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A Policy Blueprint for Math Equity and Excellence

OCTOBER 2026

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This publication was prepared by **Tanya Moore** (Consultant, Intersecting Lines) with strategic direction and oversight from the project team:

Hilda Villarreal-Wright
President, California Mathematics Council

Rachel Ruffalo
Deputy Director of Strategic Advocacy, EdTrust-West

Jeanette Gomez
Associate Director of Policy, Californians Together

Manuel Buenrostro
Policy Director, Californians Together

Benito Aranda-Comer
TK-12 Policy Analyst, EdTrust-West

Communications and Design:

Tamara Orozco
Communications Director, Californians Together

Szabolcs Kiss
Brand Manager, Californians Together

Front cover image: photo by Allison Shelley for EDUimages

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Executive Summary: A Policy Blueprint for Math Equity and Excellence, 2026–2030

California's vision is for every student to experience rigorous, coherent, and engaging mathematics instruction that builds conceptual understanding, affirms students' identities and assets, and equips them with the knowledge, skills, and confidence needed to thrive in college, career, and life. That vision is grounded in research and reflected in the 2023 California Mathematics Framework, which aligns directly with the California English Learner Roadmap policy. Yet too many students and educators have not experienced it in practice, and unlike literacy, math has no dedicated implementation structure.

Mathematics is a gateway to educational advancement and economic mobility. Students who take more mathematics, and more advanced mathematics, enroll in and complete college at higher rates and earn more afterward.[1] Yet over the last decade, gaps in math achievement by race, gender, and income have grown.[2] In 2025, one in five Black students, one in four Latino students, one in eight students with disabilities, and one in nine multilingual learners[3] met or exceeded grade-level mathematics standards.[4] California has set a goal of 70 percent postsecondary attainment by 2030,[5] but without ensuring that all students have access to high-quality math instruction, that goal will remain out of reach.

This agenda is designed to benefit all students while intentionally centering Black and Latino students, multilingual learners (including newcomers and long-term English learners), students with disabilities, and students from low-income families—collectively referred to throughout this agenda as systemically underserved students. These students continue to experience persistent and disproportionate barriers to educational opportunity and success.

The following policy recommendations emerge from the April 2026 convening, From Ideas to Impact, which brought together educators, researchers, advocates, and system leaders from across California, and from subsequent listening sessions and one-on-one conversations with math education experts, which together helped identify the most urgent challenges and promising solutions. This agenda treats students' home languages, cultural identities, and prior knowledge as core assets for mathematical reasoning, while removing the structural barriers that limit mathematical access and achievement for systemically underserved students.

1 Dykeman et al., 2026; Huffaker et al., 2026; Rose & Betts, 2001, 2004

2 Huffaker et al., 2026

3 Note: The term multilingual learners is used throughout this agenda to refer to English learners, in order to focus on their linguistic assets.

4 California Department of Education, 2025

5 Office of Governor Gavin Newsom, 2022

California has a vision. Now it needs a plan. To bring that vision to life in every classroom, we call on state leaders to:

Priority Area 1: Strengthen the Math Educator Workforce

- **Align and strengthen mathematics preparation across California's credentialing and educator preparation system**, spanning the credentials that authorize mathematics instruction and instructional leadership, as well as preparation program coursework, clinical practice, and faculty development.
- **Build and strengthen mathematics teacher pipelines with a focus on high-need schools** through scholarships, residencies, Grow Your Own pathways, and targeted financial incentives.
- **Expand and sustain the bilingual-authorized mathematics educator workforce** to deliver strong mathematics instruction in bilingual programs.

Priority Area 2: Invest in a Statewide Instructional System

- **Establish a statewide mathematics professional learning and coaching initiative** that prioritizes districts serving the highest concentrations of systemically underserved students, differentiates coaching by grade span, and builds educator capacity to deliver rigorous core instruction accessible to multilingual learners and students with disabilities.
- **Build a coherent statewide implementation system for high-quality instructional materials** that provides districts with curriculum-specific professional learning, implementation guidance, multilingual learner supports, and continuous improvement processes.
- **Establish an integrated English language development (ELD) math professional learning initiative** that equips mathematics teachers and coaches in all California counties to deliver integrated ELD within math instruction.

Priority Area 3: Strengthen and Expand Student Supports

- **Expand access to research-based mathematics interventions that accelerate student learning, strengthen positive math identity, and maintain access to grade-level mathematics**. Statewide guidance, vetted resources, and targeted investments should prioritize high-dosage tutoring aligned to core instruction and help districts evaluate instructional technology and AI-enabled tools.
- **Provide statewide guidance and professional learning on the appropriate use of assessment evidence** to inform mathematics instruction and intervention, drawing on formative, diagnostic, and existing statewide data without adding new statewide assessments.
- **Establish formal state and local structures for authentic family and community co-design** requiring local educational agencies (LEAs) and state agencies to partner with families of systemically underserved students to co-design mathematics implementation plans.

Priority Area 4: Expand Access to Rigorous Mathematics Pathways

- **Adopt A-G mathematics as the default high school pathway to expand college access**, with Algebra 1 or Integrated Math 1, or beyond, available and expected by the end of ninth grade, while preserving student and family choice and ensuring districts provide the academic and instructional support students need.
- **Strengthen the California Mathematics Placement Act** to move from fair placement to proactive

identification and enrollment in advanced pathways, using objective multiple-measures thresholds with an opt-out rather than an opt-in structure.

- **Expand access to and improve quality of dual enrollment and advanced coursework pathways** by funding the full cost of expansion, with priority given to schools that currently offer no dual enrollment or advanced mathematics options.

Priority Area 5: Align State Systems to Support Local Implementation

- **Establish statewide mathematics goals, align the accountability system to them, and publicly report progress**, with quantifiable targets and timelines, disaggregated from the outset by race, income, disability status, and language classification, and connected to the California School Dashboard and the Local Control and Accountability Plan (LCAP).
- **Establish a statewide mathematics implementation strategy that aligns existing initiatives, funding, and technical assistance** around shared implementation goals for the Mathematics Framework.
- **Strengthen intersegmental coordination between TK-12 and higher education** around mathematics expectations at the transition points between systems, including course sequences, dual enrollment alignment, and college placement practices.
- **Establish state cross-division leadership structures for mathematics implementation, spanning TK through grade 12**, so that curriculum, multilingual learner, special education, accountability, and improvement divisions plan and deliver through a coordinated strategy rather than isolated initiatives.

The recommendations in this agenda are directed to the state actors with the authority to act on them: the Governor and Legislature, State Board of Education, California Department of Education, Commission on Teacher Credentialing, California Collaborative for Educational Excellence, county offices of education, California Community Colleges Chancellor's Office, California State University, and University of California.

Vision & Background

Vision

California's vision is for every student to experience rigorous, coherent, and engaging mathematics instruction that builds conceptual understanding, affirms students' identities and assets, and equips them with the knowledge, skills, and confidence needed to thrive in college, career, and life. That vision is grounded in research and reflected in the 2023 California Mathematics Framework, a vision that directly aligns with the California English Learner Roadmap policy.

While California has established this vision, too many students and educators have yet to experience it in practice. This agenda identifies the statewide conditions and investments needed to bring California's mathematics vision to life in every classroom. It treats students' home languages, cultural identities, and prior knowledge as core assets for mathematical reasoning, while removing the structural barriers that limit mathematical access and achievement for systemically underserved students.

Background

Math skills are key to educational advancement and economic mobility. Taking more math classes, especially advanced courses, is linked to higher rates of college enrollment and persistence, degree completion, and higher wages after college.[6] Yet only three in ten California 11th graders met or exceeded the state math standard.[7] California has set a goal of 70 percent postsecondary attainment by 2030.[8] Without addressing what is happening in math classrooms across the state, this goal will remain out of reach.

Over the last decade, gaps in math achievement by race, gender, and income have grown, with the income-based gap widening by roughly 40 percent.[9] In 2025, one in five Black students, one in four Latino students, one in eight students with disabilities, and one in nine multilingual learners met or exceeded grade-level mathematics standards.[10] Framing racial disparities as an "achievement gap" minimizes the historical, economic, and political impact of decades of unequal school funding, exclusion from educational opportunity, underinvestment, and disenfranchisement. Closing disparities requires investment commensurate with that impact, not incremental remediation.[11]

This agenda is designed to benefit all students while intentionally centering Black and Latino students, multilingual learners (including newcomers and long-term English learners), students with disabilities, and students from low-income families, collectively referred to throughout this agenda as systemically

6 Dykeman et al., 2026; Huffaker et al., 2026; Rose & Betts, 2001, 2004

7 EdSource, 2025

8 Office of Governor Gavin Newsom, 2022

9 Huffaker et al., 2026

10 California Department of Education, 2025

11 Ladson-Billings, 2006

underserved students. These students continue to experience persistent and disproportionate barriers to educational opportunity and success. They are the standard against which success in this agenda will be measured.

California has a vision. Now it needs a plan.

California has already established a strong vision for high-quality mathematics instruction, but it has not yet built a coordinated statewide implementation strategy to bring that vision consistently to every classroom. Unlike literacy, which has a funded coaching and implementation chain, mathematics has no equivalent architecture. Three interconnected challenges stand in the way: a gap between policy and practice, a system that undersupports and underprepares educators, and a fragmented set of state investments.

The five priority areas that follow respond to those challenges in sequence: the educators who deliver mathematics instruction and the system that supports them (Priority Areas 1 and 2), the supports and pathways students can actually reach (Priority Areas 3 and 4), and the state structures that make both possible (Priority Area 5).

Over the past several years, California has made important commitments to mathematics education. The 2023 California Mathematics Framework, statewide professional learning investments including the Math Professional Learning Partnership (MPLP), regional partnerships, and the adoption of high-quality instructional materials have established a strong foundation for mathematics improvement.

This agenda emerges from the April 2026 convening, *From Ideas to Impact*, which brought together educators, researchers, advocates, and system leaders from across California. The priorities that follow reflect the most urgent challenges and promising solutions that emerged from that convening, from subsequent listening sessions, and from one-on-one conversations with math education experts.

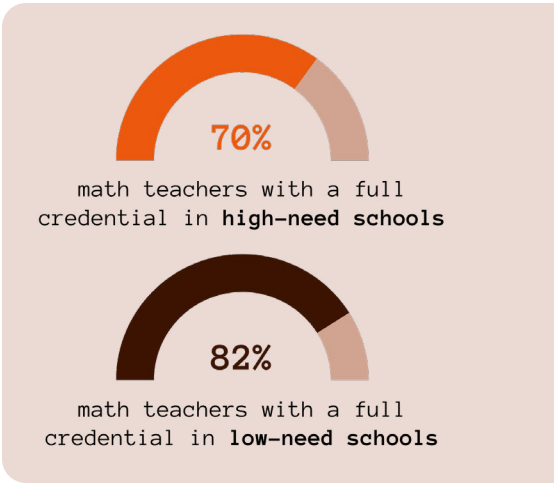
The recommendations in this agenda are directed to the state actors with the authority to act on them: the Governor and Legislature, State Board of Education, California Department of Education, Commission on Teacher Credentialing, California Collaborative for Educational Excellence, county offices of education, California Community Colleges Chancellor's Office, California State University, and University of California.

Priority Area 1: Strengthen the Math Educator Workforce

The Opportunity

California's mathematics vision depends on a strong, well-prepared educator workforce that reflects the diversity of the state's students. The gap is not in educator commitment or capability. It is between the vision California has articulated for mathematics teaching and the mechanisms needed to carry that vision into every preparation program, every credential, and every classroom.

The current state



The Mathematics Framework sets out clear expectations for mathematics teacher preparation, but the state has no mechanism for ensuring programs implement them consistently, so what candidates encounter depends heavily on the program they attend.[12]

Credentialing compounds this at the elementary level. California requires broad subject-matter competence across all elementary subjects, while the Framework calls for considerably deeper preparation in mathematics content and pedagogy. Most elementary mathematics is therefore taught by educators who were never required to develop that depth.[13]

Workforce shortages deepen these challenges. In schools serving the highest concentrations of students from low-income families, multilingual learners, and foster youth, only about 70 percent of math teachers hold a full credential, compared with roughly 82 percent in the lowest-need schools. Underprepared teachers are concentrated in those same schools and in schools serving the highest proportion of Black students. In 2024-25, California issued nearly 8,000 emergency-style permits, with mathematics among the most severe shortage fields.[14] For bilingual-authorized mathematics educators, demand is outpacing supply. California has issued roughly 9,500 bilingual authorizations over the past decade, but shortages are regional rather than statewide. Districts facing vacancies often turn to emergency permits, a short-term fix that does not build lasting bilingual capacity.[15]

Why this matters for students

Preparation and credentialing are where instructional quality is set. Teachers' specialized mathematical knowledge for teaching is significantly related to student achievement gains.[16] Elementary teachers typically teach mathematics as generalists, and a large-scale study of first-grade classrooms found that the higher a teacher's own mathematics anxiety, the less mathematics their students learned over the school year.[17] Anxiety and knowledge are separate problems, and preparation has to address both.

Who teaches mathematics also matters. Exposure to a same-race teacher in elementary school produces long-run attainment gains for Black students, and Black teachers are three times more likely to refer Black students to gifted programs in mathematics and reading.[18] Students across demographic groups report more positive perceptions of Black and Latino teachers' instruction.[19]

Bilingual authorized educators extend that reach further. They make rigorous mathematics accessible in students' home languages, so that multilingual learners can reason mathematically while they are still developing English proficiency. Families are asking for this preparation directly: eight in ten Black, Latino, and Asian and Pacific Islander parents agree that every teacher should be trained to meet the needs of English learners.[20]

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12 Gallagher et al., 2026; Huffaker et al., 2026; Kaul et al., 2026

13 Huffaker et al., 2026

14 Leung-Gagné et al., 2026, as reported in Huffaker et al., 2026

15 Santibañez et al., 2026

16 Hill et al., 2005

17 Schaeffer et al., 2021, replicating Beilock et al., 2010

18 Gershenson et al., 2022; Grissom & Redding, 2016

19 Cherng & Halpin, 2016

20 EdTrust-West, 2026

Policy Recommendation 1.1

Align and strengthen mathematics preparation across California's credentialing and educator preparation system. Direct the Commission on Teacher Credentialing to review and strengthen mathematics preparation requirements across the credentials that authorize mathematics instruction and instructional leadership: the Multiple Subject credential, the Single Subject credential in mathematics, the Education Specialist credential, and the Administrative Services credential, using the mathematics expectations in the new PK-3 Early Childhood Education Specialist Instruction Credential[21] as a benchmark. Establish statewide expectations and implementation guidance so educator preparation programs align mathematics coursework, pedagogy, clinical practice, and faculty development with the 2023 Mathematics Framework. Ensure all candidates demonstrate competence in asset-based mathematics instruction, translanguaging strategies, integrated ELD, and universal design for learning, and are prepared to deliver high-quality core instruction to multilingual learners and students with disabilities.

Policy Recommendation 1.2

Build and strengthen mathematics teacher pipelines with a focus on high-need schools. Expand and sustain mathematics teacher pipeline programs that recruit, prepare, and retain educators for high-need schools through scholarships, residencies, Grow Your Own pathways, and targeted financial incentives, with priority for schools experiencing persistent shortages of fully credentialed mathematics educators and serving a high proportion of systemically underserved students. These programs should recruit students, classified staff, and community members representative of California's racially, ethnically, and linguistically diverse student population.

Policy Recommendation 1.3

Expand and sustain the bilingual-authorized mathematics educator workforce. Establish dedicated pipelines, financial incentives, and targeted professional development to recruit, prepare, and retain bilingual-authorized mathematics educators to deliver rigorous mathematics instruction through and alongside language development in bilingual programs, such as dual language immersion and developmental bilingual programs.

What changes for students

Under these recommendations, elementary students learn mathematics from teachers whose preparation went beyond broad subject-matter competence to the content and pedagogy the Framework asks for. Students in high-need schools are more likely to learn from fully credentialed educators who stay, because the state invests in the pipelines that recruit and retain them. Multilingual learners in bilingual programs reason mathematically with universal design for learning built in rather than added on. And because more students see themselves reflected in who teaches them, more are identified for advanced mathematics and referred into the pathways that follow.[22] As a result, more students develop mathematical confidence, reach advanced coursework, and achieve at high levels.

21 Commission on Teacher Credentialing, 2023

22 Gershenson et al., 2022; Grissom & Redding, 2016

Priority Area 2: Invest in a Statewide Instructional System that Aligns High-Quality Instructional Materials, Professional Learning, and Instructional Coaching

The Opportunity

California's mathematics vision reaches students through core instruction, through the materials in front of them and the educator using those materials well. The gap is between what California has adopted and the support educators receive to put it to work.

The current state



1 in 5

CA districts offered **no consistent math professional learning** in 2024–25

California has two strong building blocks for an effective instructional system: the Mathematics Framework and the state-recommended list of instructional materials approved in November 2025. What is missing is the infrastructure to translate them into practice. The gap begins with recognition. Only one in nine superintendents and principals describe themselves as very familiar with the concept of high-quality instructional materials, and just 13 percent report that their district has an official definition of it. Most California math teachers surveyed said their materials lacked relevance for multilingual learners.[23]

California's literacy investments operate through a structured implementation chain with dedicated funding, including a state-funded literacy coaches grant. Mathematics has no equivalent architecture. Where mathematics professional learning exists, it is uneven. One in five California districts offered no consistent math professional learning in 2024-25, and most of what exists is voluntary.[24] Integrated English language development (ELD) is missing from this picture. Every mathematics teacher is also a teacher of multilingual learners, but few receive the strategies and supports needed to deliver integrated ELD within mathematics instruction.

Districts cannot close the gap alone. Most employ a single teacher on special assignment to support mathematics, and that role is typically stretched across multiple subjects, school sites, and administrative duties. In a 2026 statewide survey of district leaders, only 16 percent ranked mathematics as their top priority.[25]

Why this matters for students

Core instruction is where the Framework either reaches students or does not. Coaching aligned with curriculum content produces meaningful gains in instructional practice and student achievement.[26] Materials

23 EdTrust-West, 2026

24 Gallagher et al., 2026

25 Gallagher et al., 2026

26 Kraft et al., 2018

alone are not enough. Without incentives and sustained support for implementation, adoption by itself does not produce significant gains in achievement.[27]

What teachers expect of students also matters, and those expectations are causally related to how far students go in school.[28] When a Black student and their teacher do not share a racial background, the teacher is significantly less likely to expect that student to complete college. The pattern is strongest among mathematics teachers and for Black male students.[29] Expectations are part of instructional quality, not separate from it, which is why professional learning has to address them directly rather than assume better materials will.

Policy Recommendation 2.1

Establish a statewide mathematics professional learning and coaching initiative. Build on California's existing investments in mathematics professional learning to establish a sustained statewide mathematics coaching initiative that prioritizes educators, administrators, and instructional leaders in districts serving the highest concentrations of systemically underserved students. Coaching should be aligned to the Mathematics Framework, the principles of the EL Roadmap policy, and state-adopted high-quality instructional materials, and differentiated by grade span to reflect the distinct needs of elementary generalists and secondary mathematics departments. The delivery of integrated ELD within math instruction should be a core part of any math professional learning and coaching initiative. This alignment will ensure that educators learn and apply research-based instructional practices, including multilingual learner pedagogy, universal design for learning, practices for students with disabilities delivered within core instruction rather than only within intervention, and strategies to counter deficit expectations.

Policy Recommendation 2.2

Build a coherent statewide implementation system for high-quality instructional materials. Develop and fund a statewide implementation strategy that helps districts effectively adopt and implement state-approved mathematics high-quality instructional materials through curriculum-specific professional learning and coaching, implementation guidance, multilingual learner supports, and continuous improvement processes.

Policy Recommendation 2.3

Establish an integrated ELD math professional learning initiative. The state should invest in a sustained professional learning initiative ensuring math teachers and coaches across all California counties are equipped with the tools to effectively deliver integrated English language development within math instruction. This will give students the academic language necessary to engage with math concepts. Integrated ELD makes instruction more rigorous, discourse-rich, and linguistically responsive: multilingual learners need it, and all students benefit from it.[30]

27 Blazar et al., 2020; Lynch et al., 2019

28 Papageorge et al., 2020

29 Gershenson et al., 2016

30 National Academies of Sciences, Engineering, and Medicine, 2018; Prediger et al., 2022

What changes for students

Under these recommendations, elementary students learn from generalist teachers who have ongoing, grade-span-specific coaching in mathematics. Multilingual learners encounter rigorous mathematics with language development integrated rather than content diluted, an approach that deepens conceptual understanding for every student in the room.[31] Students with disabilities receive research-based practices within core instruction rather than only in intervention. Students in high-need schools experience more instructional stability, because coaching reduces early-career turnover.[32] Because site administrators and instructional leaders are part of the initiative, students learn in schools where leaders can recognize strong mathematics instruction and direct resources toward it. As a result, more students build durable mathematical understanding, see themselves as capable, and stay on pathways that keep advanced coursework in reach.

Priority Area 3: Strengthen and Expand Student Supports

The Opportunity

Whole-class instruction cannot always meet the range of learning needs in a classroom. Some students will need additional, targeted support to thrive in grade-level mathematics.[33] The goal is instructional coherence: core instruction, intervention, tutoring and summer learning all working toward the same ends.[34] Coherence also depends on the families who see how these supports land, and who are rarely part of designing them.

The current state

Progress has been slow and uneven. Since 2019, the share of Black students meeting or exceeding grade-level standards rose from 16 percent to 20 percent, while the share of multilingual learners doing so remained unchanged at 11 percent.[35] The students who need the most support are the ones the system is least organized to serve: a third of long-term English learners are also identified as having a disability, so schools must address language and disability-related needs at the same time.[36]

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31 National Academies of Sciences, Engineering, and Medicine, 2018; Prediger et al., 2022

32 De Jong & Campoli, 2018

33 Loeb & Ziegler, 2026

34 State Collaborative on Reforming Education, 2026

35 California Department of Education, 2025

36 EdTrust-West, 2026

What helps students with disabilities learn mathematics is instruction matched to what a student actually needs, rather than to their disability label, and delivered alongside grade-level content rather than in place of it.[37]

For all students, the intervention with the strongest evidence behind it, high-dosage tutoring, is unequally available: only 42 percent of public school principals report that their school offers it, and access to privately arranged tutoring is further stratified by income.[38]

Why this matters for students

Students who see themselves as "math people" typically develop that view during elementary school.

Interventions that accelerate learning and maintain access to grade-level content are not the same as remediation centered on rote exercises or perceived deficits. Students placed in lower-level courses encounter reduced expectations and can internalize negative messages about their own ability.[39] Students who see themselves as "math people" typically develop that view during elementary school.[40] For Black students, stereotype threat can depress performance when tasks are described as diagnostic of ability,[41] and high-achieving Black students expend substantial effort managing these stereotypes.[42] How students are identified for support carries the same risk: assessment evidence used to sort students rather than to teach them can confirm the message stereotype threat carries. Family, peer, and teacher networks, by contrast, contribute significantly to the success of high-achieving Black and Latino students.[43]

Policy Recommendation 3.1

Expand access to research-based mathematics interventions that accelerate student learning, strengthen positive math identity, and maintain access to grade-level mathematics. Develop statewide guidance, vetted resources, and targeted investments to help districts implement high-quality mathematics interventions that support rigorous grade-level learning and build students' confidence as mathematics learners rather than deficit-based remediation. Guidance should prioritize research-based approaches, beginning with high-dosage tutoring aligned to grade-level core mathematics instruction. It should also help districts identify and evaluate instructional technology and AI-enabled tools that support systemically underserved students.

Additional quality criteria should include alignment with multi-tiered systems of support, core instruction, and high-quality instructional materials, and should also integrate universal design for learning, language-responsive practices, and both designated and integrated English Language Development. Guidance should ensure that language acquisition is not misidentified as a mathematical learning deficit. To support implementation, the state should provide model strategies and planning tools to help districts embed this guidance into their LCAPs and School Plans for Student Achievement.

37 Fuchs et al., 2021; National Center for Learning Disabilities, 2024; National Council of Teachers of Mathematics & Council for Exceptional Children, 2024

38 Loeb & Ziegler, 2026

39 Gershenson et al., 2016; Papageorge et al., 2020

40 Schwartz et al., 2025

41 Steele & Aronson, 1995

42 McGee & Martin, 2011

43 Walker, 2012

Policy Recommendation 3.2

Provide statewide guidance and professional learning on the appropriate use of assessment evidence to inform mathematics instruction and intervention. Develop guidance, tools, and professional learning that help educators use formative, diagnostic, and statewide assessment data to identify student strengths and learning needs, provide timely supports, and connect students to research-based interventions. Guidance should emphasize maintaining access to grade-level mathematics, strengthening students' confidence and mathematical identity, and avoiding the inappropriate use of assessment data to assign students to disconnected or low-expectations learning experiences. This support should be integrated into the statewide professional learning and coaching initiative described in Recommendation 2.1 so educators receive job-embedded support to interpret and act on existing assessment evidence. Where possible, assessments should be available in students' home languages and in any additional languages of mathematics instruction (for example, for students in dual language immersion programs). This recommendation does not call for additional statewide assessments.

Policy Recommendation 3.3

Establish formal state and local structures for authentic family and community co-design. Require local educational agencies (LEAs) and state agencies to partner with families, specifically centering families of systemically underserved students, to co-design implementation plans and goals, review disaggregated course placement data, and evaluate whether policy interventions are successfully meeting student needs. The state can encourage authentic family engagement through the dissemination of grants, collection of best practices, and guidance and technical assistance for LEAs. These structures should be ongoing rather than episodic, with clear expectations for how LEAs respond to what families surface.

The state can support LEAs in helping families understand California's mathematics standards, what achievement results mean, strategies for supporting learning outside of school, and, for families of multilingual learners, the mathematics academic language their children are acquiring. LEAs also need support in connecting schools, educators, families, and communities so that mathematics instruction builds on students' daily activities and routines, including professional learning for educators on family engagement and asset-based instruction.

What changes for students

Under these recommendations, students who need additional support in mathematics receive timely, research-based interventions that remain aligned to grade-level content and to what they are learning in class. Black students receive that support during the elementary years, when students are developing their confidence and identity as math learners.[44] Multilingual learners receive rigorous grade-level mathematics with language development built into the instruction rather than simplified content.[45] Students with disabilities receive instruction that is research-based and determined by what a student needs rather than by categorical designation.[46] Their families help shape how those supports are designed rather than hearing about them afterward. As a result, more students succeed in grade-level mathematics, stay on pathways that keep college and career options open, and continue to see themselves as capable and confident math learners.

44 Schwartz et al., 2025

45 Prediger et al., 2022

46 Fuchs et al., 2021

Priority Area 4: Expand Access to Rigorous Mathematics Pathways

The Opportunity

The long-term goal of this priority is that every California student can reach and complete the A-G sequence, beginning with Algebra 1 or Integrated Math 1 (or beyond) by the end of ninth grade. Reaching that goal takes two things: rigorous coursework students can actually reach, and the instruction and support that carries them through it.

The current state

Today, whether a student reaches advanced mathematics depends on two factors that have little to do with the student: which school they attend and how educators perceive their readiness.[47]

Just over half (54 percent) of California graduates met A-G requirements in 2025, and 15 percent of all public high schools had completion rates below 30 percent.[48] About one-third of high school graduates took dual enrollment courses, but that rate varies by race and by school.[49]

When placement in advanced courses relies on an educator's judgment of readiness or on a single measure such as GPA, students of color, multilingual learners, and students from low-income families are less likely than peers with comparable readiness to be placed.[50] Black students are less likely to be placed in eighth-grade algebra, even at equivalent demonstrated performance,[51] and their underrepresentation in advanced coursework is driven by under-referral rather than under-readiness.[52]

Counselors and site administrators are essential to expanding access, and they are frequently under-resourced for the work. California enrolls 432 students for every school counselor, against the 250:1 ratio recommended by the American School Counselor Association and a national average of 372:1.[53] Caseload carries consequences: an additional high school counselor is associated with a 10 percentage-point increase in four-year college enrollment.[54] They need the tools, training, and time to help students navigate mathematics pathways that align with their postsecondary and career goals.

47 Faulkner et al., 2014; Dykeman et al., 2026

48 California Department of Education, 2025; CalMatters, 2026

49 EdTrust-West, 2025

50 Patrick et al., 2022; Baker et al., 2023

51 Faulkner et al., 2014

52 Card & Giuliano, 2016

53 American School Counselor Association, 2025

54 Hurwitz & Howell, 2014

Why this matters for students

Taking advanced mathematics and completing four years of mathematics in high school increases the likelihood of college enrollment and completion.[55] Because mathematics is sequential, the course a student takes in eighth or ninth grade largely determines what is available in twelfth. Yet the fourth year is where students fall away. Math course enrollment declines for all students by twelfth grade, and the drop is steeper for multilingual learners, falling from 97 percent in eleventh grade to 71 percent in twelfth.[56] But access alone is not enough. Acceleration implemented without instructional support can produce negative effects.[57] The challenge is not student ability. Too many students are denied access to the pathways that lead to advanced mathematics, and those who gain access do not always receive the support necessary to succeed.

Because mathematics is sequential, the course a student takes in eighth or ninth grade largely determines what is available in twelfth.

Policy Recommendation 4.1

Adopt A-G mathematics as the default high school pathway to expand college access. Establish A-G aligned mathematics coursework as the default pathway for all students, with Algebra 1 or Integrated Math 1, or beyond, available and expected by the end of ninth grade, while preserving student and family choice and ensuring districts provide the academic and instructional supports necessary for success.

Policy Recommendation 4.2

Strengthen the California Mathematics Placement Act to move from fair placement to proactive identification and enrollment in advanced pathways. Build on the existing Mathematics Placement Act by requiring districts to use objective multiple measures to identify students ready for advanced mathematics and automatically enroll those students in appropriate advanced pathways using an opt-out rather than opt-in approach, and provide districts with tools, training, and staffing supports to ensure students and families can successfully navigate mathematics pathways. English language proficiency and disability designation should not be barriers to placement in advanced mathematics, provided students receive the support that placement requires. The state should issue clear implementation guidance, require districts to publicly report disaggregated placement, enrollment, completion, and success data, and establish mechanisms to monitor implementation of these requirements.

Policy Recommendation 4.3

Expand access to and improve quality of dual enrollment and advanced mathematics coursework pathways. Expand access to dual enrollment and advanced mathematics coursework by funding the full cost of expansion, including the support for high school teachers to obtain the credentials required to teach dual enrollment mathematics, instructional materials, transportation, and coordinated academic supports, such as advising and tutoring, jointly provided with priority given to schools that currently offer no dual enrollment or advanced mathematics options.

55 Dykeman et al., 2026

56 EdTrust-West, 2026

57 Clotfelter et al., 2015

What changes for students

Under these recommendations, students no longer have to be identified by an adult who happened to see their potential. Students who demonstrate readiness through objective measures are proactively enrolled in advanced coursework rather than depending on educator referral or family advocacy.[58] Where dual enrollment and advanced coursework do not currently exist, funding follows, so access no longer depends on proximity to a college campus.

Black students, multilingual learners, students with disabilities, and students from low-income families gain more equitable access to advanced mathematics, dual enrollment, and other college-preparatory pathways. As a result, more students complete the mathematics courses needed for college admission, remain on pathways leading to STEM opportunities, and graduate prepared for a wider range of postsecondary options.

Priority Area 5: Align State Systems to Support Local Implementation

The Opportunity

California already has significant mathematics investments, partnerships, regional networks, county office supports, and statewide initiatives underway. Many operate independently without an aligned implementation strategy, and the coordinating infrastructure for bringing the Mathematics Framework into classrooms does not exist. One California superintendent described the state's mathematics landscape as "resource-rich and coordination-poor."[59]

The current state

Fragmentation operates at three levels: within districts, where mathematics is planned separately from supports for multilingual learners and students with disabilities; between TK-12 and higher education, where expectations and course transitions are not aligned; and across state initiatives, which do not share an implementation strategy. Students absorb the cost of each.

Only 15 California districts prepared more than half of their Black students to meet grade-level mathematics standards, compared with 69 districts in English language arts.[60] Over the past decade, mathematics

58 Card & Giuliano, 2016; Faulkner et al., 2014

59 Gallagher et al., 2026

60 EdTrust-West, 2025

performance improved in affluent districts and declined in low-income districts, a divergence not seen in reading.[61] Both comparisons are to literacy, where California has built the coordinated implementation system that mathematics lacks.

The misalignment extends beyond TK-12. The two systems do not agree on mathematics expectations, course transitions, or pathways, leaving students to navigate the transition on their own.[62]

Why this matters for students

When state initiatives, technical assistance providers, and educational systems are not aligned, districts receive inconsistent guidance and implement reforms unevenly. Students then experience very different access to high-quality mathematics instruction depending on which schools they attend. California's own literacy reform offers a model: aligned funding, credentialing requirements, state board adoption of materials, and financial incentives tied to implementation.[63]

Students experience very different access to high-quality mathematics instruction depending on which schools they attend.

Policy Recommendation 5.1

Establish statewide mathematics goals, align the accountability system to them, and publicly report progress. Adopt measurable statewide mathematics goals with quantifiable targets and timelines, disaggregated from the outset by race, income, disability status, and language classification, including both overall outcome goals and differentiated goals to close gaps. Align the state accountability system to focus on mathematics outcomes by connecting these goals to the California School Dashboard and the Local Control and Accountability Plan (LCAP), and publicly report progress at the site, district, county, and state levels. Local educational agencies identified through the mathematics indicator should receive targeted assistance from mathematics content experts, delivered through the statewide system of support described in Recommendation 5.2.

Policy Recommendation 5.2

Establish a statewide mathematics implementation strategy that aligns existing initiatives, funding, and technical assistance. Create a statewide mathematics implementation strategy that aligns existing initiatives, funding streams, regional networks, the delivery of technical assistance, and the statewide system of support around shared implementation goals for the Mathematics Framework. This strategy should specify how county offices of education deliver mathematics-specific support to the districts identified through the dashboard indicator in Recommendation 5.1.

Policy Recommendation 5.3

Strengthen intersegmental coordination between TK-12 and higher education around mathematics expectations. Convene TK-12 and higher education leaders, including faculty from mathematics education and teacher preparation programs, to reach agreement on mathematics expectations at the transition points between

61 Reardon, 2026

62 Huffaker et al., 2026

63 Loeb, 2026

systems, including course sequences, dual enrollment alignment, and college placement practices, and to identify where misalignment is costing students credit, time, or access.

Policy Recommendation 5.4

Establish state cross-division leadership structures for mathematics implementation, spanning TK through grade 12. Require and support collaboration among the state offices responsible for TK-12 curriculum, multilingual learner, special education, accountability, and improvement work so mathematics implementation is planned and delivered through a coordinated state strategy rather than isolated initiatives.

What changes for students

Under these recommendations, statewide goals broken out by race, income, disability status, and language classification change what the system is able to see and act on, so a district underserving its Black students, multilingual learners, students from low-income families, or students with disabilities can see it and act.

Students moving between TK-12 and higher education encounter clearer expectations and better-aligned pathways, reducing barriers at key transition points. The result is a more coherent mathematics system that works together to help more students access high-quality instruction, succeed in grade-level mathematics, and remain on pathways that lead to college and career opportunities.

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Glossary of Acronyms

CAASPP	California Assessment of Student Performance and Progress
CAHMI	Child and Adolescent Health Measurement Initiative
CAL-MSCS	California Mathematics, Science, and Computer Science Partnership
CCAP	College and Career Access Pathways
CCEE	California Collaborative for Educational Excellence
CEC	Council for Exceptional Children
CEDAN	California Educator Diversity Action Network
CFEN	California Family Engagement Network
CFT	California Federation of Teachers
CISC	Curriculum and Instruction Steering Committee
CLSD	Comprehensive Literacy State Development
CMC	California Mathematics Council
CMP	California Mathematics Project
COE	County Office of Education
CTA	California Teachers Association
CTC	Commission on Teacher Credentialing
ELD	English Language Development
GDTF	Getting Down to Facts Reports
HQIM	High-Quality Instructional Materials
IDEA	Individuals with Disabilities Education Act
LCAP	Local Control and Accountability Plan
LEA	Local Educational Agency
MLL	Multilingual Learner
MPLP	Math Professional Learning Partnership
MTSS	Multi-Tier Systems of Support
NCLD	National Center for Learning Disabilities
NCTM	National Council of Teachers of Mathematics
PACE	Policy Analysis for California Education
PIQE	Parent Institute for Quality Education
PLAS	Program Level Academic Supports
SELPA	Special Education Local Plan Area
UDL	Universal Design for Learning

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