

Miller Creek School District Board Study Session

California Math Framework and Middle School Math
December 8, 2022



Today's Outcomes & Plan

Today's Outcomes:

1. To understand the purpose of the California Mathematics Framework
2. To begin building a shared understanding of the guidance from the [drafted California Mathematics Framework](#)
3. To understand the various possibilities for math pathways for the 2022-23 school year

Today's Plan

1. Defining the Study Session
2. What is a Math Framework and how does it impact our work?
3. Thinking Deeply About the Framework
4. Status of Miller Creek Middle School Mathematics
5. Math Pathway Possibilities for the 2022-23 School Year

Welcome Participants: Trustees, Administrators, and Miller Creek Math Team

Protocols for Participation

- Listen with an intention to learn. We are all coming into this with different experiences and knowledge.
- Share the air: create space and time so that all have the opportunity to speak.
- Ask questions to clarify challenging ideas/statements and discomfort.
- Challenge ideas and not the person.
- Take responsibility for your impact even if it was not your intention.
- Use “I” statements to avoid generalizations about the experiences of peoples & groups
- Affirm the ideas, experiences, and reflections each person contributes to the group
- Expect to seek next steps. This is a process. Today is just one step.

Defining the Board Study Session

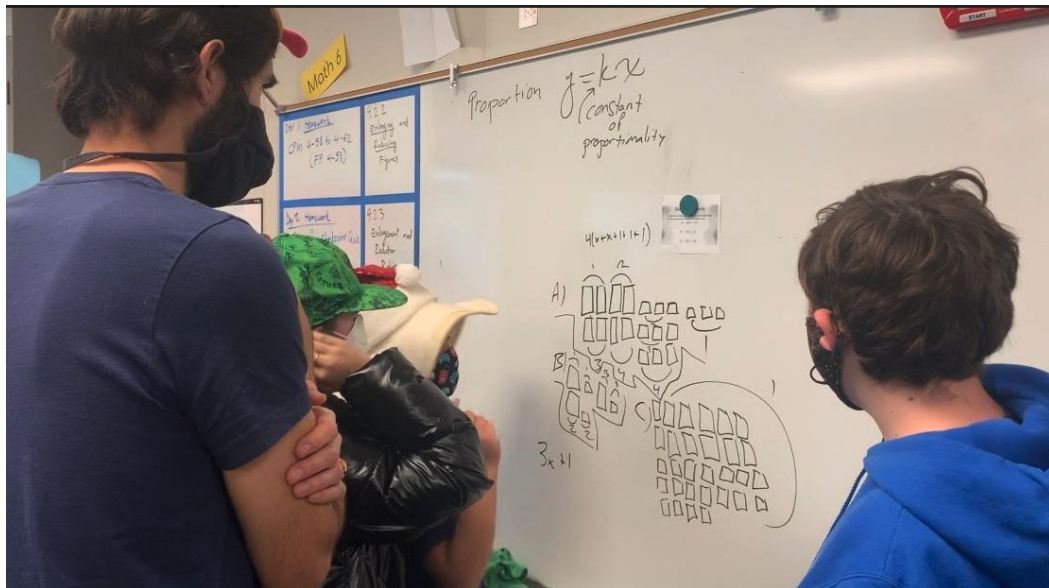
A Study Session allows time for the Board to deeply focus on one topic

A Study Session is open to the public, and public comment is invited during the Public Comment item specified on the agenda

No action / decisions will be taken by the Board

Tonight's focus is on the State of California Drafted Mathematics Framework and pathway possibilities for the 2022-23 school year

Centering Ourselves in the Math Classroom



What is the California Math Framework and how does it impact our work?

Curricular frameworks are adopted by the State Board of Education and offer guidance for implementing content standards. Frameworks describe the curriculum and instruction necessary to help students achieve proficiency, and they specify design of instructional materials and professional development. Further, they provide guidelines and selected researched based approaches for implementing instruction to ensure optimal benefits for all students. (CDE, 2021)

What is the California Math Framework and how does it impact our work?

- Content standards K-12
- Practice standards
- Based in current research
- Curricular design is based on the Framework

The drafting of the Math Framework began in 2019 and has a new adoption date of May 2022.



Thinking Deeply About the Framework

Please read the selected excerpts from Chapter 1 and Chapter 7 of the drafted CA Mathematics Framework.

Highlight and annotate sections of interest.

Be prepared to share your thinking with a partner.

Dyad Discussion- Mindful Inquiry

Share a Wow and a Wonder

1. Partner A reflects for 60 seconds while Partner B listens
2. Partner B reflects for 60 seconds while Partner A listens
3. Partner B asks Partner A *mindful inquiry* questions to deepen the narrative (2 minutes)
4. Partner A asks Partner B *mindful inquiry* questions to deepen the narrative (2 minutes)

Mindful Inquiry

Listening to understand...

What I heard you say was...(use their words)

Tell me more about what you meant by...

How did ___ affect you? How does it affect you now?

What do you need/want...

Frequently Asked Questions About the Framework

(CDE, 2021)

Does the draft *Mathematics Framework* eliminate middle school mathematics acceleration programs?

No. The draft *Mathematics Framework* does not eliminate middle school mathematics acceleration programs (including programs that offer Integrated Math 1 or Algebra 1 courses to grade eight students). The draft *Mathematics Framework* emphasizes the importance of following the **sequenced progression** of topics laid out in the Common Core State Standards for Mathematics (CCSSM) and considers the latest research on the impact of skipping grades or undermining the sequences progression. Additionally, the **CA CCSSM are significantly more rigorous than those from previous grade eight content standards**. They address the foundations of algebra and geometry by including content that was previously part of the Algebra I course, including but not limited to a more in-depth study of linear relationships and equations, a more formal treatment of functions, and the exploration of irrational numbers.

The IQC discussions from the May 2021 meeting underscored that the decision about acceleration/honors and AP courses is a local one and requested **that the next draft include specific guidance on acceleration (including middle school acceleration)** and serving high achievers and gifted students. Those changes will be reflected in the guidance that is posted for the second 60-day public comment period.

Frequently Asked Questions About the Framework

(CDE, 2021)

Does the draft *Mathematics Framework* remove high school calculus?

No. The draft *Mathematics Framework* includes calculus in the possible high school pathways, while also presenting research that the “rush to calculus” without the depth of understanding is not helpful to students’ long-term mathematics preparation.

Data shows that about one-half of all high school students who take calculus repeat the course in college or take pre-calculus in college. The Mathematical Association of America (MAA) and the National Council of Teachers of Mathematics (NCTM) issued a joint statement that included the premise: “Although calculus can play an important role in secondary school, the ultimate goal of the K–12 mathematics curriculum should not be to get students into and through a course in calculus by twelfth grade but to have established the mathematical foundation that will enable students to pursue whatever course of study interests them when they get to college.” (See [MAA and NCTM Joint Statement](#).)

Similarly, the University of California’s board of admissions “strongly urges students not to race to calculus at the cost of full mastery of the earlier math curriculum. A strong grasp of these ideas is crucial for college coursework in many fields, and students should be sure to take enough time to master the material. Choosing an individually appropriate course of study is far more important than rushing into advanced classes without first solidifying conceptual knowledge.”

The University of California and California State University systems issued the Statement of Competencies in Mathematics Expected for Entering College Students which recognizes a need for broader thinking in mathematics. (See [Statement of Competencies in Mathematics Expected for Entering College Students](#) (PDF).)



Two Year Overview of MCMS Mathematics

2020-2021 (Remote / Mandatory Cohorts)

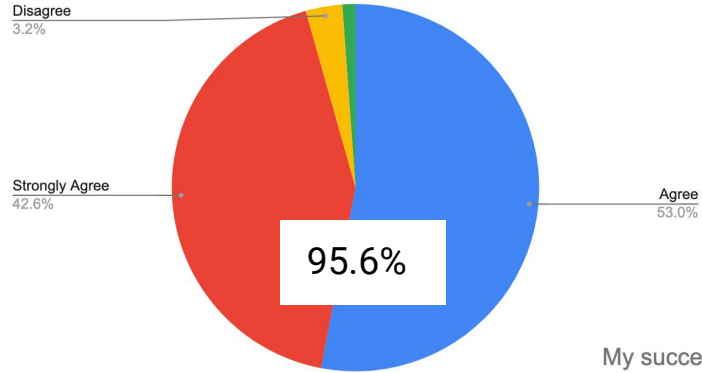
- Heterogeneous Math 6
- Heterogeneous Math 7
- 56 qualifying 7th graders for $\frac{7}{8}$ course (incomplete data)
- 108 *voluntarily enrolled in Optional: Math 8 Imagine Math* for 7th graders using countywide recorded videos and **Imagine Math**
- Imagine Math work options include Flex Period or independent at home
- Algebra enrollment 76 students

2021-2022

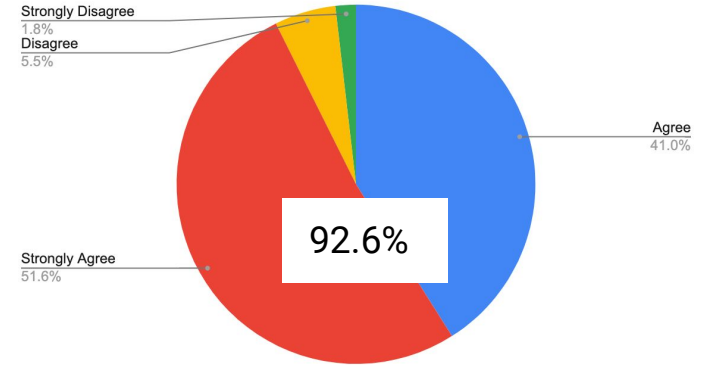
- Heterogeneous Math 6
- Heterogeneous Math 7
- 17 qualifying 7th graders for $\frac{7}{8}$ course
- 68 students currently enrolled in *Optional: Math 8 independent course* for 7th graders using **Apex Learning**
- Apex work options includes zero period, study hall, elective, or independent at home
- Algebra enrollment 59 students

Checking in on Student Mindset (November, 2021)

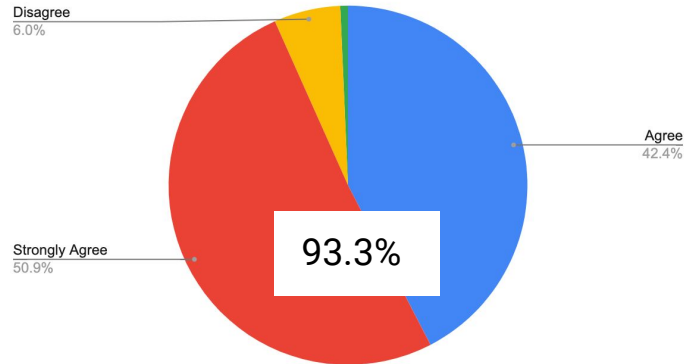
I belong in this academic community.



If I apply myself, I can be successful in math.



My success in school grows with my effort.

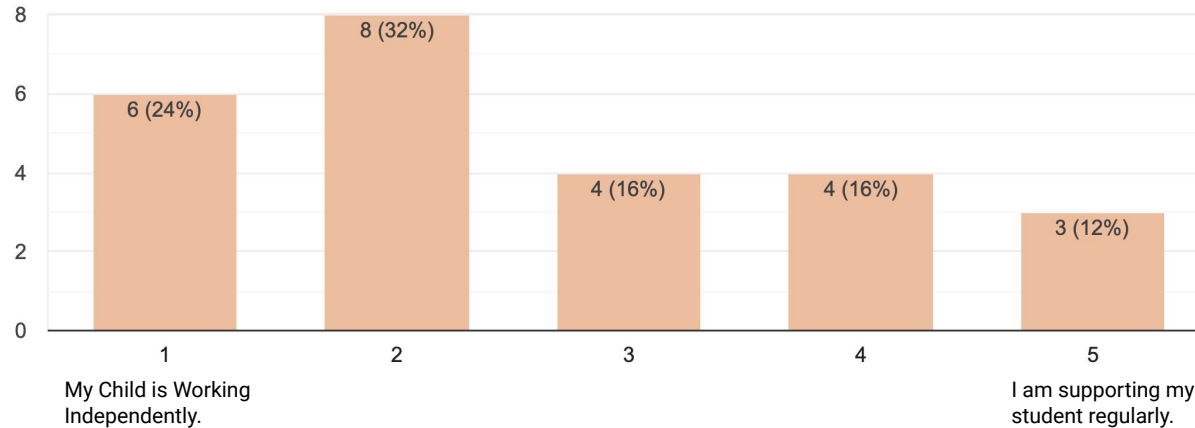


Apex Pathway- Parent Check-in

25 responses, 68 families enrolled

To what degree are you supporting your child at home:

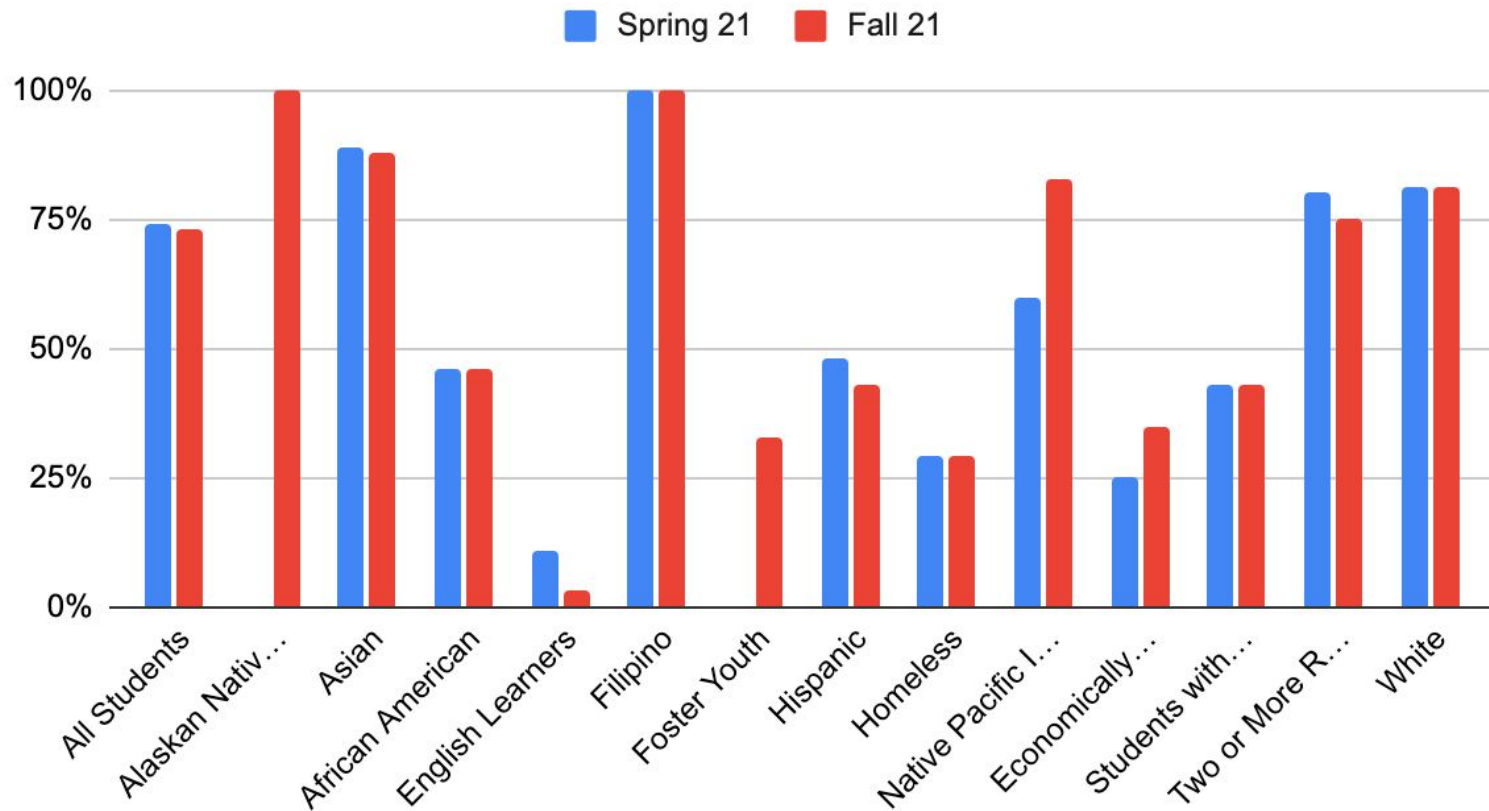
25 responses



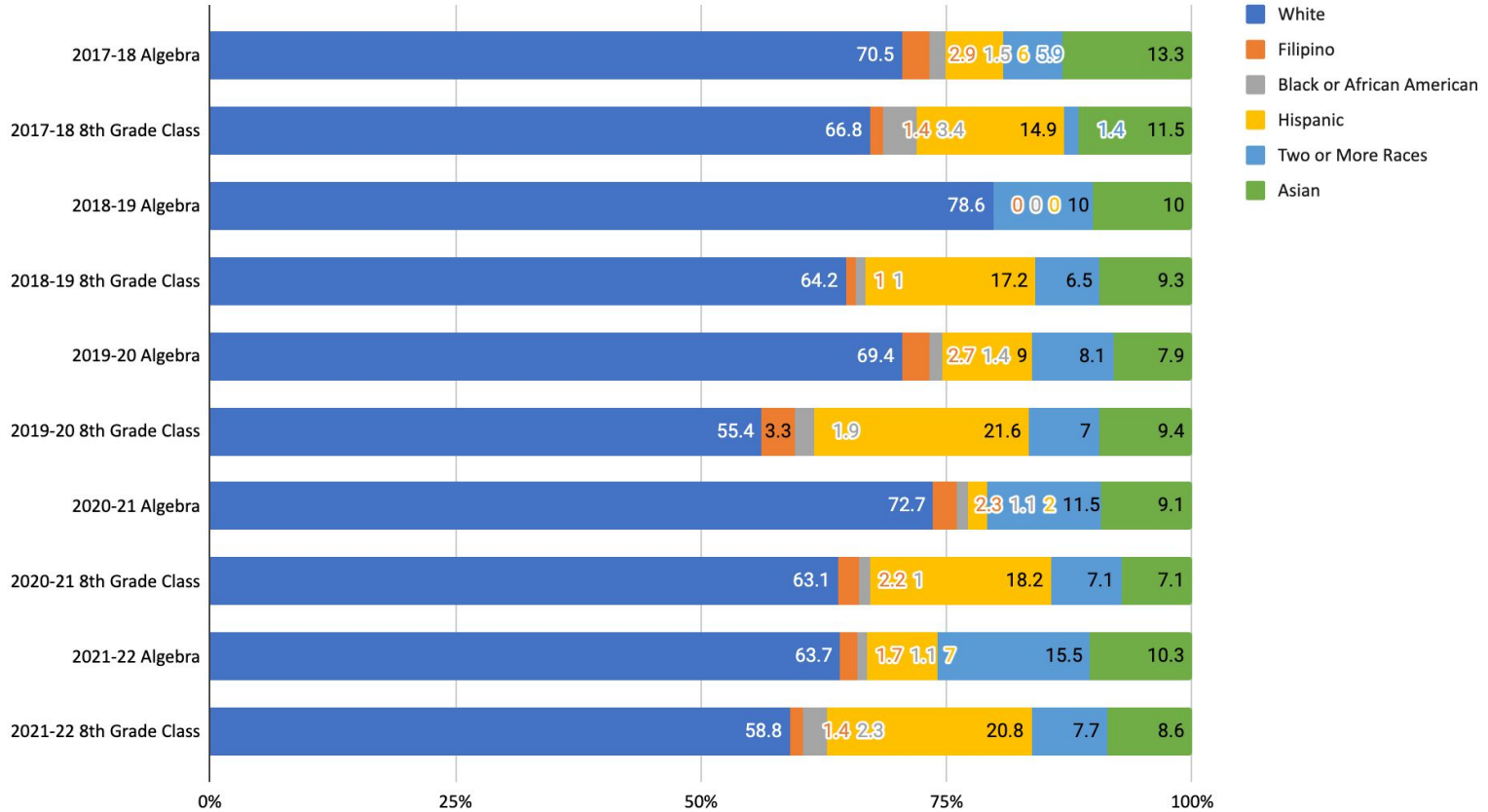
- Apex Webinar, 20 Attendees

STAR Testing Student Group Data- Meeting Benchmark

Star Math Scores for Spring 21 and Fall 21



Algebra Enrollment by Race



Dyad Discussion- Mindful Inquiry

What are the implications for my work?

1. Partner A reflects for 3 minutes. Partner B may interject using the mindful inquiry questions.
2. Partner B reflects for 3 minutes. Partner A may interject using the mindful inquiry questions.

Mindful Inquiry


Listening to understand...

What I heard you say was...(use their words)

Tell me more about what you meant by...

How did ____ affect you? How does it affect you now?

What do you need/want...



Pathway Possibilities for the 2022-23 School Year

Miller Creek Middle School Math Pathway Possibilities

Optional Pathways	Courses			Advantages	Concerns	Considerations
A	Math 6	Math 7	Math 8	<ul style="list-style-type: none"> • 3 years of strong foundational mathematics • Heterogeneous classes in every grade • Delays tracking until high school • Recommended by draft CA Framework 	<ul style="list-style-type: none"> • No access to Algebra 1 • Designing proper differentiation 	<ul style="list-style-type: none"> • Multiple pathways are available in high school • Not recommended by staff
B	Math 6	Compressed Math 7 & Math 8	Algebra 1	<ul style="list-style-type: none"> • Provides access to Algebra for some • Acceleration for some begins in 7th grade 	<ul style="list-style-type: none"> • Tracking begins in grade 7 • Omits critical content from Math 7 & 8 • Placement data serves as gatekeeper for acceleration • Underrepresented groups of students including hispanic students, EL students, students with IEPs • Not aligned with the drafted CA Framework • Compresses the most standard dense course 	<ul style="list-style-type: none"> • 13% of TLHS students who entered in Geonetry as freshman took Calculus in high school • High rates of retaking calculus once in college • Not recommended by staff
		Math 7	Math 8			
C	Math 6 + Math 7 Big Ideas	Math 7+ Math 8 Big Ideas	Compressed Math 8 / Algebra 1	<ul style="list-style-type: none"> • Delays tracking until Grade 8 • Exposure to Grade 8 Big Ideas for all 7th graders • Exposure to Grade 7 Big Ideas for all 6th graders • Provides access to Algebra for some 	<ul style="list-style-type: none"> • Omits critical content from Math 8 • Placement data serves as gatekeeper for acceleration • Not aligned with the drafted CA Framework • Necessary support and intervention with struggling students 	<ul style="list-style-type: none"> • Requires careful curricular mapping • Intentional supports for traditionally underserved students • Potential Impact on 5th Grade Curriculum • Grade level assessments will reflect grade level standards
		Math 8				
D1	Math 6	Math 7 Math 8 (Two in-person courses, concurrently enrolled)	Algebra 1	<ul style="list-style-type: none"> • Allows for complete Math 7, Math 8, and Algebra courses • Provides access to Algebra • Delays tracking until Grade 8 • Opens accelerated pathway to all (no compression = open enrollment) • Provides flexibility(Apex or in-person course) 	<ul style="list-style-type: none"> • Students enrolled in concurrent in-person math courses will have one elective course (Math is the second elective) • Not aligned with the drafted CA Framework • Stacked sequencing of Math 7 and Math 8 	<ul style="list-style-type: none"> • Requires additional FTE
		Math 7	Math 8			
D2	Math 6	Math 7 Math 8 (One in person course & Apex Independent Study Course, Concurrently enrolled)	Algebra 1	<ul style="list-style-type: none"> • Allows for complete Math 7, Math 8, and Algebra courses • Provides access to Algebra • Delays tracking until Grade 8 • Opens accelerated pathway to all (no compression = open enrollment) • Provides flexibility (Apex or in-person course) 	<ul style="list-style-type: none"> • Not aligned with the drafted CA Framework • Apex: Unsupervised testing environment • Stacked sequencing of Math 7 and Math 8 	<ul style="list-style-type: none"> • Requires additional FTE
		Math 7	Math 8			

Clarify & Discuss

Equity Framework Tool:

1. How does this issue, policy, or program improve current equity conditions and how will the outcomes be measured?
2. Who are the groups of people that will be affected by the issue, policy, or program and how will it serve each group? Consider in particular underserved populations.

Thinking Partnerships & Next Steps

- Untracking Math Seminar at Stanford, 10/20/21
- Articulation with Terra Linda High School, 12/2/21
- Countywide Middle School Math Senate, 12/14/21

- Monitor performance data of students, including disaggregating the data by race
- Consider next draft of CA Math Framework
- Continue to explore as a District Math Team
- Hold a parent webinar to share information about CA Math Framework & MC Pathways

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