



# ADVANCED MATH POLICY AND PRACTICES GUIDE

MARCH 2023

Driving Postsecondary Success  
through Accelerated and Equitable  
Mathematics Pathways

**E3 Alliance**<sup>SM</sup>  
Education Equals Economics





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# About the Pathways of Promise (PoP) 4.0 Initiative

E3 Alliance's Pathways of Promise Initiative is a research and implementation initiative in the Central Texas region, designed to help students succeed in college, career, and life by creating equitable mathematics pathways and higher math outcomes for all students.

Our research shows it is crucial to start students on the path in middle school and continue with college-aligned math course-taking in high school for student success in attaining postsecondary degrees or credentials.

We use a P-16 (pre-K through postsecondary) approach to identify systemic challenges and bring to scale promising practices and local policy changes to achieve our state's vision for postsecondary attainment as outlined in the *Building a Talent Strong Texas* plan (previously 60x30TX Strategic Plan) for Higher Education.

## Taking Action

E3 Alliance is driving research into action by partnering with local school districts and institutions of higher education. These collaborative partners made a commitment to address disparities in the region regarding the placement of Black and Hispanic students and students from low-income households in Algebra I by 8th grade.

Under the current Pathways of Promise 4.0 iteration, E3 Alliance is amplifying efforts to address equitable instruction and access in advanced math courses.



## Acknowledgments



### GREATER TEXAS FOUNDATION

We appreciate the **Greater Texas Foundation's** (GTF) support of E3 Alliance research and convening efforts for strengthening career and mathematics pathways in Texas since 2013. We acknowledge their dedicated staff who have served with us as thought partners and connectors in this Pathways of Promise initiative, enabling E3 Alliance to build momentum for advancing education, particularly in mathematics.

[greater texas foundation.org](https://greater texas foundation.org)



## Pathways of Promise Steering Committee

Changing systems across the regional education landscape relies on great partnerships.

We thank the districts and institutions who are deeply engaged in this initiative, including:

- Austin ISD
- Bastrop ISD
- Del Valle ISD
- Eanes ISD
- Elgin ISD
- Hays CISD
- Hutto ISD
- Lake Travis ISD
- Leander ISD
- Lockhart ISD
- Manor ISD
- Pflugerville ISD
- Round Rock ISD
- San Marcos CISD
- Charles A. Dana Center at The University of Texas at Austin
- The Center for Stem Education at The University of Texas at Austin
- Austin Community College
- Concordia University
- Huston-Tillotson University
- St. Edward's University
- Texas State University

These entities comprise the Pathways of Promise Steering Committee. Members lend practitioner wisdom and guidance for how to best provide equitable access to and instruction in accelerated math courses for all students while also delivering support to educators and families.







# Purpose

## Pathways of Promise Policy and Practices

The refined PoP 4.0 recommendations for building strong, equitable math pathways presented in this report reflect the steering committee’s goals, vision for success, and commitment to the policy changes required to better serve students.

The committee’s work is critical to this collective impact effort as district and higher education members provide input that guides the direction of advanced math pathways across the P-16 pipeline.

As the regional education backbone organization for Central Texas, E3 Alliance convenes partners by centering equity and data. This document serves as a guide and source of inspiration for educators who wish to adopt math policies and practices that can help many more students succeed.

Committee members collectively selected these recommendations as critical in the acceleration of systems change across Texas and beyond.



# **Mathematics Pathways Research and Rationale**



# Advanced Math in High School is Key to Degree Completion

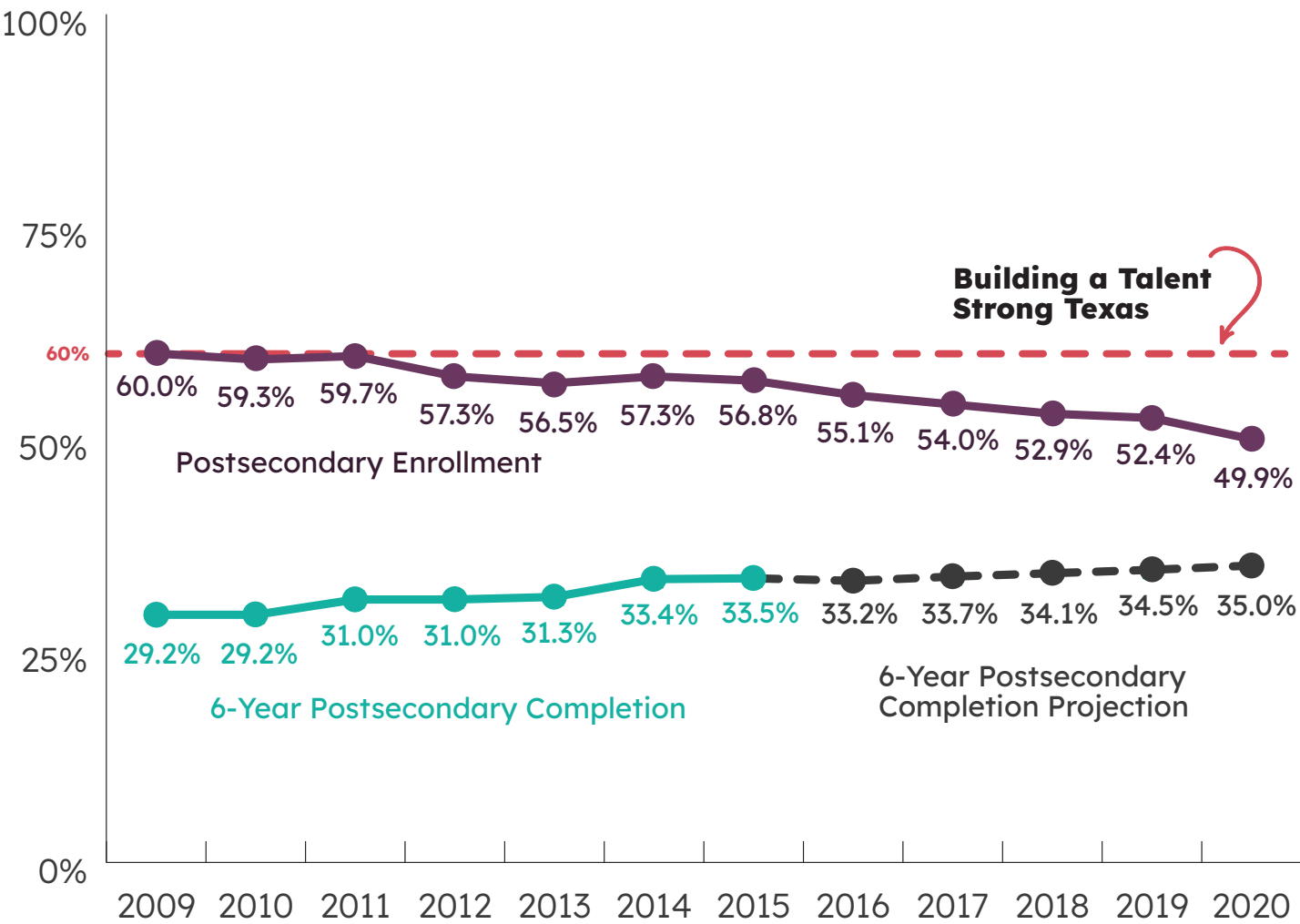
To drive systems change, we need to start with the end goal in mind.

The vision articulated in the Texas Higher Education Coordinating Board *Building a Talent Strong Texas* plan (previously 60x30TX Strategic Plan)<sup>1</sup> aims to ensure economic prosperity for our students and our state with the target of 60% of Texans ages 25-64 receiving a degree, certificate, or other

postsecondary credentials of value by 2030. With this target now less than ten years away, it is paramount to redouble our efforts to ensure that all students access pathways toward success in college, career, and life.

Carnevale, et al (2015) found that “since 2010, the [United States] economy has produced 6.6 million employment opportunities, 2.9 million of which are considered good jobs (a term we use for jobs in the upper-third by median wages of occupations in which they are classified). The key findings revealed

## Postsecondary Enrollment and Completion Over Time, Central Texas High School Graduates



<sup>1</sup> Texas Higher Education Coordinating Board. Building a Talent Strong Texas. Find Plan and Progress Reports Here: <https://www.highered.texas.gov/our-work/talent-strong-texas/>

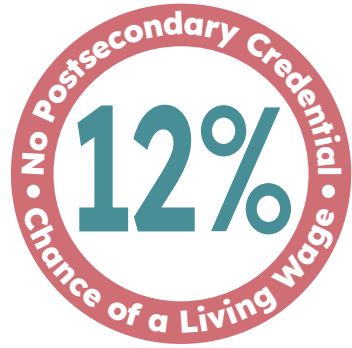
<sup>2</sup> Carnevale, A. P., Jayasundera, T., & Gulish, A. *Good Jobs are Back: College Graduates are First in Line*. 2015. Center on Education and the Workforce, McCourt School of Public Policy, Georgetown University.

that 2.8 million of these good jobs went to college graduates.”<sup>2</sup>

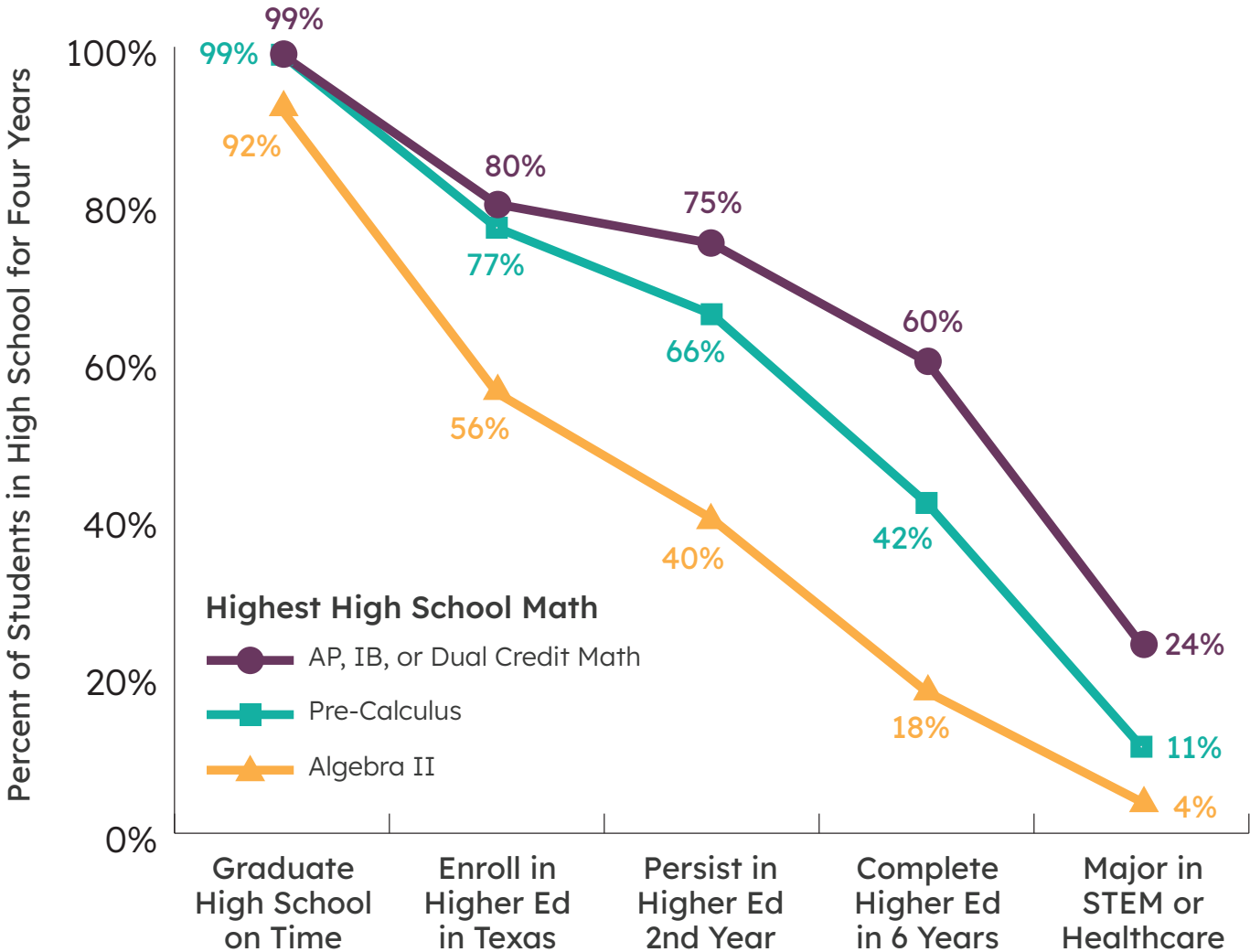
E3 Alliance research shows that students who do not earn a postsecondary credential within six years of leaving high school have just a 12% chance of securing a living wage job.

To meet the *Building a Talent Strong Texas* objective, Central Texas would need to reverse the current declining trend in postsecondary enrollment and double the number of students who both enroll and complete. We must do something radically different across the education pipeline.

Despite high school graduation and college completion rates rising in Central Texas, and community leaders working to increase college access and completion, we see a consistent drop in college enrollment. Doubling the rate of students earning a postsecondary credential demands alignment across all sectors of the P-16 system.



### Outcomes of Students in High School for 4 Years, Texas 2006 First Time 9th Grade Cohort



Source: E3 Alliance analysis of TEA and THECB data at the UT Austin Education Research Center



## House Bill 5

In 2013, the Texas Legislature passed House Bill 5, the Foundation High School Program, representing the most sweeping changes in our state's education policy in a generation.

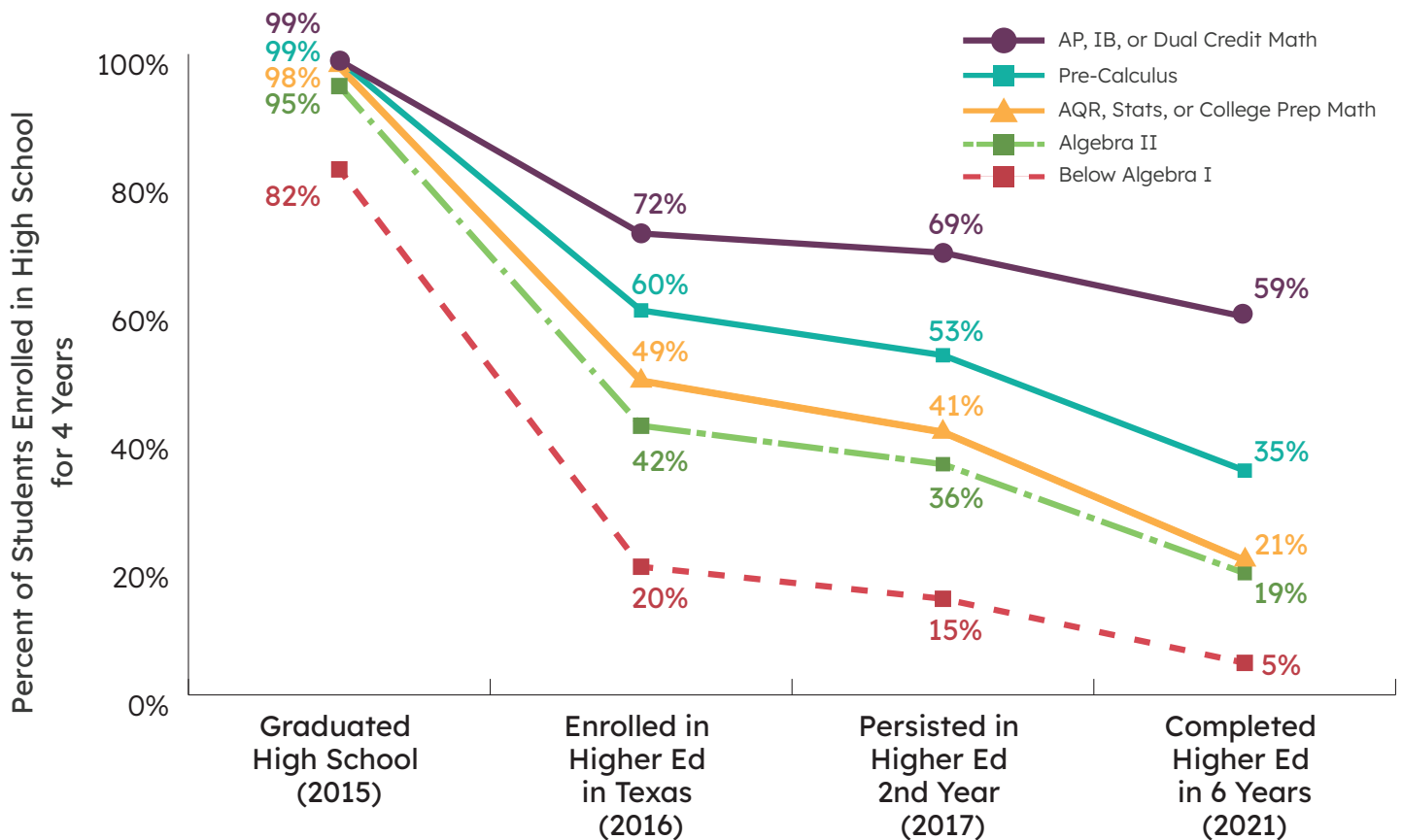
One change in House Bill 5 reduced the number of math courses required to earn a high school diploma from four to three. Additionally, the state only required Algebra II for students graduating with the highest honor, the Distinguished High School Diploma, and for those pursuing a STEM endorsement.

Much of the policy conversation in Texas centers on the need for a rigorous mathematics foundation, and

whether we should require students to demonstrate success in Algebra II and beyond.

To meet the  
**Building a Talent Strong**  
objective of 60% of Texans  
with postsecondary  
credentials by 2030,  
we must do something  
radically different...

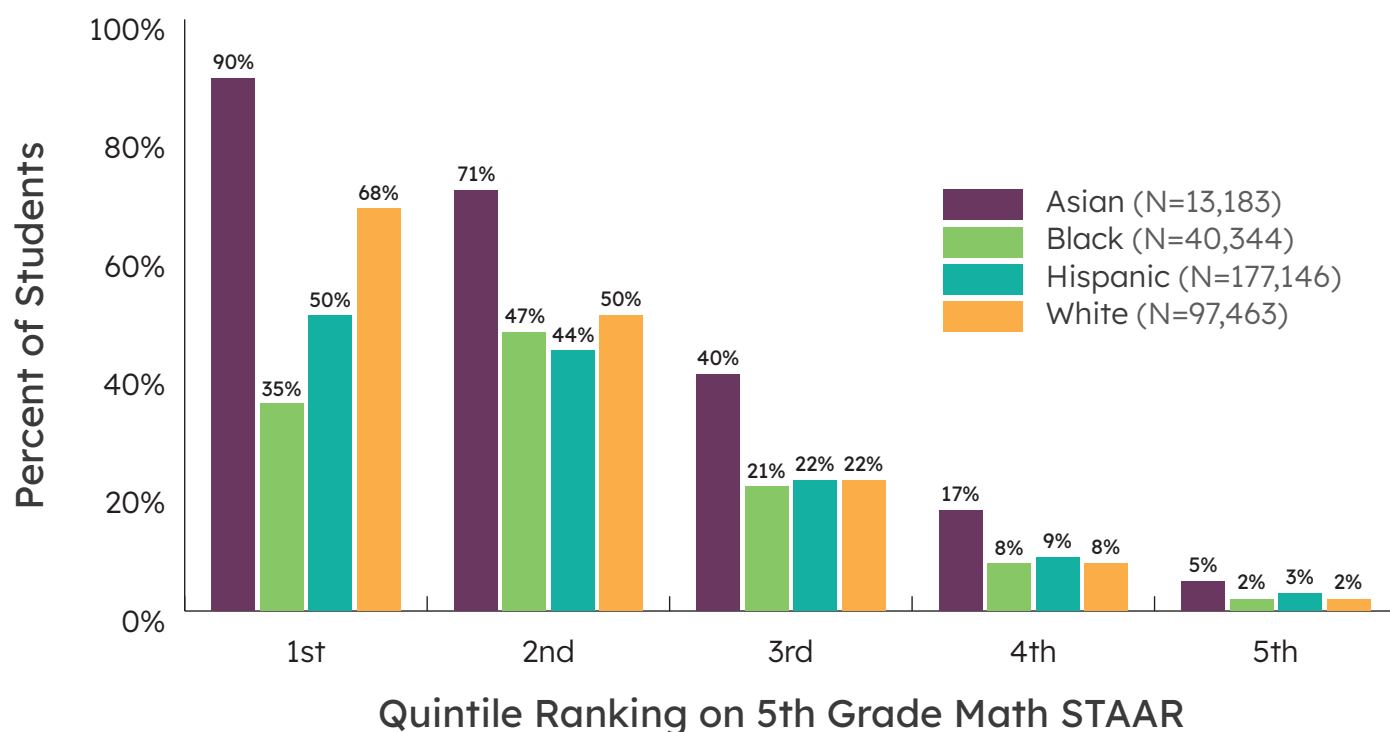
## Outcomes of Students Enrolled in High School for 4 Years by Highest High School Math, Texas Class of 2015



Source: E3 Alliance analysis of TEA and THECB data at the UT Austin Education Research Center

<sup>3</sup> Analysis conducted on data from years before other advanced courses with Algebra II as prerequisite were widely offered.

## Percentage of Texas Students Who Completed Algebra I by 8th Grade by Quintile on 2014 5th Grade Math STAAR



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

E3 Alliance longitudinal research first published in 2015, and updated in 2022, shows that Algebra II alone is not a driver for success. Students should take two math classes beyond Algebra II, including the most advanced math relevant to their aspirations to have a fighting chance at postsecondary success.<sup>3</sup>

E3 Alliance research also shows that when accounting for demographics and prior achievement, the more rigorous level of math course a student achieved in high school, the more likely the student would enroll, persist, and complete a postsecondary credential.

In 2018, E3 Alliance gathered recommendations from national, state, and local experts to address the disparities in the system.

We agreed that the necessary component for increasing higher education completion rates was to direct our collaborative efforts toward improving math pathways in the secondary years. With the understanding that a student's likelihood of completing a postsecondary credential increases with each additional, more rigorous math course taken in high school, E3 Alliance prioritized changing

district math acceleration practices. We consider this a game-changer and economic imperative for the state.

**Even our highest performing Hispanic and Black students, and students from low-income households, were guided into accelerated mathematics at rates much lower than their Asian and White non-low-income peers.**



One of the greatest lessons learned was the need to unify our work across the P-16 education pipeline beginning in elementary school and extending to the secondary and postsecondary levels.

Due to our partners’ dedication to improving practices and policies that hinder access for traditionally underserved students, we are already seeing incredible gains. More and more students are successfully taking math courses more rigorous than Algebra II in high school. We look forward to improving degree completion through accelerated and equitable mathematics pathways aligned with students’ career aspirations throughout Central Texas and beyond.

### Middle School Math Success

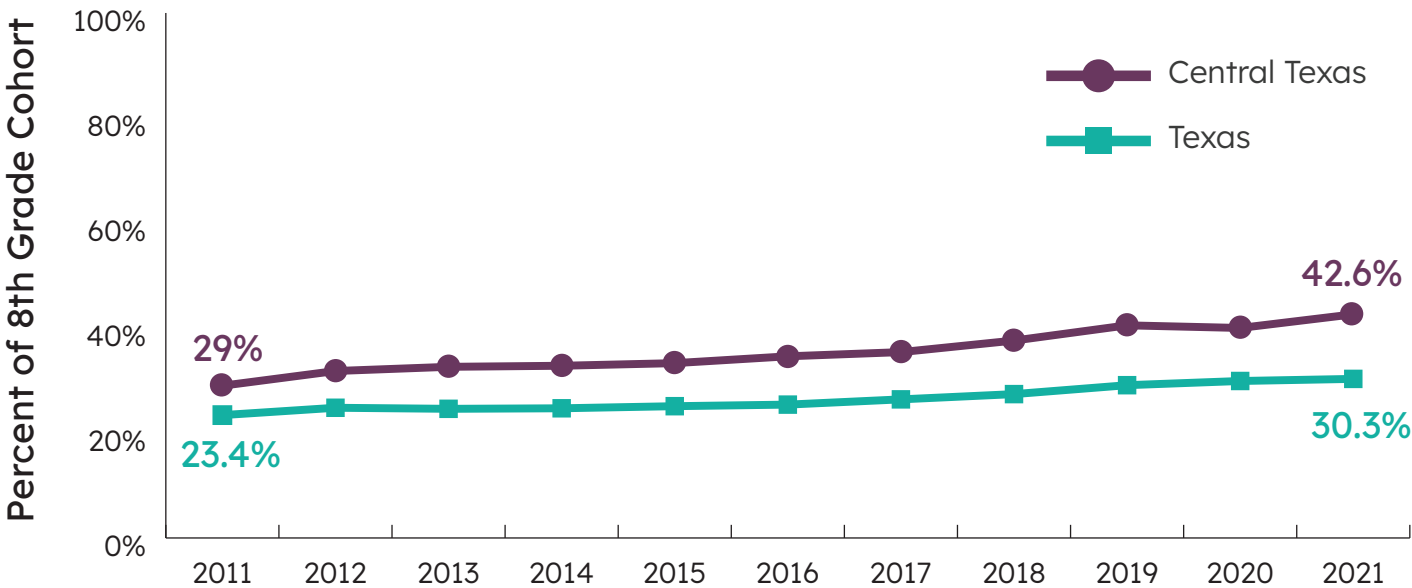
E3 Alliance conducted a regional and statewide analysis of the 2014 5th Grade Cohort to better understand the mathematics pathway between

the elementary years and throughout the middle school years.

The study revealed an alarming disparity by race and income among the cohort’s top-performing students. Even our highest performing Hispanic and Black students, and students from low-income households, were guided into accelerated mathematics at rates much lower than their Asian and White non-low-income peers.

The 5th Grade Cohort Study also indicated that nearly all students who scored in the top two quintiles (the top 40% of scores in Texas) on the Math STAAR in 5th grade and moved into accelerated mathematics pathways to take Algebra I in middle school successfully completed the course and passed the Texas STAAR end-of-course assessment<sup>4</sup>. This suggests that many more students could successfully accelerate in math.

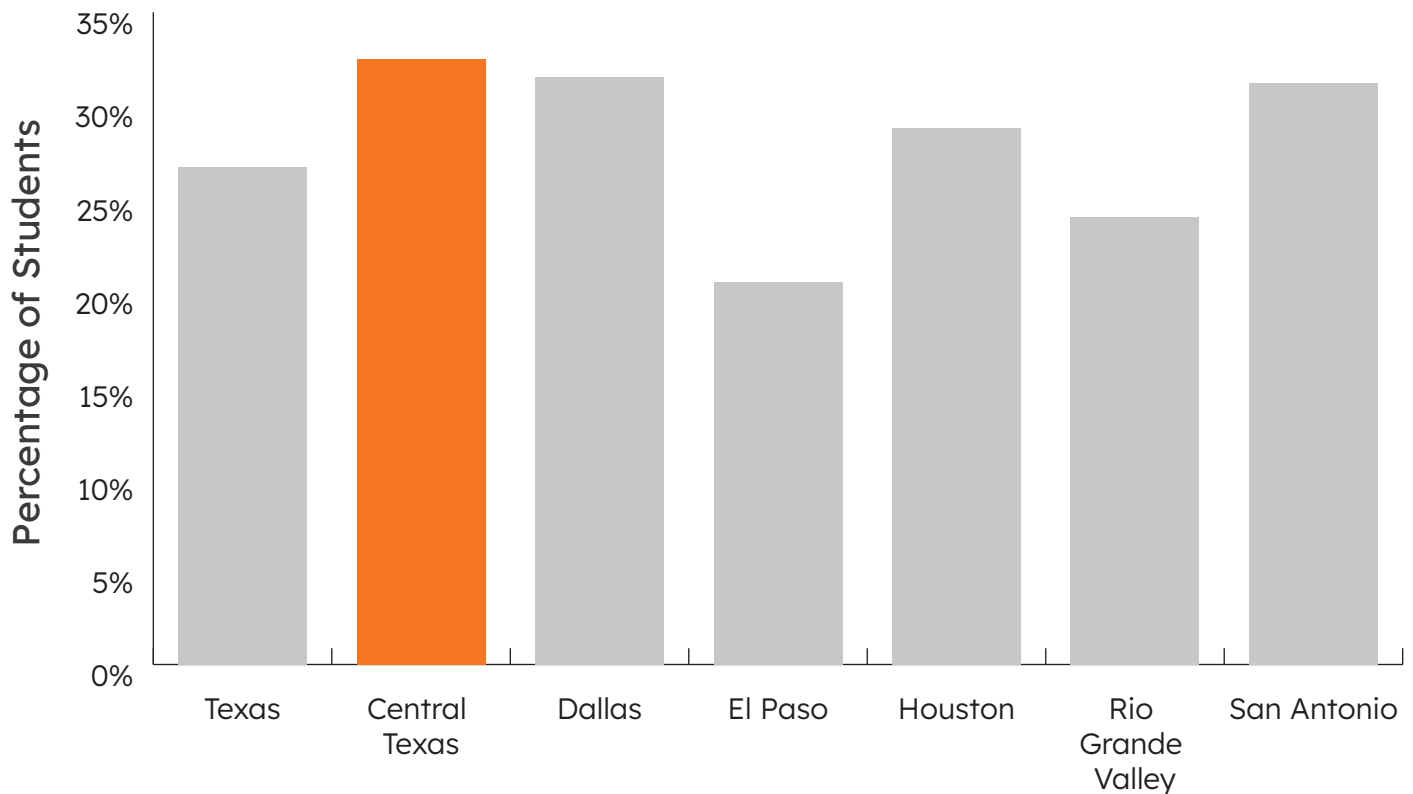
### Middle School Algebra I Completion Rate, Over Time, By Target, Central Texas & Texas



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

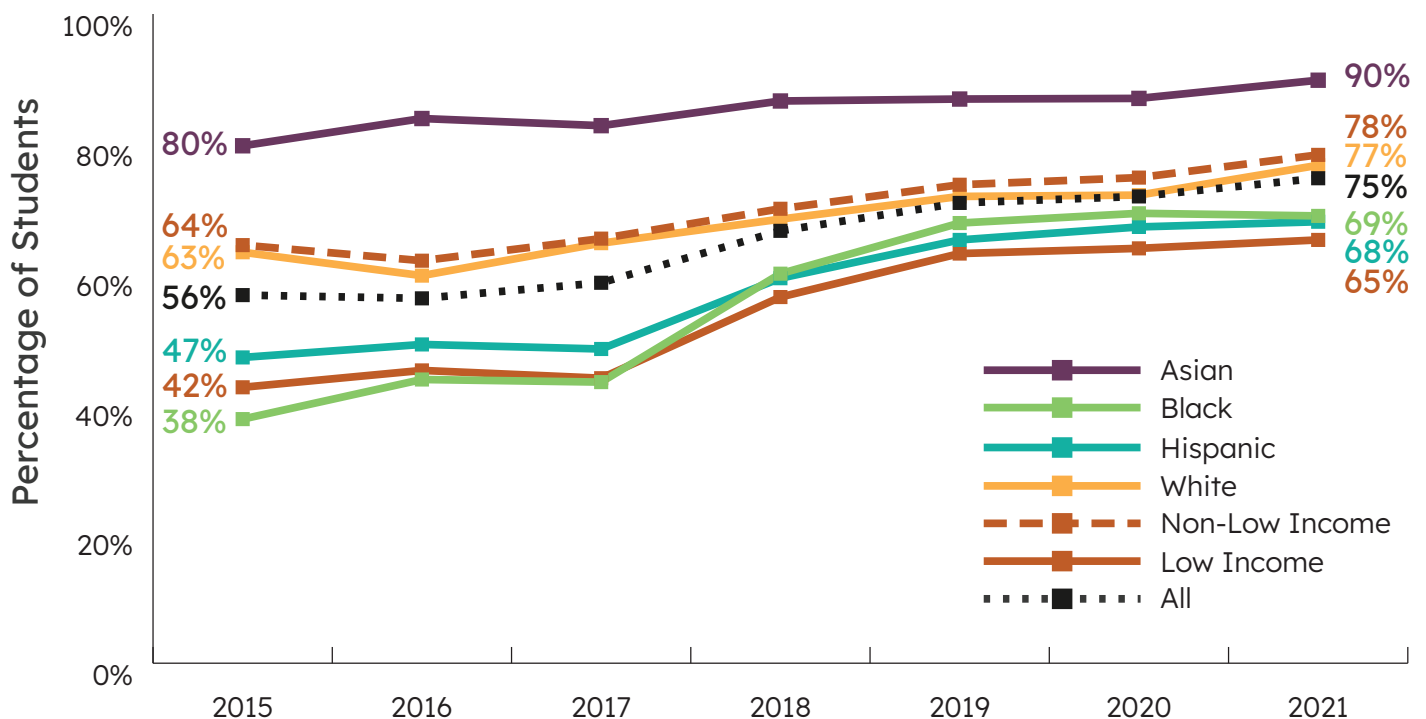
<sup>4</sup> Algebra I EOC STAAR is the only math assessment required under the High School Foundation Program. With House Bill 5, the State reduced the number of assessments required to earn a high school diploma. Previously, students also had to pass end-of-course assessments in Geometry and Algebra II. Students in the 2012 5th grade cohort who took Algebra I by 8th grade were held to the to the Phase 1 Standard, now called ‘Approaches Grade Level’; 98% of these students met the standard.

## Percentage of Students in 2012 5th Grade Cohort Completed Algebra I by 8th Grade



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

## High-Performing 5th Graders Completing Algebra I by 8th Grade, Central Texas



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

At the time of this study, the rate of math acceleration in Central Texas exceeded that of the state (35% versus 27%, respectively) and showed the highest rate of middle school acceleration across all metro regions. As a result of our partners' hard work in shifting these inequitable trends, the rate of math acceleration for our region has increased to 43%.

Fortunately, we see great gains from our partners' collective impact work. Through intentional, strategic changes in practices and policies at the district and campus levels, Central Texas has moved the needle across the region. We believe that the shift in local policies and practices that occurred from our 2018 recommendations caused significant gains with regard to race and income disparity.

Data shows Algebra I completion by 8th grade for both high-performing students and non-high-performing students increased over the past five years. From 2015 to 2020, we have closed the gap between high-performing Black and White students completing Algebra I in middle school by over 85%. As a result, more Black students are on a pathway that leads to higher likelihood of enrolling, persisting, and completing postsecondary in 6 years.

Unfortunately, in spite of this progress, the data still shows too few students from the top two quintiles are guided into accelerated mathematics despite appearing highly capable. These are our BEST-prepared students; accordingly, we expect to see high acceleration rates for both of these quintiles.

As educators, we must constantly examine our education practices with an eye on inequity, especially for our underserved Black and Hispanic students.

Despite our recent success, the disparities in income and race are far-reaching and require an intentional, equity-based approach to acceleration. This approach must unintentionally exacerbate the disparities in opportunity, support teachers, and back culturally responsive instruction so more students access the math they need to succeed.

The implications of these findings are profound. We now know that acceleration is the solution to reaching advanced mathematics in high school.

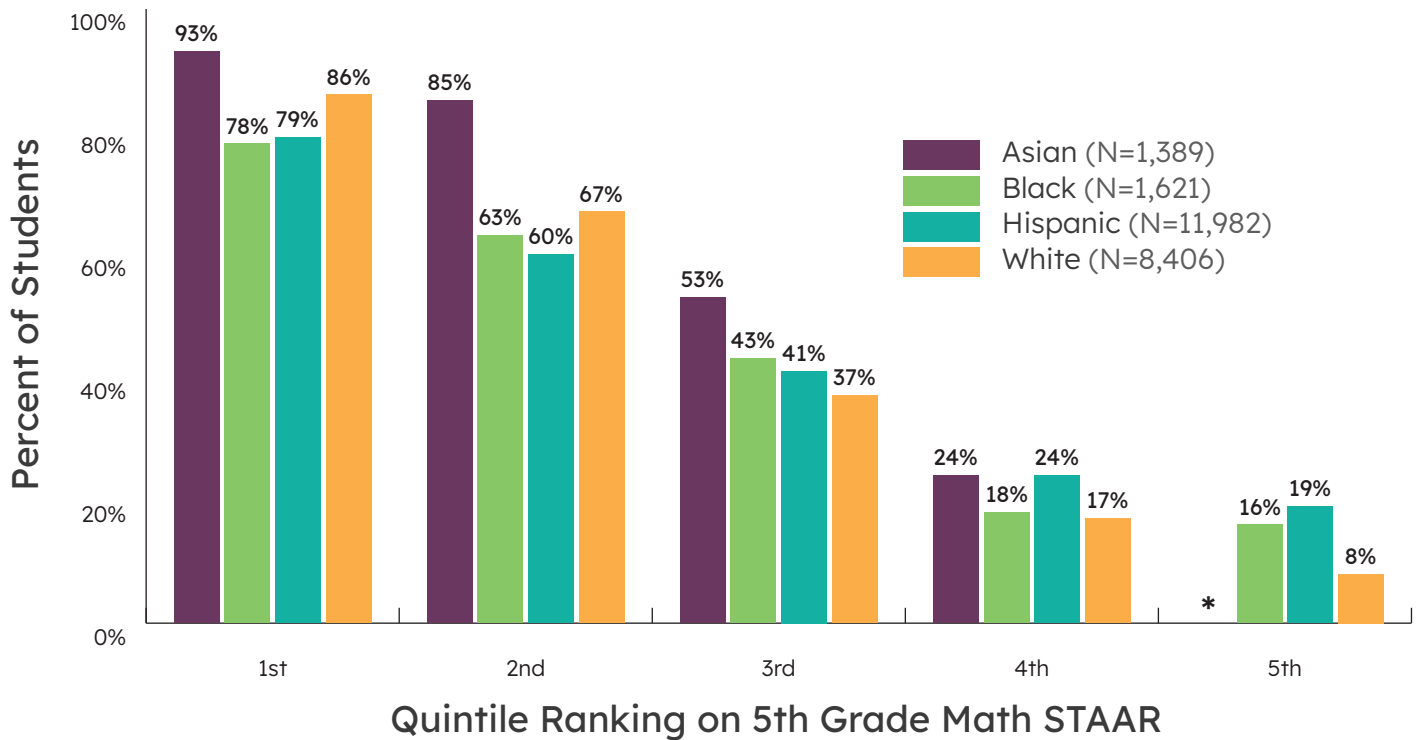


## GET MORE DATA

For more information on middle school math in Texas, visit our website:  
**[data.e3alliance.org/middle-school-math-profile](https://data.e3alliance.org/middle-school-math-profile)**



## Percentage of Central Texas Students Who Completed Algebra I by 8th Grade by Quintile on 2018 5th Grade Math STAAR



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

### High School Math Matters

We expect regional equity gains in acceleration starting in middle school to translate into reduced disparities for these same students when they enter and complete high school.

E3 Alliance’s research makes a concrete connection between acceleration and the opportunity to take college-level math. As many as two-thirds of students who accelerated in middle school ultimately reached college-level mathematics before they graduated from high school. Meanwhile, their peers taking traditionally ‘on-level’ math courses (Algebra I in 9th grade) were less likely to reach college-level mathematics.

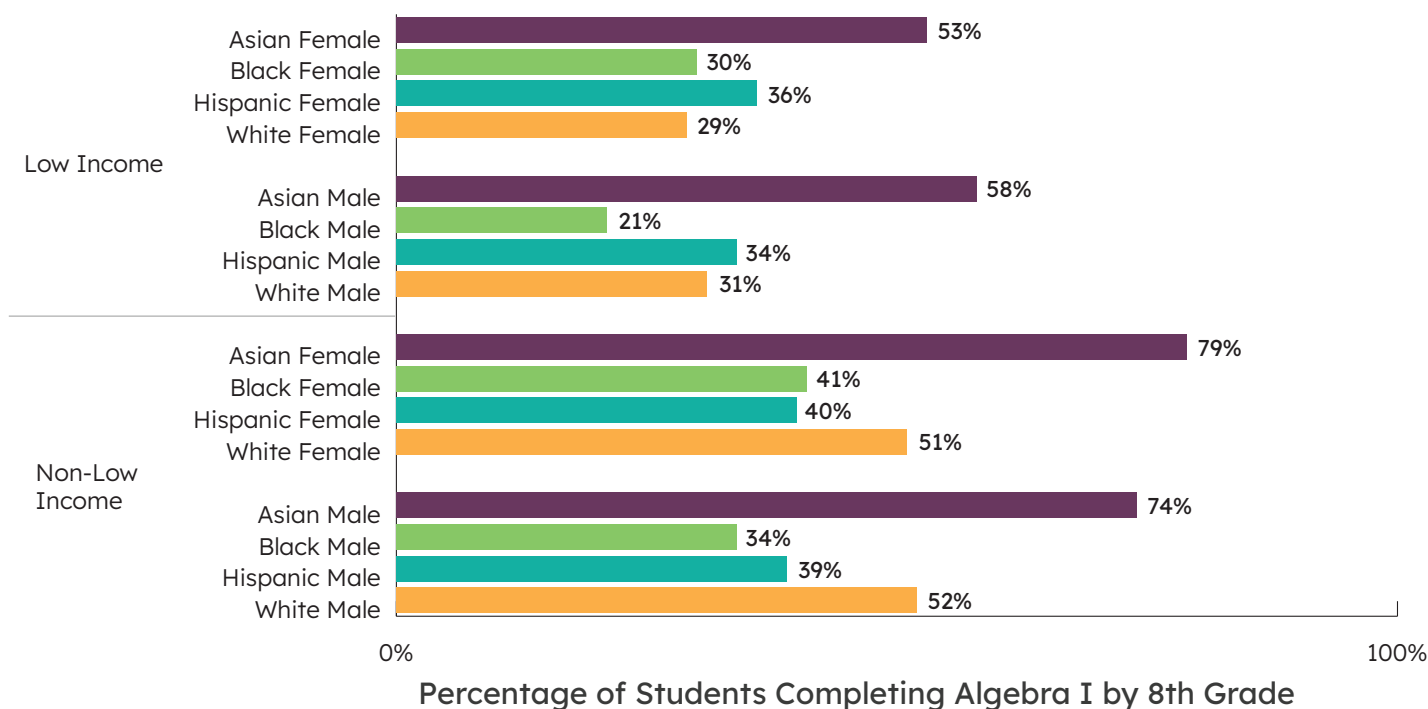
Despite the Texas Legislature passing House Bill 5 in 2013, which reduced the number of math courses required to earn a high school diploma from four to three, the number of Central Texas students

taking four or more years of math in high school continued to slowly increase until 2020. This reflects the understanding of our region’s leaders about the significance of four years of math in high school. We do see a slight decrease in 2021, potentially reflecting the impact of remote learning on student course-taking.

If we look at those students who are not taking four years of math while in high school, we see that income is a primary factor. This data is both informative and instructive for our district partners, especially when advising students about courses to take during their senior year. More outreach and engagement to students and families from low-income households are needed to inform them of senior-year course options and the impact of those decisions on life after high school.

Since we know that taking four years of math and more rigorous math courses in high school are

## Algebra I Completion by 8th Grade, Central Texas, 2020-2021



E3 Alliance analysis of TEA data at the UT Austin Education Research Center

both associated with enrollment, persistence, and completion of postsecondary credentials, it is equally imperative to understand the math courses students take, or do not take, during their senior year.

Data on math course-taking patterns consistently show increases in the rigor and variety of math courses students take over time. While nearly twice as many students in 2009 took no math in their senior year compared to those who took college-aligned math, data for the class of 2021 shows more students taking college-aligned math.

It is very encouraging that over time more students are taking the college-aligned math courses necessary to provide the foundation for college success. However, we must carry over the successful middle school efforts into the high school years to help students with postsecondary transition.

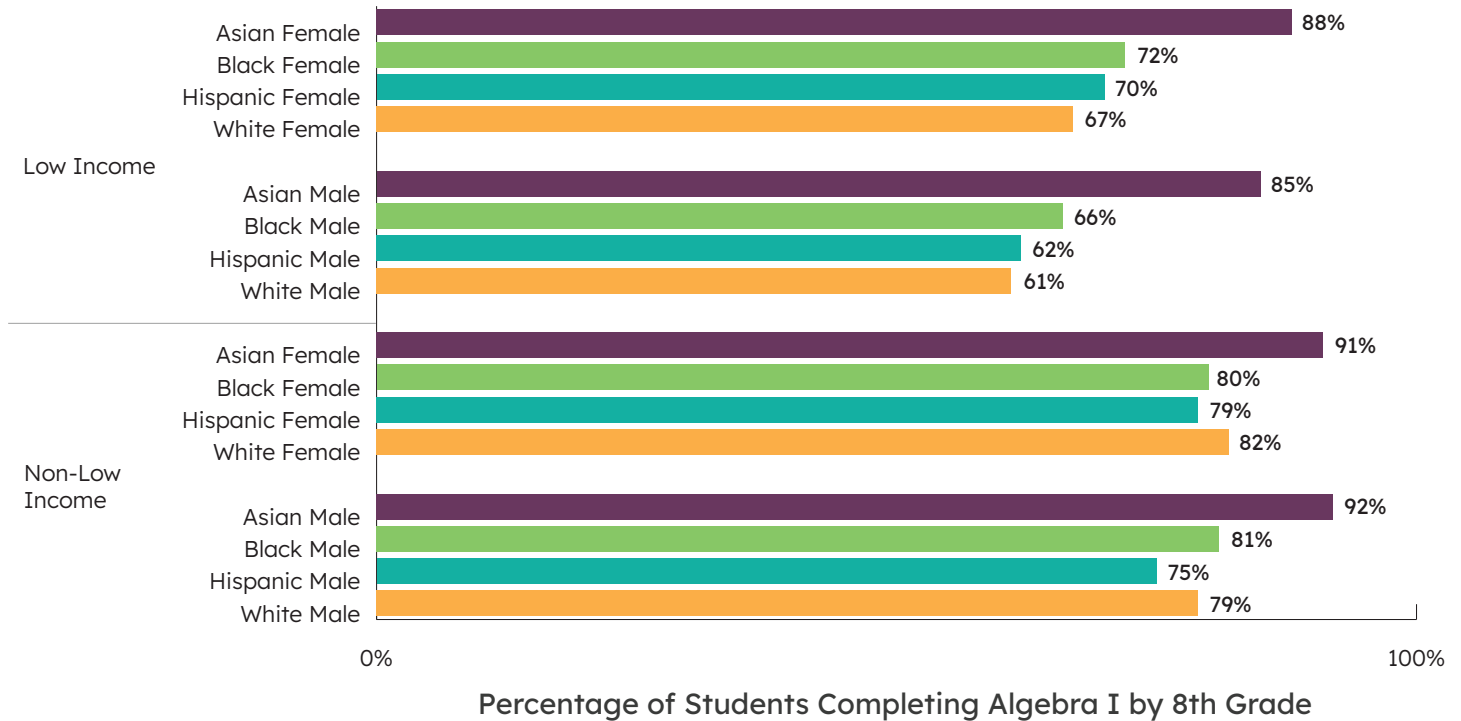
As with Algebra I course completion in middle school varying by gender, income, and race, we see a similar phenomenon for college-aligned math courses completed in high school.

### Collective Impact

Focusing on the transition from middle to high school is not enough. We must also think strategically so that from the earliest grade possible students see

**More outreach and engagement to students and families from low-income households are needed to inform them of senior-year course options and the impact of those decisions on life after high school.**

## Completion of 4+ Year of Math in High School 2020-2021 Central Texas, Senior Year Cohort



E3 Alliance analysis of TEA data at the UT Austin Education Research Center

their own potential and educators place them on the math pathway that aligns with their career aspirations and postsecondary plans.

Therefore, our collective impact work includes a collaborative process with our higher education partners, in addition to our PK-12 partners, to fully execute a P-16 approach and vision for the future. It is only through this comprehensive P-16 approach that we will best support the state's strategic plan and drive degree completion.

Practitioners in the field crafted recommendations in this guide based on these research findings with the hope that educators will adopt them into policy and practice. We strongly encourage school districts to move toward a comprehensive P-16 approach to systems alignment and support campus leadership in implementing equitable math pathways.



### GET MORE DATA

For more information on high school math in Texas, visit our website:  
[data.e3alliance.org/high-school-math-profile](https://data.e3alliance.org/high-school-math-profile)









# **Changing Policy and Practices for Accelerated, Equitable Math Pathways**

# A Necessary P-16 Approach

As we iterate our Pathways of Promise work, it is clear that the committee's recommendations to eradicate equity disparity in advanced math access and instruction represent needed change across the P-16 educational pipeline. Most notable is the need to focus attention on the transitions between elementary to middle school, middle to high school, and high school to postsecondary.

For this reason, we greatly value the partnership with our institutions of higher education as well as with the Dana Center in improving and strengthening mathematics education for all students through the Central Texas Math Alignment Task Force (CTXMAT), supported by the Michael & Susan Dell Foundation.

CTXMAT recommendations for changes to higher education policies and practices found at the end of this document are needed to increase equity of access to math courses aligned with student aspirations and high-quality, rigorous instruction for college and career success.

Definitions from The Aspen Institute<sup>5</sup> below convey how we frame our collective work while always keeping equity at the forefront of our decision making.

## Equity in Access

Equity in access intentionally enrolls students from every racial/ethnic, age, socioeconomic, or gender group to match the community or service area population.

## Equity in Learning

Equity in learning ensures faculty provide high-quality instruction and learning opportunities in and outside the classroom that reflect differences in

students' academic preparation levels, abilities, and cultural backgrounds.

## Equity in Success

Equity in success refers to the result of policies, practices, procedures, and mindset; there are no race- or class-based disparities in completion rates overall AND in high-wage, high-demand fields and programs of study.

With these considerations to keep equity top of mind, we commit to the region's vision of success and remain faithful to why we advance this work as a regional and state priority.

# P-16 Vision of Success, Our Goals, and Why it Matters

## Vision of Success

- A culture of high expectations for all students with exposure to engaging and problem-solving-based instruction that promotes critical thinking.
- Race/ethnicity and income demographics for access, learning, and success in each math course (middle school, high school, postsecondary gateway courses) will match the demographics of the student population.
- Steady and significant increases in student placement to thrive in accelerated math pathways in preparation for advanced mathematics, including college-level math (Advanced Placement, International Baccalaureate, OnRamps, or Dual Credit).
- Students take math each year of high school aligned with college and career aspirations or programs of study and enter directly into their first college-level mathematics requirement in their first year of college.

<sup>5</sup>The Aspen Institute. <https://www.aspeninstitute.org/>

- Regional advising guidelines are established for students to appropriately select math courses aligned with college and career aspirations.
- Cross-sector collaboration aligns the gateway mathematics requirements for the region's top 10 programs of study.

## Overarching Goals

- Start in early grades (pre-K through 2nd grade) to implement strong mathematics teaching to equitably prepare as many students as possible to enter the accelerated math pathway by 6th grade.
  - Eliminate existing equity disparity in middle school math acceleration while ensuring strong math pathways for all through high school and beyond.
  - Ensure every student takes four years of math in high school, to graduate college- and career-ready in mathematics, and to remain on track for earning a postsecondary credential.
  - Increase the percentage of 12th-grade students enrolled in and completing a college-aligned math course, while decreasing the percentage of 12th-grade students in Algebra II or below grade-level courses.
  - Increase the percentage of students enrolling and completing a gateway mathematics course (course for college credit required by programs of study) in their first year of college.
- by the end of 8th grade, compared to their non-low-income peers (18% versus 40%).
  - Students who do not take Algebra I by 8th grade are far less likely to enroll in college-level math in high school, a strong predictor of college success.
  - Only one in five students who pass Algebra II (now optional for most Texas students) will obtain any type of college credential (vocational, associate, or bachelor's degree) within six years.
  - Students who take any college-level math before high school graduation are three times more likely to earn a college credential than students whose highest math course is Algebra II.
  - Consistent advising policies and practices among partners within the region will help increase the alignment of math pathways from secondary to postsecondary while assisting counselors, advisors, students, and families about how to best select the math course appropriate for their goals.
  - Research (Belfield, Jenkins, and Fink, 2019) demonstrates that students' "momentum," such as completing their first college-level mathematics in their first year of college, is strongly associated with higher rates of completion in the long term.
  - Consistent and predictable gateway mathematics course requirements for the top 10 programs of study within the region will help increase the alignment of mathematics pathways from secondary to postsecondary.

## Why it Matters

- Mathematics performance in early grades is a strong predictor of postsecondary readiness and success.
- Even our BEST performing Black, Hispanic, and 5th graders from low-income households are under-placed into accelerated math pathways. The 8th-grade equity disparity across Texas is wide: fewer than half as many students from low-income households are enrolled in Algebra I

As mentioned, the PoP Steering Committee and CTXMAT leaders created recommendations in 2018 based on solid research findings.

These recommendations were refined in 2020, along with the addition of postsecondary recommendations, and are intended for current and future use.

On the following pages, strategies and metrics are provided for moving more students from the top two

<sup>6</sup> Belfield, C. R., Jenkins, D., & Fink, J. *Early Momentum Metrics Leading Indicators for Community College Improvement*. New York, NY: Community College Research Center.



quintiles (top 40%) into accelerated math pathways. They reinforce three priority areas: stakeholder engagement, alignment across grade levels, and teacher effectiveness.

Higher education recommendations support strategies in four priority areas: teaching and learning, alignment and transition, advising, and continuous improvement.

## In Conclusion

The work of the PoP steering committee and CTXMAT will continue to align and sustain the strong systems and structures created through the math pathways work. Our intentional collaborative efforts will ensure the success of this work continues to lead to successful and equitable outcomes for all students.



**We must think  
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that aligns with their  
career aspirations and  
postsecondary plans.**





Biology

$$y = mx + b$$

$$\begin{array}{rcl} 2x - 7 & = & 14 + 2y \\ + 1 & + 2 & \end{array}$$

# Recommendations



# Recommendations for Elementary School

## Stakeholder Engagement (Families/Student/ Staff)

**ES1: Engage families, students, and staff to explain the options for and the benefits of enrolling in accelerated mathematics and how to support learning at home:**

- Foster an assets-based mindset that math courses are not just something to get through, but critical for student success.

**ES2: Engage counselors to be more intentional in providing equitable access to accelerated math options.**

## Alignment Across Grade Levels

**ES3: Adopt a policy that provides equitable access to accelerated math options:**

- Place every student in the top two quintiles in 5th-grade math performance, or based on earlier performance, into an accelerated math pathway by 6th grade with the option to “opt-out”.
- Encourage and advise other students to “opt-in” as appropriate based on holistic measures.

## Teacher Effectiveness

**ES4: Support teachers with building expertise in scaffolding and differentiation for all students, utilizing a data-driven and student-centered approach for improving practice, while developing an assets-based mindset around math:**

- Utilize vertical professional learning communities (PK-12) so that teachers can share strong instructional practices in mathematics and identify and align critical content areas at each grade level.
- Provide professional development opportunities to build content knowledge within an equitable learning environment where student collaboration and voice are valued.

# Recommendations for Middle School

## Stakeholder Engagement (Families/Student/ Staff)

**MS1: Engage families, students, and staff (including elementary school staff) to explain the options for and the benefits of enrolling in accelerated and advanced math pathways and how to support learning at home:**

- Foster an assets-based mindset that math courses are not just something to get through, but critical for student success.

**MS2: Engage counselors to be more intentional in providing equitable access to accelerated math options.**

## Alignment Across Grade Levels

**MS3: Adopt a policy that provides equitable access via “open” enrollment in accelerated mathematics:**

- Place every student in the top two quintiles in 5th-grade math performance, or based on earlier performance, into an accelerated math pathway by 6th grade with the option to “opt-out.”
- Create multiple entry points to accelerated math coursework beyond 6th grade.

**MS4: Reinforce 8th-grade Personal Graduation Plan advising that promotes students taking the most advanced math, as appropriate, and requiring four years of math in high school with an “opt-out” policy.**

## Teacher Effectiveness

**MS5: Support teachers with building expertise in scaffolding and differentiation for all students, utilizing a data-driven and student-centered approach for improving practice, while building a deeper understanding of math pedagogy:**

- Utilize vertical professional learning communities (PK-12) so that teachers can share strong instructional practices in mathematics and identify and align critical content areas at each grade level.
- Provide professional development opportunities to build content knowledge, and to define, develop, and provide supports for accelerated math students within an equitable learning environment.

# Recommendations for High School

## Stakeholder Engagement (Families/Student/ Staff)

**HS1: Engage families, students, and staff to explain the benefits of enrolling in more advanced mathematics toward postsecondary completion and provide information about:**

- Prerequisites, admissions, readiness.
- Value of advanced math by higher education.
- Importance of Algebra II or equally rigorous equivalents.

**HS2: Engage counselors to encourage and support more students to take advanced mathematics, using student intentions to determine the highest math needed, then define course pathways to get there.**

## Alignment Across Grade Levels

**HS3: Adopt a policy that provides equitable access via “open” enrollment in advanced mathematics:**

- Work with middle school staff to create multiple entry points to advanced math coursework beyond 6th grade.

**HS4: Adopt/promote a policy that requires students to take four years of high school math in high school, including the most advanced math possible:**

- Allow “opting out” in special cases.
- Align course selections with career aspirations.

**HS5: Develop a campus-based plan for students who need additional supports to be college ready by 12th grade.**

## Teacher Effectiveness

**HS6: Support teachers with building expertise in scaffolding and differentiation for all students, utilizing a data-driven and student-centered approach for improving practice, while building a deeper understanding of math pedagogy.**

- Utilize vertical professional learning communities (PK-12) so that teachers can share strong instructional practices in mathematics and identify and align critical content areas at each grade level.
- Provide professional development opportunities to build content knowledge, and to define, develop, and provide supports for accelerated math students within an equitable learning environment.

# Recommendations for Higher Education

## Teaching and Learning

**TL1:** Develop and implement a continuous improvement process to increase students' completion of gateway mathematics courses in their first year of college, including both academic and student support structures.

**TL2:** Identify leaders to engage on a regular basis with CTXMAT to create and monitor a sustainable plan that vertically aligns and reciprocally communicates mathematics content and courses.

## Alignment and Transition

**AT1:** Participate annually, at a minimum, in collaborative S/PS (secondary/postsecondary) discussions to ensure alignment of mathematics course sequences/dual credit mathematics course offerings to higher education programs of study.

## Advising

**A1:** Adopt academic advising policies, practices, and tools that promote all incoming students to complete their recommended gateway mathematics course in their first year of college.

**A2:** Create a plan to regularly review the effectiveness of advising practices in aligning mathematics course-taking with student aspirations within a culture of belonging and inclusion.

## Continuous Improvement

**CI1:** Within a continuous improvement process, regularly collect and examine mathematics course-taking data to assess progress towards student success in first-year mathematics courses.

**CI2:** Within a continuous improvement process, regularly collect and examine mathematics course-taking data to assess progress towards alignment of mathematics course-taking with programs of study and equitable distribution of students across mathematics pathways.

**CI3:** Prioritize the disaggregation of collected data by race/ethnicity, gender, and Pell grant eligibility.









# E3 Alliance<sup>SM</sup>

Education Equals Economics

Transforming education systems through data and collaboration  
so **ALL** students succeed.

[e3alliance.org](http://e3alliance.org)