

Recommendations for Elementary Schools For Building Strong Math Pathways

The Goal

Start in early grades (PK through 2nd grade) to implement strong mathematics teaching to equitably prepare as many students as possible to enter accelerated math pathway by 6th grade.

Why It Matters

Mathematics performance in early grades is a strong predictor of postsecondary readiness and success.

Even our *BEST* performing Black, Hispanic, and low-income 5th graders are under-placed into accelerated math pathways.

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.

What To Measure

- % of 3rd graders achieving Meets and Mastery level for mathematics on state assessment, by student group (income, ethnicity)
- Identify students by quintile on state math assessment in 4th and/or 5th grade to inform student placement into accelerated math pathway
- % of 5th graders placed into accelerated math in middle school, by student group (income, ethnicity)
- Measures of academic growth in mathematics to assess gains for targeted populations in grades 3-5, including shrinking equity gaps



Vision of Success

- Steady and significant increases in students placement and prepared to thrive in accelerated math pathways
- Students placed in accelerated math courses are representative of campus student demographics (income, ethnicity)
- All students receive engaging and problem-solving based instruction that promotes critical thinking
- Culture of high expectations for all students

How Do We Get There?

- ☑ Engage families, explaining the benefit to students of enrolling in accelerated mathematics and how to support learning at home
- ☑ Place every student in top 2 quintiles in 5th grade math performance into accelerated math pathway by 6th grade with option to “opt out” (Target is 40%)
- ☑ Encourage and advise other students to “opt in” as appropriate based on holistic measures
- ☑ Develop new support structures for those who “opt in” who may have gaps in content knowledge or need other supports
- ☑ Recruit highly qualified teachers and build content knowledge and pedagogy in mathematics across all levels of math classes so that all students’ opportunities to engage in quality mathematics is maximized
- ☑ Professional learning communities should utilize a data-driven (qualitative and quantitative) and student-centered approach for improving practice
- ☑ Ensure adequate time for math instruction with at least 90 minutes per day.
- ☑ Utilize vertical professional learning communities (PK through grade 5) so that teachers can share strong instructional practices in mathematics and identify and align critical content areas at each grade level

Recommendations for Middle Schools For Building Strong Math Pathways

The Goal

Eliminate existing equity gaps in middle school math acceleration while ensuring strong math pathways for all through high school and beyond.

Why It Matters

The 8th grade equity gap across Texas is wide – fewer than half as many low-income enroll in Algebra I by the end of 8th grade, compared to their non-low-income peers (18% versus 40%)

There has been no change in the income or ethnicity gap for students taking Algebra I by 8th grade over the past 5 years - only with intentional focus and strategies will we address this gap.

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.

What To Measure

- % of 8th graders enrolled in Algebra I or higher, by student group (income, ethnicity)
- % of 8th graders achieving Meets and Masters standard on the Algebra I End of Course assessment, by student group (income & ethnicity)
- Measures of academic growth in mathematics show positive gains for targeted populations in grades 6-8, leading to a decline in equity gaps



Vision of Success

- Students enrolled in Algebra I by 8th grade are representative of campus student demographics (income, ethnicity)
- Equitable distribution of low-income and minority students represented in accelerated math pathways, without enrollment caps limiting opportunities
- All students receive engaging and problem-solving based instruction that promotes critical thinking
- Culture of high expectations for all students

How Do We Get There?

- ☑ Coordinate with elementary school faculty to advise families on the benefits of acceleration and advanced mathematics
- ☑ Ensure placement of every 5th grade student in top 2 quintiles on state math assessment into accelerated math pathway in 6th grade with option to “opt out” (Target is 40%)
- ☑ Create multiple entry points to accelerated math coursework beyond 6th grade, including open enrollment policy
- ☑ Annual review of district and campus data to identify students with potential to accelerate
- ☑ 8th grade Personal Graduation Plan advising should promote 4 years of high school math in high school, with students taking the most advanced math, as appropriate
- ☑ Craft professional development to build expertise in scaffolding and differentiation for all students, including those enrolled in accelerated math pathways
- ☑ Professional learning communities should focus on building deeper understanding of math pedagogy
- ☑ Professional learning communities should utilize a data-driven and student-centered approach for improving practice

Recommendations for High Schools For Building Strong Math Pathways

The Goal

For every student to graduate college and career ready in mathematics and on track for earning a postsecondary credential.

Why It Matters

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.

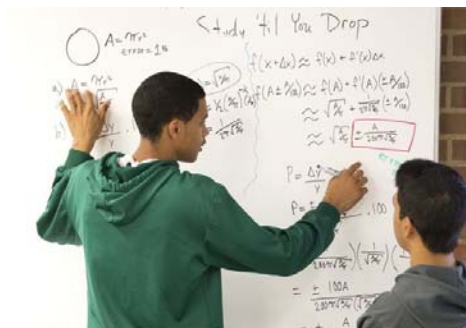
Only 1 in 5 students who pass Algebra II (now optional for most Texas students) will obtain any type of college credential (vocational, associates, or bachelor's) within 6 years.

Students who take any college level math before high school graduation are 3 times more likely to earn a college credential than students whose highest math course is Algebra II.

What To Measure

- % of 9th graders achieving Meet and Masters standard on the Algebra I End of Course assessment, by student group (income & ethnicity)
- Measures of academic growth in mathematics show positive gains for targeted populations in Algebra I, leading to a decline in equity gaps
- % of students (overall, and by student group) taking math in Algebra II
- % of students (overall, and by student group) taking math BEYOND Algebra II
- % of students college ready in math as indicated by meeting TSI

Data from UT Austin Education Research Center; the conclusions of this research do not necessarily reflect the opinions or official position of the Texas Education Agency, the Texas Higher Education Coordinating Board, or the State of Texas.



Vision of Success

- Students take math each year of high school
- Steady and significant increases in students taking advanced mathematics, including college level math (Advanced Placement, International Baccalaureate, or dual credit)
- Equitable distribution of low-income and minority students represented in advanced mathematics
- Culture of high expectations for all students

How Do We Get There?

- ☑ Advocate for a systemic approach and planning across grade levels to encourage and support more students to take advanced mathematics, including counselor training
- ☑ Message clearly to students, families and staff, that Algebra II or equally rigorous equivalents, plus *more* advanced math, is critical for postsecondary completion
- ☑ Advise all students to take 4 years math in high school, taking the most advanced math possible and aligning course selections with career aspirations
- ☑ Implement district-wide policy for “open” enrollment in advanced mathematics
- ☑ Invest in, and enact policies, that build content expertise and pedagogy in high quality math instruction
- ☑ Develop a campus-based plan for students who are not college ready by 12th grade

Data Dashboard: Tool to Support District & Campus Equity Dialog

| Dashboard to Determine Equitable Acceleration Practices by 8 th Grade | | | | | | |
|--|---|---|--|--|---|--|
| | Student Enrollment in 8 th grade | # Students Enrolled in Algebra 1 in 8 th Grade | # Students Enrolled in Math <i>Beyond</i> Algebra I in 8 th Grade | Total # of Students Accelerated in 8 th Grade Algebra I + Beyond | % of Students Accelerated in 8 th Grade Total Students Accelerated ÷ Enrollment | Variation from Target 40% Accelerated – 40% |
| Campus 1 | | | | | | |
| Black | | | | | | |
| Hispanic | | | | | | |
| White | | | | | | |
| Low Income | | | | | | |
| Non-Low Income | | | | | | |
| Campus 2 | | | | | | |
| Black | | | | | | |
| Hispanic | | | | | | |
| White | | | | | | |
| Low Income | | | | | | |
| Non-Low Income | | | | | | |
| Campus 3 | | | | | | |
| Black | | | | | | |
| Hispanic | | | | | | |
| White | | | | | | |
| Low Income | | | | | | |
| Non-Low Income | | | | | | |
| Campus 4 | | | | | | |
| Black | | | | | | |
| Hispanic | | | | | | |
| White | | | | | | |
| Low Income | | | | | | |
| Non-Low Income | | | | | | |
| Campus 5 | | | | | | |
| Black | | | | | | |
| Hispanic | | | | | | |
| White | | | | | | |
| Low Income | | | | | | |
| Non-Low Income | | | | | | |