

# Increase Advanced Math Access: Setting Students on Pathway to Success in College, Career, and Life



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## WHY IT MATTERS

E3 Alliance research shows that taking more advanced math courses in high school highly correlates with students enrolling in a higher education institution, persisting in their studies, and ultimately completing a postsecondary credential (Wiseman, Bailie, and Gourgey, 2015).

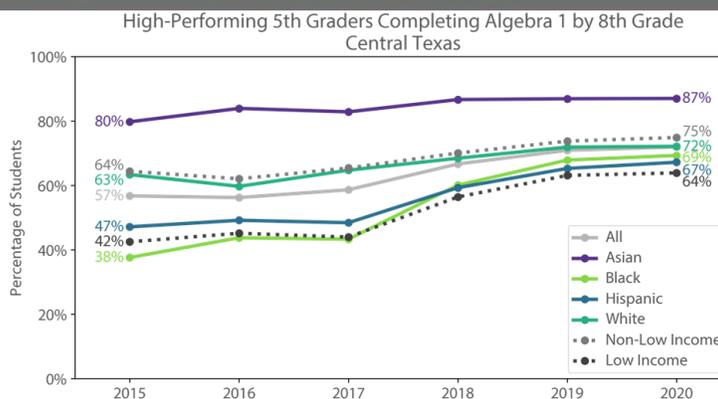
While analyzing data from the first graduating cohort under the 83rd Legislature's HB5 (class of 2015), we found that 15% of Central Texas seniors were not taking any math course in their final year of high school. These findings demonstrate the collective responsibility we share to expedite policy and practice recommendations that propel Texas students on the pathway to success in college, career, and life, in alignment with the 60x30TX strategic plan.

## WHAT WE KNOW ABOUT ADVANCED MATH PATHWAYS IN CENTRAL TEXAS

Regional policies have demonstrated success. State policy can amplify for ALL students.

- Systems change in math acceleration practices can positively influence student outcomes and equity. For instance, by implementing an opt-out or open enrollment policy for middle school accelerated math, districts reduced the Black-White opportunity gap for 8th grade Algebra I completion by 75%.
- Student success is rooted in gaining access to advanced math courses. High-performing students showing potential for advanced math pathways must begin in middle school. Exposure to high-quality math instruction in the classroom across the pipeline helps students thrive and excel in the higher skills needed for college and career.

### Acceleration Strategies Reduce Disparities in Access to 8<sup>th</sup> Grade Algebra I



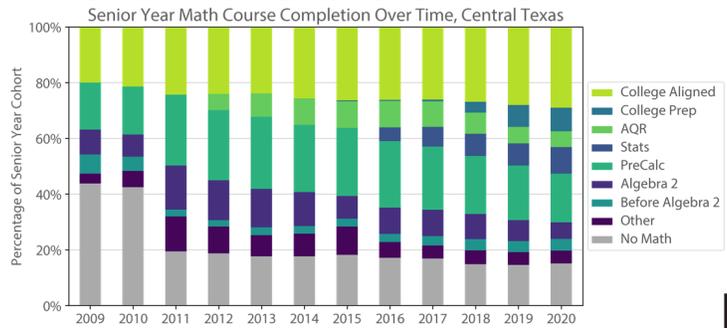
Source: E3 Alliance analysis of PEMS data at the UT Austin Education Research Center



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- Over time, data indicates a gradual increase in the percentage of students taking a math course during their senior year, and an increase in the percentage of students taking college-aligned math courses (international baccalaureate, advanced placement, OnRamps, and dual credit). State policies can accelerate these gains across Texas.

## Senior Year Math Course Types Changed Dramatically Over the Last 10 Years



Source: E3 Alliance analysis of PEMS data at the UT Austin Education Research Center



## POLICY RECOMMENDATIONS FOR ADVANCED MATH PATHWAYS

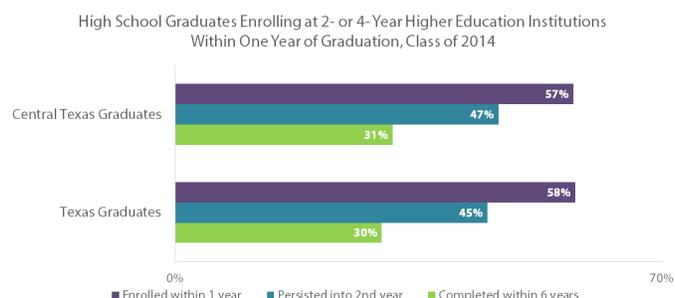
Beginning in 2013, E3 Alliance convened Central Texas leaders in education and math from school districts and colleges to collectively improve math pathways. This Pathways of Promise Steering Committee reviewed research and promising practices for providing equitable access and instruction in math for all students. Based on successful regional policy changes from this work, we recommend the following state-level policy priorities to accelerate students on a pathway to a postsecondary degree or credential, aligned with high-wage, high-skilled jobs in the career fields they select to pursue.

- Opt-out Policy.** For high-performing students, require districts to establish an opt-out policy to enroll these students into accelerated math in 6th grade with improved chances of gaining access to Algebra I in 8th grade.
- Math All Four Years.** Require students (with limited exceptions) to take math all four years of high school and choose the most advanced math course possible that aligns with their college and career aspirations. Require districts to offer and make advanced math course options easily and equitably available. Incentivize districts to add an advanced math course option for senior year.
- Multiple Measures.** Allow institutions of higher education (IHEs) to use multiple measures to assess a student's college readiness in math, rather than single high-stakes tests, as permanent state policy.
- Aligned Advising.** Require high schools and IHEs to align advising so that students access math gateway courses (courses for college credit required by programs of study) aligned to their career aspirations, including courses taken for dual credit in high school.
- Professional Development.** Provide P-16 educators and campus leaders with culturally responsive and sustaining professional development to support effective math instruction for all students in the classroom. Recommend a minimum of six hours per academic year.

## WHAT'S AT STAKE

Knowing that only one in three students in Central Texas and across the state complete college within six years of finishing high school, it is a state imperative to thoughtfully consider policy recommendations that have demonstrated positive gains for students. Scaling these promising practices for our students across the state is an academic imperative and an economic obligation. Increasing advanced math access benefits us all.

## One in Three Texas Graduates Completes College Within Six Years of Finishing High School



Note: Completion is defined as receiving a certificate, associate's degree, or bachelor's degree. Source: E3 Alliance analysis of data at the UT Austin Education Research Center

