Language Bilingual Education: A National Dual Language Forum White Paper*, *Why Dual Language Works for Everyone, PK-12* (see pages 2-4 in Multilingual Educator), and *Bilingualism and Education in California & The United States, A Timeline 1975-2015* by Dr. Laurie Olsen,

- **Lines 747-748.** Should read "(5) mathematics classroom implementation of the California ELA and ELD standards" not "ELA/ELD standards".

- **Lines 748-749.** After “An explicit current in all of these roles must be access and equity for all students,” suggest making a connection to other areas of the chapter and framework where this is addressed.

- **Lines 797-801.** Suggest rewriting this phrase as “encouraging” student engagement and “encouraging” equitable outcomes are passive. The language can be stronger about creating structures and spaces where students are engaged, valued, and seen. Also suggest explaining what is meant by “equitable outcomes”.

- **Lines 823-826.** Suggest making a connection to the beginning of the chapter where Latinx, Black, women, and other students who have been traditionally marginalized are discussed.

- **Line 853.** Flagging that Chapter 10 on assessments was renumbered to Chapter 11.

- **Lines 939-945.** In addition to enlisting/engaging families, guardians and parents in understanding and supporting authentic math, we also recommend providing resources or providing examples of available resources that parents can utilize at home and in their home language.

- **Lines 947-960.** Suggest including asset based perspective of parents and families. There are many ways for parents to support math learning from home. However, just educating parents seems to be a “deficit” mindset. Parents, even if they do not know math or if they have learned in a different way, are able to support discussions, thinking, providing spaces for their children, and more.

- **Lines 949-954.** These opportunities can be powerful at family engagement in math instruction. Recommend adding that activities should be connected to real-world scenarios that families in that school community would relate to. Local leaders who parents can relate to can also be included (i.e. local engineer, scientist, doctor, etc.). It should also be added that the content for these opportunities must be culturally relevant.

- **Line 990-992.** This is a powerful perspective and “motive” for professional development. Suggest that this idea be stated similarly at the introduction of the chapter.

Chapter 10: Technology and Distance Learning

This chapter provides much needed guidance that will support teachers, students, and families and expand access to technology and distance learning. We appreciate the recognition of language considerations, particularly on page 21. Two main considerations for improvement include on expanding skills as an area in which students and families should be supported and in adding more explicit language about the cultural relevance and support for multilingual families.

Recommended language addition:

We are providing the following language that elaborates on how LEAs can ensure that distance learning is culturally relevant and includes opportunities for multilingual students and families. This language could be incorporated under *Principle 3: Learning Technologies Are Accessible for All Students*, *Ensuring Support for Distance Learning*, or anywhere else in the chapter.

> **Ensuring Cultural Relevance and Support for Multilingual Families** (*by Yee Wan, Ed.D.*): As LEAs are planning for distance learning that is culturally relevant, we must ask "How are we involving/partnering with multilingual families through the use of technology tools to maximize learning?" It is important to keep the following key ideas in the forefront.
>
> Building community and relationships: It is very important to build community and relationships with students and their parents. LEAs can monitor how students and their families are doing through phone calls, emails, surveys or home visits. It is crucial for parents or guardians to be able to connect with parent liaisons or other staff who can help parents navigate the different resources available in the districts or community. It is also important to have programs that address social-emotional wellbeing of the students and their parents/guardians to address issues such as stress, anxiety and feeling of isolation. Educators can open each class or day with a welcome activity or routine that builds community. For example, have students share how they feel by completing a Google form or choosing images that represent their feelings at the beginning of each day or class session. Students can also share their feelings in the virtual chat or digital journal.
>
> Leverage the funds of knowledge: Culturally responsive mathematics instruction capitalizes on students' funds of knowledge — the cultural and linguistic resources they bring into the classroom. The approach situates teaching and learning mathematics within the context of students' sociocultural experiences. It provides students with the opportunity to relate the learning of mathematics to their cultural frames of reference (i.e., background knowledge, native language) which helps develop their cultural identities and perceptions of themselves as capable learners of mathematics. For example, when teaching a unit on money, teachers can introduce different currencies, which could bring in students' funds of knowledge. Similarly, this applies to different systems of measurement or different ways of solving a division problem. Bringing in funds of knowledge is important as many students find mathematics challenging and could lead to mathematics difficulties that persist throughout their education.
>
> Meaningful learning with intentional language practice: LEAs can place a priority for teachers to create learning opportunities that are relevant and meaningful to the students. There are many everyday topics such as tracking the number of recreation patterns and consumer patterns that can turn into real life investigations using mathematics. These real-life investigations create opportunities for students to study topics that are relevant to them and their communities and develop data literacy and

agency for creating solutions. Educators can be intentional in creating virtual interactions for students to collaborate and discuss their ideas with their peers. They can be mindful and ensure that students have the opportunities to collaborate with each other in small groups and receive frequent feedback on their progress. Educators can also be strategic in identifying students who will need additional support in small group instruction.

Provide tech support: LEAs should be diligent in ensuring that students and parents/guardians know how to use the devices and applications that are used in student learning. Some LEAs offer small group in-person tutorial sessions for parents and guardians to walk them through how to access the school's online learning portal and the different learning applications. Some LEAs post recorded tutorials online. LEAs may consider hosting virtual or hybrid Families Learning Together events with a focus on closing distance through technology. LEAs can have students and parents engage in math activities using technology platform or applications as a way of preparing families to become familiar with the tech tools. A key feature of Families Learning Together is for parents and children to learn how to use tech tools together. This can help to strengthen the relationship between the parents/guardians and the children as well as supporting families in accessing the learning tools.

<u>Recommended areas of improvement:</u>

- **Lines 110-114.** Emphasize the importance of skills for students and family as well. For example, update "*if all students have **access** to a particular technology"* to "*if all students have **access and skill to use** a particular technology."*

- **Line 122-128.** Skill for students and families should be included for a technology rich setting. The point about skills only references teachers but should also include skills for students and families.

- **Lines 646-651.** While a great illustration, add some language about what it would look like for English Learners. Would a module be provided in a different language or have interpretation opportunities?

- **Lines 815 – 821**. In mentioning chronic absenteeism and a plan to monitor participation rates, the need to provide technological access and skills should be included. Improvement outcomes should include resources and supports on connectivity, technology, and digital literacy for both students and families. The following questions could be added: "How are students' progress and participation being considered to ensure they are utilizing all resources and receiving equal consideration to factors outside of their control?"

- **Lines 821-822.** Under "Identify Metrics to monitor progress in DL over time" add "*in their home language and in a method that is accessible to them*" under the second point about soliciting feedback.

Chapter 11: Mathematics Assessment in the 21st Century

The chapter has been improved in how it addresses English learners, including referencing their needs in specific areas and including a section titled: *Effective Assessment Strategies for English Learners*. There are also several places where home language is referenced although more clarity could be added. We also appreciate the language about students having the option to demonstrate knowledge of math concepts through the use of their home language (page 43).

Recommended areas of improvement:

- **Lines 84-85:** Elaborate on "Recommendations for equitable teaching and assessing" from Feldman and DeSilva. A core set of recommendations from these sources can be listed and described in this section to help provide more actionable guidance for teachers.

- **Line 102.** This would be a good place to indicate English learners' option to express their knowledge and problem solving thinking in either English or home language. This will give a more accurate picture of their understanding of concepts and logical thinking.
  For the state math summative test, LEAs allow English learners to express their math knowledge and thinking through the "stacked version" of the CASSPP. The scores in Spanish from this assessment are included in the accountability system.

- **Lines 157-158.** In the "Annual" section of the chart, Smarter Balanced should be substituted with CAASPP including a parenthesis to say English and Spanish, and CELDT should be substituted with ELPAC.

- **Lines 159-179.** The current description of formative assessment focuses on how feedback to students helps to communicate to students "where they are now, where they need to be, and ways to close the gap between the two places." We recommend adding guidance for teachers on how to use formative assessment to reflect on changes they can make to their instruction. The Indiana Department of Education has a rubric as a guide for teacher formative assessment and reflection (this resource could also be included in the collection of student rubric examples).

- **Lines 179-80.** After the chart this language can be inserted: "*All of the above student and teacher actions are linguistically challenging for English learners and when possible, students should be demonstrating what they know and can do in their language of strength. The language of instruction should match the language of assessment*."

- **Line 215.** At the end of the sentence prior to the Snapshot include the following language: ***"…****and with bilingual students who can serve as language brokers for the group allowing students to contribute in their home language*."

- **Line 233.** Explain how the teacher made sure that "many voices were included in the conversation," including specific strategies for cultivating discourse for English learners.

- **Line 234**. Explain how the teacher used the "best information he had ever had on his students' understanding of the mathematics" to adjust and refine his instructional practice.

- **Lines 280-281.** In the narrative for Snapshot 9.6 include language such as: "*During designated ELD time the teacher built background knowledge about worms and the discourse around measuring and comparison*."

- **Lines 281-282**. Inclusion of appropriate ELD standards should be added to the chart at the top of page 24.

- **Lines 402-415.** Include the following language: "*Standards-based report cards contain the language from the math standards that need explanations for parents to understand what are their child's strengths and challenges. It is suggested that building knowledge or simplifying the meaning of the content of the standards accompany the issuance of the report cards.*"

- **Line 462-464.** A resource that can be added to support teachers in collecting formative data about student language is ELL Language Shadowing by Dr. Ivannia Soto-Hinman.

- **Lines 584-591.** Insert the following language: "*The CAASPP Math assessment is available in Spanish in a "stacked version" showing the questions/problems in English and Spanish allowing the student to respond in the language of strength. Districts and schools need to designate which students should be given this form of the assessment and do the appropriate documentation before the assessment is given to provide this as a "designated support*".

Thank you again for the opportunity to offer our feedback in our shared goal to ensure that actionable principles of equity and access are incorporated within the Math Framework.

Sincerely,

Martha Hernandez
Executive Director
Californians Together

CALIFORNIANS TOGETHER
CHAMPIONING THE SUCCESS OF ENGLISH LEARNERS

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Executive Director
The Education Trust-West

20 YEARS OF FIERCE ADVOCACY
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January 14, 2021

Instructional Quality Commission
c/o California Department of Education
Curriculum Frameworks & Instructional Resources Division
1430 N Street, Suite 3207
Sacramento, CA 95814

Public Comments re: January 22, Item 12B: 2021 Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve

Dear Instructional Quality Commission Members,

Thank you for the opportunity to comment on the *2021 Mathematics Framework for California Public Schools* (Mathematics Framework). This letter is signed by 18 of California's educational advocacy and research organizations and county offices of education. We are writing to update this commission on our engagement with the Mathematics CFCC over the past year and to also express our vision for the Mathematics Framework and what it could mean for California's diverse student population.

Over the past year, our organizations have been active participants during each of the Math CFCC meetings, providing public comment and written suggestions for improvement. From the offset, our focus has been to ensure that the Math Framework includes assets-oriented approaches, principles and practices to close opportunity gaps in Mathematics, and strategies to meet the needs of specific student groups, such as the incorporation of English Language Development (ELD) standards and strategies throughout. As we look at the progress that has been made with each draft of the Mathematics Framework, we want to thank the CDE staff, Math CFCC members and writers, for their diligent work. Thanks to their careful consideration of our comments, we are pleased to see that the current iteration of the Mathematics Framework incorporated many of our suggestions. In particular, we have been pleased to see that the current draft includes:

- assets-based language and approaches that elevate student background and knowledge
- incorporation of relevant ELD standards and strategies;
- discussion of issues impacting equity in Math instruction;
- vignettes and examples that center on diverse students, such as English learners; and
- resources for educators to develop cultural competencies.

We look forward to our continued engagement during the 60-day review period and want to flag a few areas where our organizations will be focused. These include:

- **Guidance for instructional materials**, where we see opportunities to ensure that materials in multiple languages are available and that math materials instructional guidelines developed by the English Learner Success Forum are incorporated throughout;

- **Continued incorporation of relevant ELD standards and strategies**, to ensure that ELD standards are explicitly called out next to their aligned Mathematics Standards and that ELD strategies continue to be elevated; and

- **Continued elevation of the needs of diverse students in the vignettes and examples,** to ensure that teachers continue to see their students in the instruction and are provided with strategies that can meet the diverse needs of their students.

We continue to see the Mathematics Framework as a model for future framework updates and as an example for what is possible when equity and student needs are centered in instruction. Our sincerest appreciation again to the CDE staff, Math CFCC, and writers for their hard work and collaboration throughout this process. We are truly stronger when we work together!

Sincerely,

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Education Trust-West

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Californians Together

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April 8, 2021

Instructional Quality Commission
1430 N Street, Room 3207
Sacramento, CA 95814

Public Comments re: 2021 Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve

Dear Instructional Quality Commission Members,

Thank you for the opportunity to comment on the *2021 Mathematics Framework for California Public Schools* (Mathematics Framework) during the 60-day public comment period. This letter is signed by 18 of California's educational advocacy and research organizations and county offices of education. We look forward to our continued engagement during this process.

In this letter, we focus on the following areas of improvement, including:

- **Guidance for instructional materials**, where we see opportunities to ensure that materials in multiple languages are available and that math materials instructional guidelines developed by the English Learner Success Forum are incorporated throughout (*see our comments on Chapter 12, which include a mapping of the ELSF guidelines to the five categories*);

- **Continued incorporation of relevant ELD standards and strategies**, to ensure that ELD standards are explicitly called out next to their aligned Mathematics Standards and that ELD strategies continue to be elevated; and

- **Continued elevation of the needs of diverse students in the vignettes and examples,** to ensure that teachers continue to see their students in the instruction and are provided with strategies that can meet the diverse needs of their students; and

- **Improved language focused on authentic family engagement**, which is more important than ever as evidenced by the pandemic and opportunity to include families in real-world learning opportunities. In this area, we support the efforts by the Parent Organizing Network (PON) to work with families to provide additional input and their recommendations to:
    - Rewrite the "Role of Parents, Guardians, and Families" in Chapter 9 to broaden the vision and include family-school partnerships as a key concept;

    - Provide specific guidance throughout the chapters on how teachers can work with parents, and include examples on assignments or activities to help families assume their role as co-creators, supporters and valued partners in their children's education; and

- Consult with organizations working with families in math or science programs to re-write the sections mentioned above.

The following is specific feedback organized by chapter.

Chapter 2: Teaching for Equity and Engagement
We appreciate the explicit focus on equity within the chapter, including the recognition that engagement is an issue of equity and the centering of equitable practices as a pathway to social and racial justice in math. However, we see an opportunity within the chapter to add more specific and practical guidance for educators and school staff, and to elevate culturally responsive practices.

- Reframe the chapter around the Eight Competencies of Culturally Responsive Teaching Practices**.** While the Five Components of Equitable and Engaging Teaching is a starting point to reflect about the ways in which teachers create equitable and engaging learning environments, the Eight Competencies is a more complete, interconnected, and robust framework for this chapter. It is important to note that there are instances that could be detailed and developed further to address several of these competences. However, the following competences are not addressed: Reflect on one's cultural lens, Recognize and redress bias in the system, communicate in linguistically and culturally responsive ways and collaborate with families and the local community.

- Ensure that concepts of culturally responsive teaching (CRT), Universal Design for Learning (UDL), and others are practical and explicit. These concepts could use more development and offer clear connections to practice for educators. Providing concrete examples, details, and tools that teachers can use to meet the diversity in their classrooms will ensure that equity is actionable and not just mentioned. This can be improved by ensuring that the vignettes highlight CRT competencies, connect to UDL, and showcase equitable practices. he following concrete examples could be provided:
    - Modeling how to center an educator's knowledge of who their students are to develop culturally responsive and asset-based instructional approaches.
    - Examples of how to build on students' identity and naming student thinking visible, student voice.
    - Identifying the systemic issues that need to be dismantled, how to dismantle and rebuild them, and the impact that policies outside the classroom impact classrooms.
    - Examples of how CRT and language development work in tandem and an explanation of their interconnectedness.
    - Explore funds of knowledge that families and community contribute to the classroom environment as a way to bring in relevance and invite families as contributors to learning.

- Center student's math experiences in the SMPs and not merely mention an SMP. One common inequitable practice is limiting access to cognitively demanding mathematics.

This can be addressed by keeping SMPs in their fullness, central to classroom mathematics. The mention of SMPs should describe how that SMP is experienced by the learner in the context of the lesson and how this supports equity.

Specific recommendations by line:

Lines	Suggestions/ Comments
11-15	Reframe the Chapter so the 8 Competencies of Culturally Responsive Teaching is the framework for chapter 2. Equitable practices should go beyond access. Reframing mathematics so that in includes culture, linguistic diversity
98	Develop lessons or parts of lessons, a task that showcases an "equity lens" or the use of "culturally and linguistic resources." This will help make this chapter a tool teacher can use to Teach Math for Social and Racial Justice by implementing CRT and UDL
113-122	Develop these frameworks in practical ways. These are very specific points to create and deepen a teacher's understanding of how to address and engage in culturally and linguistic diversity.
131-171	Clarify the connection between the big ideas and cluster headings. This chapter should be addressing issues and competencies, other than big ideas.
172	Rewrite or explain how this vignette is addressing this section. In the fields of the Imperial Valley and Central Valley, fences are not commonly seen if present at all. It feels this is a transcript of a good task/lesson that was contrived to seem culturally relevant. Would recommend caution as it may mislead teachers to think that this task is culturally relevant, or it may offend a teacher, student who knows this is not culturally relevant. Love the use of geometry. Recommend looking into the book *Rethinking Mathematics* or *High School Mathematics Lessons for Teaching Social Justice* or books recommended in the above section. Refer to the statement made in lines 261-265 to determine if a vignette is hitting the mark
261-265	Say this earlier in the chapter. This should be a driver for this chapter.
365-372	Vignettes should show what making use of cultural and linguistic assets look like.
416-418	Instruction should include geometric perspectives to support algebraic thinking, especially for multilingual learners in the book Beyond Good Teaching, the authors state that in mathematics there is a 5th language

	demand: Representation. Geometric perspective is a way to support this language demand.
691-692	Use this competency as the outline of topics to discuss in this chapter. The 8 Competencies are a better option for this chapter than the 5 components listed at the beginning of this chapter.
857-882	Great language but it can be improved by clarifying the connection.
1138	Linking to the UDL website is not as helpful since the site is huge and overwhelming. Suggest connecting with Rachel Lambert and the work she is currently working on with Math and UDL.

Chapter 6: Investigating and Connecting, Transitional Kindergarten Through Grade Five
The chapter references relevant and multi-modality lessons and tasks where there is an opportunity for working with partners, small groups, and the whole class. The references and examples to ELD standards and supports for English learners are also a positive. The main improvements that can be made center around improving the examples of language access.

- Include more specific strategies for teachers to think about the language demands of content. This could include a reference to the specific language of the discipline of math (both specific vocabulary and the language structures) that must be used and understood to comprehend and communicate mathematical ideas. In particular, teachers of English Learners should be thinking about the language demands of the content to be able to prepare English Learners adequately. The preparation should include providing opportunities for oral practice of the pertinent language structures as well.

- Explicitly list the supports and scaffolds that support ELs. Though the chapter has supports and scaffolds for ELs embedded within the text, it can get lost in all the text. It would be helpful to list these supports and scaffolds more explicitly.

- Reference strategies to engage families in their students' education. This is a component that was not noticed and explicitly mentioned in the chapter.

<u>Specific recommendations by line:</u>

Lines	**Suggestion/Comments**
57-60	Add teaching the academic language of mathematics, and the complex sentence structures in order for students, especially English learners to communicate their ideas Teachers need to teach and model the language of mathematics as well as giving students opportunities to practice that language.

106	"practice the discourse of 'compare and contrast' *in a mathematical context.* The language of compare and contrast is different in math: more than, less than, equal to, greater than, how many more, how many times more.
200	Add that Mrs. Verner adds these words to the math cognate chart that she has in her classroom to both elevate the value of home language and to make those cross language connections that accelerate English Language Proficiency. Supporting students to access their home language as a resource to develop English proficiency is particularly salient in math and science, as there is high correlation in cognates across Latin-based languages.
217	Use (if needed) that sentence starters and models a couple of possibilities from the frames listed on her math wall. This would support modeling language for ELs.
238	In providing translations in students' home language, clarify that an assumption cannot be made that students can read in their primary language.
345	Entire section repeated from above
440	Add, "while these support all students, they are especially important for English Learners".
803	Great resource that highlights how language affects students' understanding of the mathematical task/operation. However, there seems to be a missing connection to providing this resource without raising the need to consider language.
Page 44 graphic	Add "teach language of the discipline/math" to this chart. For all students, the language of math- not just the specific vocabulary but the way we structure mathematical questions can be confusing and even more for ELs.
1341	The rest of standard C.12 is left out
1428	Links to Illustrative Mathematics do not link to the actual lessons but to a website where to sign up for services or link to another service where you might find free lessons. As a teacher, this is not helpful for me if I am looking for this lesson example.
1471	Call out language here since it can play a key role in this example. Suggest something like "As you read through the problem types, think about how this language might be confusing for English Learners." This math language is hard for all students, without specific breakdown and thought to how the language is used- we are missing the needs of ELs

2036	Could add that many English Learners are more comfortable sharing their thinking in a small group setting.
2077-82	Add: "ELs especially need this explicit teaching." The use of precise mathematical terms is essential in order to support all students' understanding. ELs will be confused more if casual language is used and the correct terms are not used consistently.
2148	Could add: It is important that ELs learn the precise language for reading decimals. Imprecise reading of decimals will undermine understanding and meaning making.
2158-64	In Mathematics the language function of Compare and contrast is essential for students to express understanding. The structures to use compare and contrast language must be taught explicitly. This will benefit all students, especially ELS. We cannot assume that students don't understand the concepts if the response is weak. They just may not have the language to express the understanding of the relationship between decimals and fractions.
2264	After situations add: "and can support Language Learners with a visual of an abstract concept".
2700	It would be great if the teacher presented some writing support for English Learners here. Sharing their response with a partner, reviewing sentence frames to describe and explain, and reading their writing to a partner when they were finished.
2774	Add: "However, it is important to point out that English Learners need additional support to develop the language to both comprehend the content and express their ideas."

Chapter 7: Investigating and Connecting, Grades Six through Eight

The chapter includes good recommendations for teaching academic concepts through the various sections. We also appreciate the vignette on page 47 that is clearly an example of planning and teaching with EL considerations and the other considerations for ELs throughout the chapter. However, there needs to be more places where language development and EL centered strategies and scaffolds are identified in conjunction with the mathematics instruction recommendations. For example, an introduction or end phrase could be included within examples to signal the specific considerations needed for discussions and interacting with the language and concepts of the lesson for ELs. The connection to Chapter 2 can also be more explicit when it is referenced by including specific page numbers.

Specific recommendations by line:

Lines	Suggestion/Comments

50-54	Recommend including a description of who are the underrepresented students in STEAM fields.
56-57	Recommend Including: “And also connect to meaningful and relevant experiences.”
68-70	Recommend making a connection to the importance for teachers to acknowledge and leverage diverse identities and linguistically diverse students in their classrooms.
81-84	This paragraph presents an “ideal” of what the classroom environment should be. Chapter 2 is mentioned, but recommend that asset base, culturally responsive, and linguistically responsive environments are explicitly mentioned.
87-89	Important to make a note about the need for teacher’s need to recognize and make space for linguistically diverse students and for the use of asset base culturally responsive pedagogy in order to see and hear how students are expressing their mathematical ideas and thinking. Also describe what are “useful indicators” of deeper understanding for ELs and diverse students. Would be important to connect to other chapters in the framework where this methodology and strategies are explicitly highlighted.
104-108	It is good to mention Ch. 2. However, explicit mention of language development strategies while learning the language of the discipline should be included.
144-147	Recommend to also include the use of their first language as a support
159-161	While providing appropriate EL supports and scaffolds for language development and communication of their deeper thinking.
278-280	Suggest adding that EL centered strategies and scaffolds should be part of the planning and instruction, to allow students to have greater access.
289-292	This is an excellent point. Recommend including that teachers should be able to recognize that what seems to be gaps could also be a result of second language learning and not of being low achievers, and that appropriate EL centered scaffolds and supports must be provided.
297-299	What educators perceive as an apparent lack of understanding may be a language development related issue. **Interventions should include EL strategies and scaffolds.**
337-340	Suggest including a reminder that discussions with a lens for appropriate scaffolds, strategies and supports for linguistically and culturally diverse students is key for ELs to engage and have access to **come to concepts and connections of the big ideas**.
345	Lesson design must include language development and supports.
384-387	Great connection to professional development. Recommend making a connection specifically to section in the framework where equity is addressed in chapter 2 and chapter 9. Suggest that asset-based pedagogy be referenced here as well.

398-401	Suggest citing the TODOS article that addresses tracking and anti-racist mathematics. And include a link: https://www.todos-math.org/assets/The%20Movement%20to%20Prioritize%20Antiracist%20Mathematics%20Ed%20by%20TODOS%20June%202020.edited.pdf This is a larger document that addresses other equity issues as well: https://www.todos-math.org/assets/images/The%20Movement%20to%20Prioritize%20Antiracist%20Mathematics%20final%203.0_February2021v5.pdf
402-404	It is helpful to make a connection to Chapter 2- Recommend including a link that takes the reader to that specific section of chapter 2 and/or providing specific page numbers to locate that idea/concept.
504-508	Great description of how the Drivers for investigation lead instructional planning. Recommend signaling the importance of including planning for language development and EL centered scaffolds and supports,
600-602	The introduction to this snapshot mentions ELD, but ELD is not clearly highlighted in the snapshot. It is a great snapshot of interdisciplinary thinking and great planning form the teacher. However, recommend that the ELD strategies that were used are highlighted and labeled.
678-680	Recommend that there is an intro or a comment after the snapshot, delineating the specific considerations that the teacher should keep in mind for planning and during the lesson to ensure that ELs have access to the content and are able to engage in observations, conversations and analyzing the data collected.
734-736	Suggest revising this sentence.
751-753	Recommend adding the bolded content: "any necessary **language** supports, scaffolds, and time to process it, and discuss what they notice. **This will help students engage in conversations and in describing their observations and insights."**
779-782	This is a great lesson with a lot of potential and wonderful resources. Recommend that connections are made to culturally responsive pedagogy. The topic affects students from disadvantaged communities or cultural backgrounds. It is crucial to acknowledge how this topic might directly affect students from lower income families.
813-814	The social-justice element at the end of the lesson feels a little removed from many students lived personal and family experiences. Recommend that it is explicitly encouraged to make culturally appropriate connections.
Page 35	Great to include the TAKING ACTION suggestion. Recommend, that especially for the 4th suggestions, EL centered scaffolds, supports, resources, etc. be linked to, and highlighted as a crucial part of creating an environment of discussion, conversation, and argumentation where ELs can engage and participate in.
852-855	Great connection to sports. However, it is crucial to remind teachers to acknowledge not just cultural differences, but gender, and class that give

	students access to sports and kinds of sports.
1057-1059	Recommend reminding teachers of the need to be aware of language needs of students especially EL's and the vocabulary development that might be needed to engage with words and concepts such as "steepness".
1061-1065	Recommend including a reminder to teachers of the need to be aware of language needs of students especially EL's and the vocabulary development that might be needed to engage in a deeper understanding of the concepts.
1516-1518	Recommend including a connection to chapter 2 and 9 regarding students' lives, identity, culture, and how these impacts their understanding and interpretation of this area of mathematics. Especially in relationship to vocabulary.
1534-1538	Recommend including a connection to chapter 2 and 9 regarding students' lives, identity, culture, and how these impacts their understanding and interpretation of this area of mathematics. Especially in relationship to vocabulary.
1538	Recommend to intro or end this vignette with a reminder for EL considerations.
1551-1552	Recommend Signaling for EL supports for discussions, especially scaffolds to include geometry vocabulary such as "face"

Chapter 8: Investigating and Connecting, Grade Nine Through Twelve

The chapter offers good strategies for ELs and other students, along with connections to ELD standards. The strategies for addressing placement, differentiated instruction, and tracking are equity focused. Moreover, the language on using authentic contexts that are relevant to the lives of students elevates cultural relevance. The recommendations provided are meant to strengthen the cultural relevance and connection to students' lives. For example, "culturally-relevant" can be added wherever "relevant" is mentioned or described throughout the document.

Specific recommendations by line:

Lines	Suggestion/Comments
717-721	Suggest adding student-centered questions that are more relevant to the lives of students. Other possible questions include: - Who is most affected if we do not try to fix problems related to climate change? - Who is most affected if we do? - How does our understanding of climate change affect the solutions we choose? - Should we be concerned about climate change? What are the reasons for concern?
817	The Whale Hunting in Alaska vignette could be replaced with a scenario that is relevant to students in California or at least a region in California (Earthquake

	preparedness, power supply interruptions, drought, shark attacks, availability of clean water, and forest management are examples of such environmental issues.)
119	The language on "strong" might merit another look to define what a strong math student is. Students have strengths that often go unrecognized because we have such a narrow definition of what it means to be "smart" in math.

Chapter 9: Supporting Equitable and Engaging Mathematics Instruction

The chapter focused on teacher development and learning opportunities specifically in how to engage and support students with culturally or linguistically diverse backgrounds. It refers to the importance of reaching out to a broad system of support to enable all students to succeed in their mathematics learning and that this approach consists of many interconnected parts. Moreover, the chapter does a good job of dispelling the myths about some students having an aptitude for math. The references to research, resources, and examples make it clear that math is for every student.

However, there is a missed opportunity in the chapter as it does not refer to partnership with parents, families, or caregivers until the end. The chapter also does not offer suggestions for administrators to include parents as a way for building learning opportunities for teachers. There is also no mention of integrated or designated ELD in this chapter and a discussion of collaborating with ELD teachers in secondary would be helpful to assist in previewing the discourse of mathematical concepts.

Specific recommendations by line:

Lines	Suggestions/Comments
119-121	Providing an example or two to elaborate on the point.
431-432	It might be helpful to provide examples of "math specific-support" or to point readers to page 19, lines 462-492.
403-405	Suggest adding the following language in bold: "Language needed for disciplinary thinking and concepts should not be taught in isolation, but in the context of what students **relate to** and need to know to access and communicate mathematical thinking."
441-443	Suggest adding the following language in bold: "Ensure that beginning teachers understand who their students **and families** are, in particular their emerging multicultural learners, their interests, aspirations, and **cultural and environmental** backgrounds and how to use those as resources for learning."
562-566	Recommend that a shared vision includes collaborating with families and that it be specified in the chapter. Teachers may gain a better understanding by learning about their student's holistically.
747-748	Suggest adding the following language in bold: "The mathematics and equity commentators shared their observations of the lesson and provided suggestions for next steps. **Other observers also made comments about the lesson**." This should

	cause trainers to rethink about how they approach the instructional materials training with the narrow focus on the treatment of standards.
815-818	Explicitly state that the comments of parents were taken into consideration, as it is often overlooked. "Other observers" [including parents]…"
899-903	Although referencing ELSF and a few guidelines is good, it requires more language to draw a connection to the substance of the guidelines and also some discussion why this is important for ELs
970-974	It would be helpful to provide examples of coaching used as a tool to support the collective learning of teachers and examples of effective coaching cycles. It is not a good idea to ignore the value that effective individual coaching can add to a teacher's practice. Harvard MQI Framework is a good example of an effective coaching cycle model.
1009-1014	If teachers are sharing and learning from each other, it could be helpful for administrators to create a learning opportunity with families especially those who are culturally and linguistically diverse. Teachers would gain a better understanding by working with and partnering with families which would provide teacher with knowledge and insight to support teacher leadership.
1099	Reference families as a resource for teachers and schools. Families may be able to offer insight as to how mathematics was presented or not present in their country/home/culture.
1157	While allocating specific section to parents, guardians and families in the chapter is commendable, the importance of such partnerships should also be intertwined within the whole chapter. Teachers with learned experience or who come from culturally diverse backgrounds may be able to add crucial insight and support those teachers who may not.
1162-1164	Add the following language in bold: **"Partnering with** parents, guardians, and families in understanding and supporting authentic mathematics education and active learning pedagogy is key."
1233-1237	Rewrite PIQE description to: "The Parent Institute for Quality Education (PIQE) (https://www.piqe.org/) is a national organization ~~which originated in~~ **founded in** San Diego, ~~and is working mostly in~~ **serving families throughout** California, ~~with~~ **offering** evidence-based programs that engage, empower and transform parents to actively ~~engage~~ **participate** in their children's education and strengthen parent-school collaboration."

Chapter 12: Instructional Materials

This chapter is of critical importance to ensure that LEAs, schools, and teachers have the resources that they need to meet the needs of the specific needs of their students. Here are our general recommendations for chapter 12, followed by additional line specific comments.

- Incorporate the math instructional materials guidelines developed by the English Learner Success Forum throughout. The 15 Guidelines for math instructional materials provide pathways for simultaneous development of disciplinary knowledge, language,

literacy and math for ELs, and guide content developers and educators in developing content materials that are inclusive of ELs through meaningful integration of their backgrounds, explicit attention to language needs, and carefully designed language supports. The guidelines are mapped to each of the five categories for math instructional materials in Chapter 12 below:

- **Category 1: Mathematics Content/Alignment with the Standards**
  - Mathematics and language goals are aligned to the Math and English Language Development standards and organized into an intentional progression.

- **Category 3: Assessment**
  - Examples of descriptions, illustrations, and examples of quality work and mathematical practices with varying levels of English language proficiency are included.
  - Assessments are structured to capture student' growth and progress with both mathematics and language.
  - Include guidance for recognizing and attending to student language produced to inform instructional decisions.

- **Category 4: Access and Equity**
  - Instructional materials guide configurations of students in whole-group, small group, pairs and individual work to strategically use that time to support ELs.
  - Include guidance for anticipating potential language demands and opportunities in student activities.
  - Provide guidance to use contexts for connecting mathematics to students' lived experiences.
  - Resources challenge teachers to reflect on their own values and beliefs in regard to language, mathematics and learning.
  - Activities are structured to encourage students to use their existing language to participate (rather than use prerequisite language as a barrier to getting started).

- **Category 5: Instructional Planning and Support**
  - Afford regular opportunities for students to revisit and revise their work and mathematical thinking.
  - Guide students to consistently and strategically communicate (speak, listen, read and write about mathematics and for specific purposes.
  - Include opportunities for students to interact with and produce a variety of methods and representations.
  - Materials afford students opportunities to engage in purposeful uses of mathematical practices with guidance for teachers in supporting them.
  - Maintains appropriate challenge and high expectations of mathematics learning for EL students.

        - Includes guidance for facilitating mathematical discussion and co-construction of meaning.

- Require that Math instructional materials meet standards for equity and meeting the diverse needs of students, including ELs. Given the significant number of English Learners in California, instructional materials should be required to align with their needs.

- Include a section with guidance on what quality is in instructional materials for districts in their selection process. This is important, given the autonomy in selecting materials provided by local control and how important the framework is to their adoption decisions.

- Provide guidance for the online synchronous and asynchronous requirements for instructional materials. This is important given the expansion of virtual and hybrid learner, and would help districts be more prepared during future emergencies.

Specific recommendations by line:

Lines	Comments/Suggestions
67	Add "sense-making"
81-83	Add the following language in bold" This framework's answers to the challenge posed by the principle of coherence are to focus on: (a) big ideas; (b) progressions of learning across grades; (c) relevance to students' lives; and (d) high-quality first instruction **and communicating mathematically about big ideas**."
215-216	Suggest changing language to: "fully integrate content into strategically designed opportunities for students to use the mathematical practices"
223	Add another bullet point stating that instructional materials should make clear how to teach effectively through investigations (such as task clarity and set up, guiding questions when needed, need to wrap up and make sure the essential mathematical connections are made explicit for all students.
227-228	Suggest changing language to: "Intervention components, if included, are designed to help teachers and students flexibly and meaningfully respond to students' progress in mathematics."
239	Replace "to extend ideas" with "**develop prevision in mathematical language**"
260	Change from "mathematical practices" to **"including the language needed to participate in the mathematical practices"**
292	Change from" Student materials are appropriate for use with all students." to **"Teacher materials must provide explicit attention to the development of mathematical discourse and formative assessment of mathematical language."**
333	Add "and make clear how to connect concrete representations to abstract or numerical representations."
347	Replace "language objectives" with **"specific strategies to support students in developing the language needed to meet those mathematical language objectives."**

	Add detail
391	Add the following language in bold: "learning **of concepts, mathematical practices, and language needed to express them."** Add detail (bolded section).
437	Add "sense making"
446	Add "comparing"
492-494	Add the following resources to provide more depth and focus to reviewing curricular materials for specific purposes. ● "For more information on supporting students with unfinished mathematics learning, please visit https://achievethecore.org/aligned/designing-shifts-aligned-interventions-in-the-math-classroom/ " ● "For more information on supporting English Learners, please visit https://www.elsuccessforum.org/math-guidelines"
527	Replace "Moreover, all students, regardless of background, should be engaged in reasoning and sense-making [RS1] on a daily basis, and schools should support teachers in achieving this goal." with **"In order for students to engage in reasoning and sense-making about mathematics, explicit attention to the language needed to do so must be built into the teacher and student materials (see Judit Moschkovich, 2012)."**
Pages 8-9	There is an opportunity under "Program Organization" to call out supports for specific student populations that would benefit from supports: English Learner supports, Culturally responsive materials, scaffolds for students who need support from bridging learning two or more grade levels below, etc.
Pages 10-11	There is an opportunity under "Assessments" to set an expectation for usability of curriculum embedded assessments to scaffold learning.
Pages 11-12	There is an opportunity under "Access and Equity" to specify what specific supports should look like for student groups in both teacher and student materials (English learners, students with disabilities, etc.).
Pages 12-13	There is an opportunity under "Instructional Planning and Support" to describe expectations for equitable instruction.
223	Add another bullet point stating that instructional materials should make clear how to teach effectively through investigations (such as task clarity and set up, guiding questions when needed, need to wrap up and make sure the essential mathematical connections are made explicit for all students.
333	Add "and make clear how to connect concrete representations to abstract or numerical representations."
437	Add "sense making"
446	Add "comparing"

Thank you again for the opportunity to provide feedback on the Math Framework. As always, we are happy to provide additional details or answer any questions.

Sincerely,

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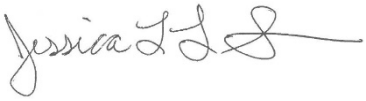

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May 7, 2021

Instructional Quality Commission
c/o California Department of Education
Curriculum Frameworks & Instructional Resources Division
1430 N Street, Suite 3207 Sacramento, CA 95814

Public Comment re: 2021 Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve

Sent via email

Dear Instructional Quality Commission Members,

We are a group of 33 organizations and more than 100 stakeholders representing parents, math educators, education advocates, researchers, and county office offices of education who are deeply invested in the 2021 Mathematics Framework for California Public Schools. We see the math framework revision as a critical opportunity to improve mathematics learning and address equity issues that have historically widened the opportunity gap for students of color, students from lower income communities, and multilingual learners.

The Instructional Quality Commission (IQC), the California Department of Education (CDE) and the Mathematics Curriculum Framework and Evaluation Criteria Committee (Math CFCC) should be commended for their collective commitment to equity and intention to include practices to ensure inclusion, equity, and meaningful access for all students.

Based on our experience, research, and practice, we support the current draft of the math framework revision that cites how race, class and gender can be a factor in mathematics learning and that "the messages students receive about who belongs in mathematics are biased along racial, socioeconomic status, language, and gender lines, a fact that has led to considerable inequities in mathematics." (Ch. 1: Introduction). Additionally, we appreciate the recognition that "instruction and equity together create instructional designs that can bring about equitable outcomes." (Ch. 1: Introduction) But good instructional practices alone cannot address longstanding historic and systemic inequities.

Over the last year, The Education Trust-West and Californians Together have led a coalition of more than twenty organizations to provide expertise and input to the math framework revision. We agree with the statement in Chapter 1 that says "To develop learning that can lead to mathematical power for all California students, the framework has much to correct; the subject and community of mathematics has a history of exclusion and filtering, rather than inclusion and welcoming." We have reviewed draft chapters, provided feedback, and offered suggested language and resources. The Math CFCC voted to pass many of our recommendations as part of its review process.

Now, a group of individuals are opposing concepts about equity in math instruction that goes directly against the goals and vision of the draft mathematics framework. In particular, they are misrepresenting one of the resources we recommended, a toolkit called *A Pathway to Equitable Mathematics Instruction,* an integrated approach to mathematics to help educators improve their instruction to engage historically marginalized students. We would like to correct the record and directly address this group's misrepresentations:

- Written by educators –- a majority of whom are educators of color –- from twenty-five organizations and institutions in California and beyond, *A Pathway to Equitable Mathematics Instruction* was developed to provide educators with tools to think differently about math instruction, especially in light of the pandemic and disruptions to the last and current school year.
- A guiding principle of *A Pathway to Equitable Mathematics Instruction* is that equitable access to grade-level standards should be universal. The toolkit provides tangible guidance and tools aligned with the vision of equitable and engaging mathematics instruction that is presented in the current draft math framework. Each section, or "Stride" in the toolkit is designed around innovative and research-based approaches to addressing barriers to equity while considering the instructional, institutional, and cultural contexts.
- Stride 1 of the toolkit provides guidance for educators to engage in a process of reflection, learning, and growth that seeks to illuminate the ways that the dominant white culture has shaped traditional mathematics instruction. It provides educators with a workbook to reflect on their current teaching practices and to consider how to create more engaging and equitable learning spaces by exploring anti-racist teaching practices. These practices create inclusive points of access, to ensure that all students engage in relevant, powerful, and standards-aligned mathematics. This practice of reflection is similar to the process of critical race theory that is described in California's newly approved Ethnic Studies Model Curriculum as: "A practice of interrogating race and racism in society. Critical Race Theory recognizes that race is not biologically real but is socially constructed and socially significant. It acknowledges that racism is embedded within systems and institutions that replicate racial inequality – codified in law, embedded in structures, and woven into public policy."
- Stride 1 has been recently updated with revisions based on feedback from practitioners in the field. We believe these revisions will help to clarify the language of the Stride and invite educators to engage in a process of reflection and growth. You can access the updated version at www.equitablemath.org.
- The other four Strides of *A Pathway to Equitable Mathematics Instruction* provide additional guidance and tools for supporting equitable instructional practices such as mathematical discourse; social, emotional, and academic development; scaffolding for language; and coaching structures to support reflective and equitable instructional practices. All of these are aligned with the CA state standards and practices identified throughout the draft math framework and offer tangible tools to translate the framework guidance into classroom practice.

With the pandemic disproportionately impacting communities of color and issues of racial injustice becoming more illuminated, educators across California and beyond are calling for culturally relevant and anti-racist curriculum and instructional guidance. The toolkit has been a central component of the professional learning curriculum of The California Partnership for Math and Science Education's Mathematics Community of Practice this year, and many school districts and county offices of education have offered trainings to support toolkit implementation. For example, one district leader wrote "Thank you for putting this tool and the other Strides together. We just introduced Stride 1 to our secondary department heads yesterday. This resource is what we have been needing and waiting for!!!!"

As members of the Instructional Quality Commission, we recognize the important role you play in the broader conversation about race, equity, and inclusion in California schools and classrooms. The math framework revision is one of the most important decisions you will make that will directly affect student outcomes and generations to come.

It's time to recognize that only focusing on math instructional strategy without acknowledging cultural and systemic conditions will keep yielding the same disparate outcomes, predictable by race, socioeconomic status, and English proficiency status. We need a transformational shift in math instruction and a framework that is responsive to the needs of educators and California's culturally and linguistically diverse students.

We are available to provide additional information or to meet with IQC members who may have questions. Thank you for your ongoing commitment to supporting learning that can lead to mathematical power for all California students.

Sincerely,

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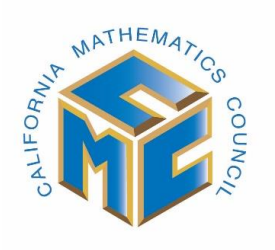

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