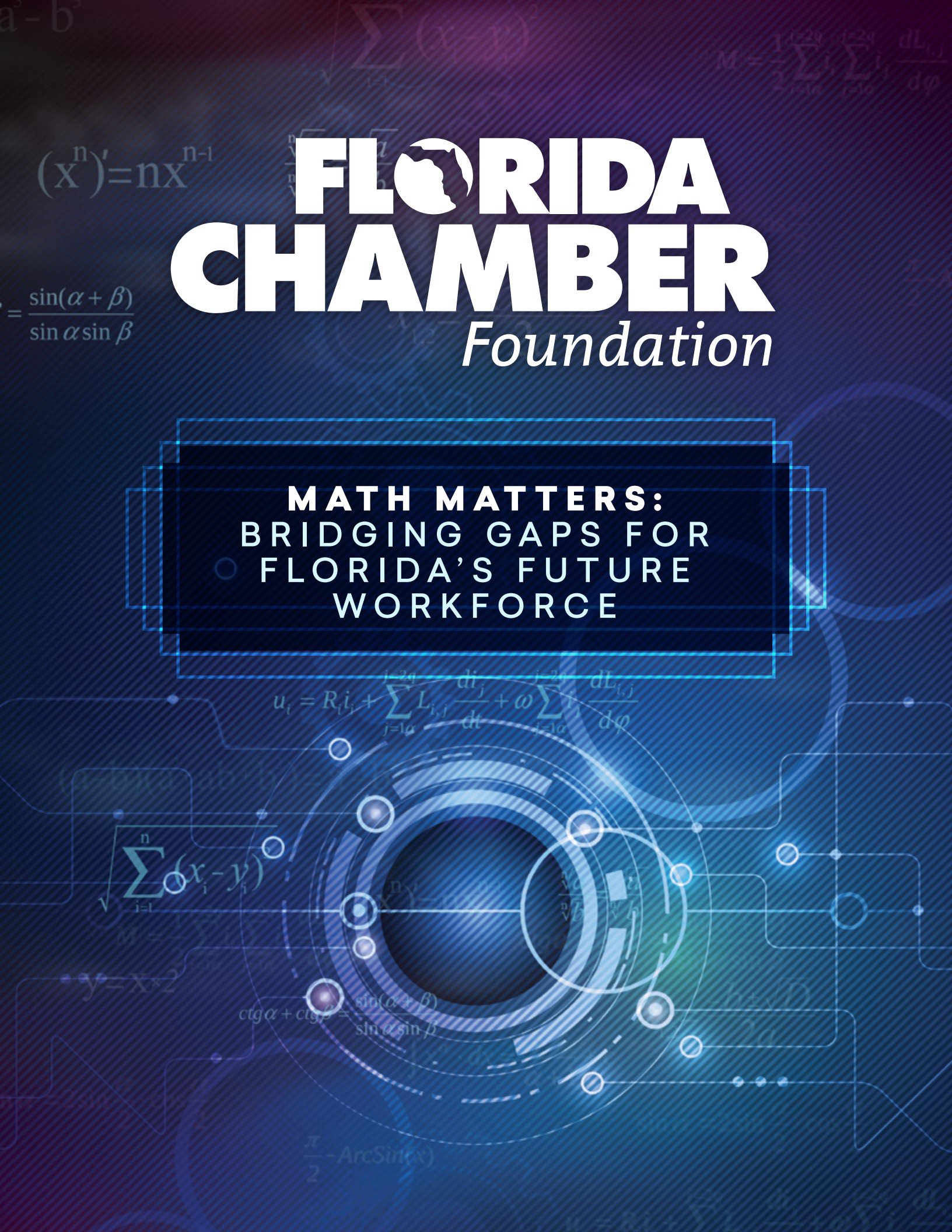
FLORIDA CHAMBER Foundation

MATH MATTERS: BRIDGING GAPS FOR FLORIDA'S FUTURE WORKFORCE



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"Talent is quickly replacing the tax incentive as the most important economic development tool in the toolkit."

MARK WILSON
President,
Florida Chamber of Commerce & Foundation

Executive Summary

FLORIDA'S CURRENT AND EMERGING WORKFORCE must be prepared with the essential and technical math skills for a growing and globally changing economy. The Florida Chamber Foundation's *Florida 2030 Blueprint* established a bold plan for Florida to become a top 10 global economy by 2030 and provides a strategic roadmap for success under the Six Pillars Framework. The goals addressed in this report are tied to the "Talent Supply & Education" pillar, which is tracked via TheFloridaScorecard.org and highlighted annually at the Florida Learners to Earners Workforce Solution Summit. Math skills serve as a cornerstone for workforce readiness and economic growth, making awareness around math proficiency in Florida vital to the future of Florida's talent pipeline.

The ***Math Matters: Bridging Gaps for Florida's Future Workforce*** report examines the key factors influencing math proficiency in Florida's K-12 schools and identifies actionable strategies to improve student outcomes. It highlights the challenges, opportunities, and systemic changes needed to build a stronger talent pipeline through enhanced math proficiency. This report draws on publicly available school-level data on end-of-course math assessment passing rates (General Math, Algebra 1, and Geometry) provided by the Florida Department of Education to assess math proficiency. Students who pass their end-of-course math assessment are considered "math proficient" for their year in school.

Key insights include:

- In 2023-24, over 128,600 Florida 10th, 11th, and 12th graders tested as "not proficient" in math.[1] Many of these students are taking Algebra 1 or Geometry later in high school when the course is considered "below their grade level."

*"**Math matters**, so this research matters. The Florida Chamber Foundation's CDP Council implores Florida leaders to prioritize this issue. **You'd be hard-pressed to find a job that doesn't require some level of math proficiency**."*

–David Odahowski, President & CEO, Edyth Bush Charitable Foundation, and Chair, Florida Chamber Foundation Community Development Partnership (CDP) Council

1 There were approximately 56,000 10th, 11th, and 12th graders who tested as "math proficient" and approximately 486,000 10th, 11th, and 12th graders who were not tested because they had already progressed beyond Algebra 1 and Geometry courses.

- A modest 10 percentage point increase in math proficiency would translate to an additional 27,000 Florida 8th graders entering high school each year with strong math skills.
- As chronic absenteeism increases, math proficiency rates decrease. This effect seems to be particularly relevant in rural and underserved districts.
- Florida business leaders and policymakers should consider expanding access to early support in math to keep students from falling behind well before they reach high school. This may include additional resources for early intervention programs, mentoring, and/or internships.
- Increased access to education data will facilitate research projects that can investigate the impact of policy and practice interventions statewide.

Through our analyses, this report underscores the importance of targeted interventions for struggling students, innovative approaches to reduce absenteeism, and the role of data accessibility in enabling more precise, impactful strategies. It concludes with actionable recommendations for business leaders, policymakers, and educators to enhance math achievement and ensure equal opportunity at earned success for all Florida students.

By addressing these interconnected challenges, this report ultimately provides a roadmap for improving math proficiency statewide, ensuring that Florida's students are equipped for academic success and the demands of a rapidly evolving workforce. This is especially important, as many of the **Top 30 High-demand Careers (2032)** outlined in this Florida Chamber Foundation report at the state and regional levels require proficiency in math, in both STEM and non-STEM fields. A forthcoming report from the Florida Chamber Foundation further dives into the topic of what employers, educators, and parents all say about math education—the next generation needs to be math proficient to have the critical thinking and problem-solving skills that are necessary for success in a changing world.

*"**Math proficiency** isn't just about academic success; it's about **preparing the next generation** for high-demand, high-paying careers that drive our economy forward."*

–Andy Watts, CFO, Brown & Brown Insurance

Introduction

MATH PROFICIENCY IS MORE THAN an academic benchmark, it's a cornerstone of workforce readiness and economic vitality. In Florida, where the demand for talent across all industries is rapidly growing, math proficiency gaps in K-12 education—if left unchecked—threaten to hinder Florida's future prosperity. For example, students who continue to struggle with foundational math concepts in middle and high school may be less likely to pursue or succeed in postsecondary education programs, creating long-term talent shortages for Florida's key industries.

Math proficiency is becoming a topic of increased importance among Florida leaders and legislators. The Florida Chamber of Commerce strongly advocated for the passage of House Bill 1361 (2024), which provides resources to the New Worlds Tutoring Program to support schools in improving pre-kindergarten through 5th grade math achievement.

Businesses seeking to strengthen the education pipeline and prepare students for high-demand fields can play an important role in supporting math achievement. By focusing efforts on students progressing through key courses such as Algebra 1 and Geometry, business leaders can help address the needs of students at an important juncture in their educational and career trajectories. Interventions at this level—whether through tutoring programs, mentoring initiatives, or resource funding—can have a lasting impact on student success and workforce readiness.

This report examines K-12 math proficiency across Florida using data from the Florida Department of Education (FDOE). For an overview of how math proficiency is measured in Florida's schools see ***Appendix A.*** By identifying opportunities for improvement, this analysis aims to support Florida's economic and educational goals, including the *Florida 2030 Blueprint* goal of ensuring 100% of 8th graders perform math at or above grade level, led by 2030 goal leader the UF Lastinger Center for Learning. This means all 8th graders should be passing their end-of-course exams in General Math, Algebra 1, or Geometry—whichever course they are enrolled in at 8th grade. With targeted strategies and collaborations between businesses, educators, and policymakers, Florida can bridge gaps in math proficiency, secure its economic future, and provide the national model for excellence in math proficiency.

The Current State of Math Proficiency in Florida

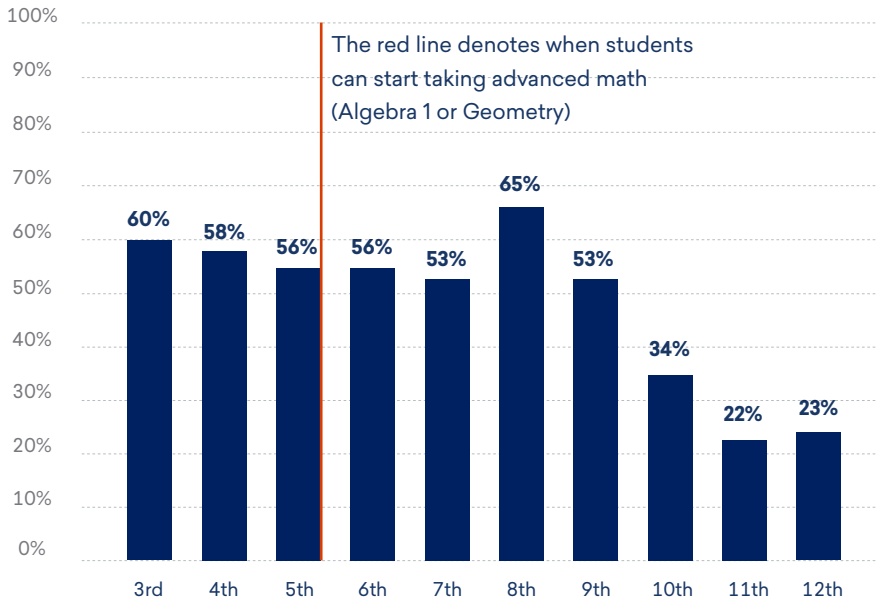
THE DISTRICT-LEVEL DATA REVEAL A CONCERNING TREND: a significant drop in pass rates of end-of-course math assessments among 10th, 11th, and 12th graders in Florida (lowest among 11th and 12th graders). This concerning drop in performance correlates with the fact that these same students are enrolled in math courses that are on grade level or below grade level for their year in school. In other words, not all students fare the same by the time they enroll in Algebra 1 or Geometry. Students who were "behind" and took these courses in later grades have more difficulty being proficient in these subjects.

To improve overall pass rates, it is essential that we **focus on supporting students who are on or below grade level in their mathematics** *course sequence before they reach 10th grade.*

2024 Math Assessment Pass Rates

According to TheFloridaScorecard.org, in 2023-24, 65 percent of Florida's 8th graders passed their end-of-course math exams (up three percentage points from 2022-23).[2] However, **Figure 1** shows a concerning trend that the percent of students who pass their end-of-course exams decreased substantially among high schoolers.

FIGURE 1: PERCENT OF FLORIDA STUDENTS PASSING GENERAL MATH, ALGEBRA 1, AND GEOMETRY END-OF-COURSE ASSESSMENTS, 2023-24.



Source: 2024 K-12 Student Math Assessment Results, Florida Department of Education.

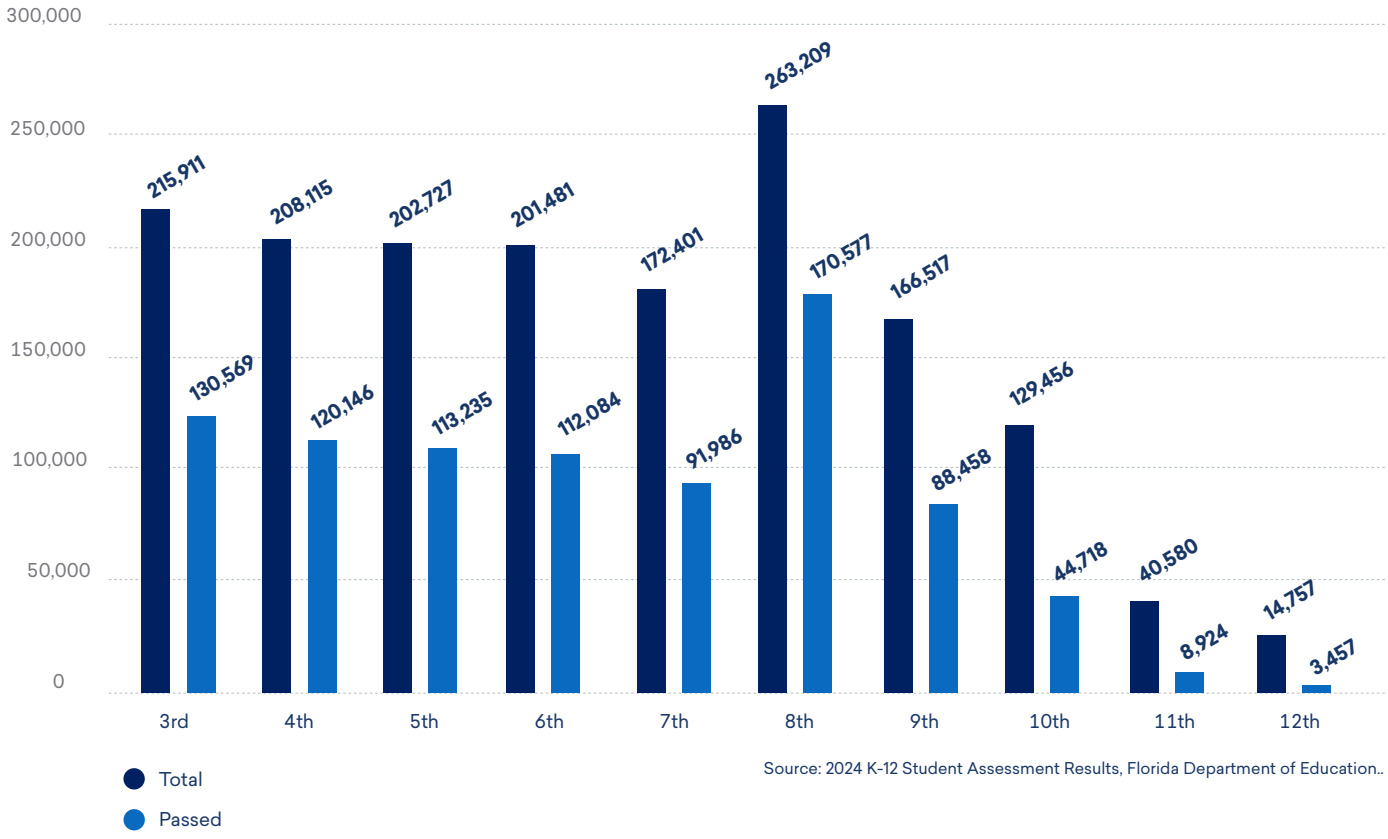
2 These exams are based on Florida standards and benchmarks and therefore comparisons to other states are not made in this report.

More than half of students in 2023-24 passed their end-of-course math assessment, with passing rates ranging from 53 to 65 percent among students in grades 3 through 9 (**Figure 1)**. However, there is a significant decline in math assessment passing rates among 10th graders and beyond, where the percentage of students passing drops to 34 percent, 22 percent, and 23 percent of 10th, 11th, and 12th graders taking math assessments, respectively. While initial analyses suggest that most high schoolers are not passing their end-of-course math exams, additional analysis reveals a more nuanced story.

Figure 2 compares the number of students who took vs. the number of students who passed General Math, Algebra 1 and Geometry end-of-course assessments at each grade level in 2023-24. These state-level headcounts reveal that the number of students taking the Florida Benchmarks for Excellent Student Thinking (B.E.S.T.) end-of-course math exams (Florida's standardized assessment for Algebra 1 and Geometry) decreases dramatically among older high school students, from 166,517 Florida 9th graders to just 14,757 Florida 12th graders.

55% of students in grades 3 through 12 passed *their end-of-course math assessment.*

FIGURE 2: NUMBER OF FLORIDA STUDENTS TAKING AND PASSING GENERAL MATH, ALGEBRA 1, AND GEOMETRY END-OF-COURSE ASSESSMENTS, 2023-24.



Source: 2024 K-12 Student Assessment Results, Florida Department of Education..

This decline in the number of test-takers is largely due to students completing their high school graduation requirement math courses—Algebra 1 and Geometry—in middle school or early in high school. This does not mean students who are no longer being tested are not proficient in math. Rather, this measuring stick for math proficiency is no longer used for students who progress through Algebra 1 and beyond Geometry. In other words, once these students pass these courses and their corresponding B.E.S.T. end-of-course exams, they transition into advanced courses like Algebra 2, Pre-Calculus, Calculus, or Statistics, which do not have B.E.S.T. end-of-course exams. Therefore, the students who move beyond Geometry in high school are no longer included in the test-taking data for grades 10, 11 and 12, hence the decline in test takers seen in **Figure 2.**

This trend raises important questions: How do advanced students in advanced courses impact the overall data on math performance? How should policymakers and business leaders create targeted interventions for the students who need help the most? The following sections delve deeper into these dynamics, exploring the influence of grade-level placement, course progression, and other factors that may contribute to the observed patterns in math proficiency.

In the 2024 school year alone, over **128,600 Florida 10th, 11th and 12th graders tested as not proficient in math.**[3]

Exploring the Decline in High School Math Assessment Pass Rates

To better understand this trend, it is helpful to examine the end-of-course math exam pass rates of students by their grade-level status (taking a mathematics subject course that is considered above, on, or below their respective grade-level) while transitioning into high school. **Table 1** provides an example of students who are considered above, on, or below grade level. Students who excel at math in

TABLE 1 – STUDENTS CATEGORIZED AS ABOVE GRADE-LEVEL, ON GRADE-LEVEL OR BELOW GRADE-LEVEL BASED ON THEIR SCHOOL YEAR AND THE MATHEMATICS COURSE THEY ARE TAKING AT THAT TIME.

A Student in this Grade...	Taking this Course...	Is Considered...
8th grade	Algebra 1	Above grade level
9th grade	Geometry	Above grade level
9th grade	Algebra 1	On grade level
10th grade	Geometry	On grade level
10th grade	Algebra 1	Below grade level
11th grade	Geometry	Below grade level

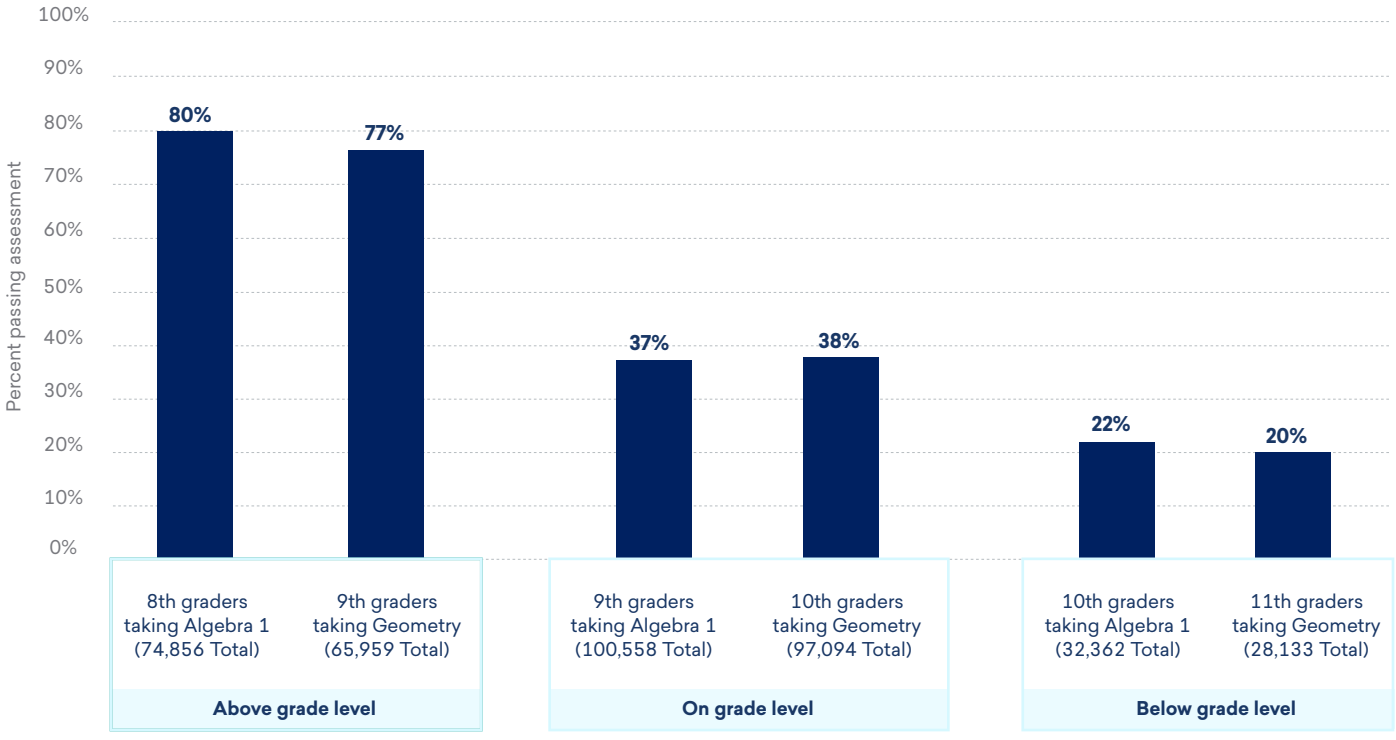
3 There were approximately 56,000 10th, 11th, and 12th graders who tested as "math proficient" and approximately 486,000 10th, 11th, and 12th graders who were not tested because they had already progressed beyond Algebra 1 and Geometry courses.

earlier grades are placed into Algebra 1 and/ or Geometry in middle school, while students who are not excelling in math in earlier grades continue to take General Math courses in middle school and then progress into Algebra 1 in 9th grade.

Figure 3 analyzes a single school year of data (2023-24) and disaggregates end-of-course math assessment pass rates for students depending on which grade they are in and what math course they are taking at that time. Students are considered above grade level, on grade level, or below grade level based on the criteria outlined above in **Table 1**.

- **Above Grade Level:** High school students who are enrolled in math courses above their grade level have significantly higher pass rates (80% for Algebra 1 and 77% for Geometry).
- **On Grade Level:** High school students taking courses expected for their grade level have a pass rate of 37-38%.
- **Below Grade Level:** High school students taking Algebra 1 and Geometry courses later than expected (below grade level) show much lower pass rates of 20–22%.

FIGURE 3: PERCENT OF FLORIDA STUDENTS PASSING ALGEBRA 1 OR GEOMETRY END-OF-COURSE MATH ASSESSMENTS, BY GRADE-LEVEL STATUS, 2023-24.



Source: 2024 K-12 Student Math Assessment Results, Florida Department of Education.

These data suggest that students who begin advanced math coursework earlier perform better, which can drive up the state averages and mask the needs of those below grade level and on grade level. This highlights the importance of early identification and support for learners. ***Appendix B*** provides an even more in-depth analysis by breaking down these performance trends and showing the exceptionally high proficiency rates among students who are two and three grade levels above their peers.

Summary of Findings

High school math pass rates may seem like a concerning indicator of educational performance, but they reflect a deeper, more nuanced challenge: the success of advanced middle school students masks the struggles of a more vulnerable group—students who are on or below grade level. When these students face barriers in progressing through gateway math courses like Algebra 1 and Geometry, they are often not equipped with the foundational skills necessary for advanced mathematics coursework in postsecondary education and can have limited workforce options (Lee and Mao, 2020).

The successes of advanced middle school students **masks the struggles of a more vulnerable group**—*students who are on or below grade level.*

Recognizing this dynamic presents an opportunity for business leaders to play a pivotal role in addressing these challenges. By investing in educational partnerships and initiatives, businesses can help strengthen foundational math skills, foster advanced learners, ensure a steady pipeline of workforce-ready graduates, and strengthen our STEM talent.

Actionable Opportunities for Business Leaders

1 Support Targeted Interventions for Struggling Students:

- Partner with schools to fund math tutoring programs or after-school support initiatives, especially for students on or below grade level, beginning with elementary schools.
- Develop mentorship or internship opportunities that connect advanced learners to real-world applications of math, such as engineering or data analytics.

2 Encourage Early Advancement in Math:

- Provide resources for early intervention programs that identify and address math skill gaps in elementary and middle schools.
- Early numeracy skills play an essential role in getting kids off to the right start. The Florida Chamber Foundation's Florida Business Alliance for Early Learning Advisory Board focuses on identifying solutions to ensure our

youngest learners are receiving high quality education starting at birth. To get involved and support their work to ensure that Florida's children are set on a path to success in every community, visit flchamber.com/earlylearningFL.

3 Strengthen Middle-to-High School Transitions:

- Collaborate with schools to design programs that bridge the gap between middle and high school math education, ensuring students sustain their progress.
- Advocate for business-led math readiness initiatives, such as summer camps or workshops focused on Algebra 1 and Geometry proficiency for students entering high school.

Business leaders who want to get involved with their local education communities can take advantage of and join a regional Education and Industry Consortium led by the Florida Chamber Foundation's Community Development Partner and 2030 goal leader, CareerSource Florida.

Adrienne Johnston, President & CEO, CareerSource Florida, speaks on workplace skills alignment at the Florida Chamber Foundation's 2024 Florida Learners to Earners Workforce Solution Summit

Why it Matters

Investing in these areas not only addresses immediate educational challenges but also contributes to long-term economic growth. By ensuring more students achieve math proficiency, Florida's businesses can benefit from a larger, more skilled talent pool ready to tackle roles in STEM, finance, logistics, and other high-demand fields. For business leaders, supporting these efforts is not just a philanthropic act—it's a strategic investment in the state's economic future and your future workforce.

Florida Business Alliance for Early Learning Project

"When industry partners with the academic community, **we have the power to bridge educational and workforce gaps by creating pathways for students to gain real-world experience.** *At Lockheed Martin, we've seen firsthand how investing in our communities and* **supporting further education changes lives and builds a skilled workforce** *ready to tackle tomorrow's challenges."*

–Jay Pitman, Vice President and General Manager, Training and Logistics Solutions, Lockheed Martin

Closing the Rural Gap: Opportunities for Math Improvement in Underserved Districts

OUR ANALYSES SHOW THAT RURAL DISTRICTS tend to have lower end-of-course math exam pass rates, which suggests these can be areas for targeted interventions statewide. As Senator Ben Albritton shared on stage at the Florida Chamber's 2025 Legislative Fly-in, a "rural renaissance" is necessary in Florida to reinvigorate and reinvest in rural communities. **Learn more: see the Florida Chamber Foundation's research brief on focused economic development in Florida's 31 rural counties.**

Senate President Ben Albritton speaks on rural economic development at the Florida Chamber of Commerce's 2025 Legislative Fly-in.

"Education plays a critical role in the future of our state *- especially for our communities in rural North Florida. Since I first ran for the Florida House, workforce development and training have been a top priority of mine.* **By equipping our students with the tools they need to succeed**, *like strong mathematical programs, we are building a* **pipeline of skilled workers and future leaders."**

– Rep. Jason Shoaf, District 7

Comparative Analysis of Bottom and Top Quartile School Districts

Rural school districts in Florida face a unique set of challenges that can contribute to lower math assessment pass rates, particularly in comparison to their urban and suburban counterparts. These challenges often stem from limited resources, geographic isolation, lower percentages of children enrolled

in early learning at 3 and 4 years of age, and higher rates of poverty, all of which create barriers to student success and can be measured at the zip code level on TheFloridaGapMap.org. Rural districts may also struggle with access to qualified math teachers and the ability to offer a variety of advanced coursework (due to lower enrollment numbers).

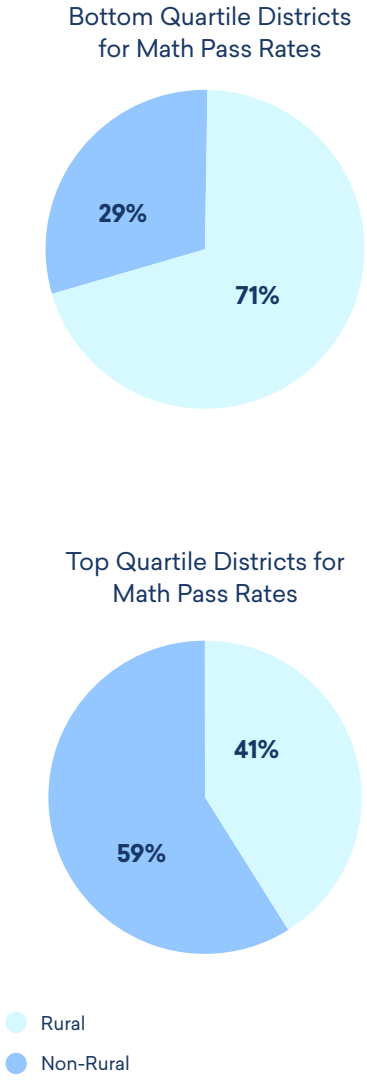
The data analyzed for this report highlights these disparities clearly. A closer look at Florida's school districts reveals that rural communities are disproportionately represented and among the lowest-performing districts in end-of-course math exam pass rates. These findings underscore the need to focus on rural areas as key opportunities for improvement, particularly for initiatives aimed at addressing educational resources and fostering student success. For example, the FDOE publishes an annual critical shortage report, which ranks math as the 4th highest subject area (out of 29) in need of additional teachers. In other words, math courses are sometimes taught by teachers who are not certified in math. This issue is compounded in low-economic rural districts, which are identified as a "critical teacher shortage area" by the State Board of Education, per section 1012.07, Florida Statutes. Fortunately, the FDOE's concerted efforts to address critical teacher shortage areas is putting Florida on a path to ensuring we train, employ, and retain teachers in all localities across the state.

Of the 67 districts included in this study, the bottom performing quartile refers to the 17 school districts with the lowest math assessment pass rates in the 2023-24 school year. Among the bottom performers, 71% in the bottom quartile are rural districts (**Figure 4)**, even though only 46% of all districts are rural. Further, nine of the rural school districts rank in the bottom 10 for math assessment performance. Also, among the bottom performers, 12 districts are predominantly composed of minority student populations. Looking into the socioeconomic landscape, each of the bottom performing districts falls below the state's median household income ($71,711), with county median household incomes ranging from $44,985 in Taylor County to $69,027 in St. Lucie. Further, among the bottom quartile, the proportion of economically disadvantaged students ranges from about 50% to 86% and two districts surpass 80%.

Alternatively, the 17 school districts in the highest quartile of math proficiency rates exhibit opposing characteristics to those in the bottom quartile. Of the 17 top-performing districts, 11 are non-rural (**Figure 4**). Fourteen of these school districts have a demographic composition of non-Hispanic white students exceeding 50%. The percentage of economically disadvantaged students shows a considerable range, spanning from about 30% to 71%, with St. Johns County being the exception at 18%.

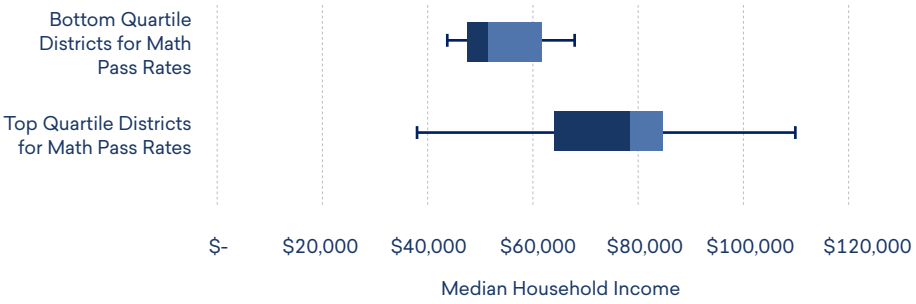
Figure 5 compares the median household income distribution for school districts in the bottom and top quartiles of math assessment pass rates. The bottom performing quartile shows a narrow range of median household incomes, with

FIGURE 4: THE PERCENTAGE OF RURAL DISTRICTS AMONG THOSE PERFORMING IN THE BOTTOM AND TOP QUARTILES OF MATH PROFICIENCY.



values clustered between approximately $48,000 and $63,000, well below the state's median household income ($71,711). The top performing quartile displays a wider range of incomes, generally spanning from $65,000 to $86,000, with some districts exceeding this range. This indicates greater economic diversity among the highest-performing districts, though their household incomes are higher than those of the bottom quartile.

FIGURE 5: MEDIAN INCOME DISTRIBUTION FOR DISTRICTS IN THE BOTTOM AND TOP QUARTILES OF END-OF-COURSE MATH ASSESSMENT PASS RATES.



Source: 2023 County Profiles, Office of Economic & Demographic Research.

Florida Prosperity Project

The Florida Chamber Foundation's Florida Prosperity Project, led by the Prosperity Project's Advisory Board, focuses on the connections between economic disadvantage, education outcomes, and the other indicators of well-being and pathways out of poverty, ensuring all Floridians have an equal opportunity at earned success. To see where your zip code falls on the path to prosperity, visit TheFloridaGapMap.org and visit flchamber.com/prosperityFL to learn how you can get involved in our efforts to improve zip code level outcomes.

Actionable Opportunities for Business Leaders and Policymakers: Addressing the Challenges in Rural and Economically Disadvantaged Districts

Rural and low-income school districts face systemic challenges that hinder math proficiency, including students who come from homes with limited resources, geographic isolation, and a shortage of qualified teachers. For business leaders, these issues present an opportunity to make a tangible impact on education and workforce development. By focusing on targeted initiatives, businesses can help bridge the gap in math performance, build a stronger talent pipeline, and support long-term economic growth. Below are actionable strategies for business leaders and policymakers to address the needs of rural and economically disadvantaged communities.

1 Invest in Teacher Recruitment and Retention

- **The Challenge:** Rural districts may struggle to attract and retain highly qualified math teachers due to geographic isolation, and fewer professional development opportunities (Fregoso and Pugel, 2024; Tran and Smith, 2020; Biddle and Azano, 2016).
- **Opportunities for Business Leaders and Policymakers:**
  - Sponsor professional development programs to equip teachers with the skills to teach advanced math courses that are relevant to career pathways.
  - Partner with local colleges or universities to create "grow-your-own" teacher programs that encourage local students to pursue careers in math education.

2 Expand Access to Advanced Math Courses

- **The Challenge:** Many rural schools lack the resources to offer advanced math courses, limiting students' ability to prepare for college and STEM careers.
- **Opportunities for Business Leaders and Policymakers:**
  - Collaborate with schools to implement online learning platforms or virtual instruction for advanced math courses.
  - Sponsor dual-enrollment programs that allow high school students to take college-level math courses.

"Rural communities are essential to Florida's economy, yet they face unique challenges in education that directly impact workforce readiness.

By addressing opportunities in rural counties, we can build a stronger future with more opportunity for all of Florida."

–Beth Cicchetti, CEcD, MEDP, Executive Director, Florida Economic Development Council

- Provide funding and volunteers for math competitions, summer math camps, or extracurricular STEM activities to inspire students to pursue advanced coursework.

3 Support Access to Educational Technology

- **The Challenge:** Students in low-income districts may lack access to essential technology, such as graphing calculators, laptops, and/or reliable high-speed internet.
- **Opportunities for Business Leaders and Policymakers:**
  - Donate devices such as laptops or tablets to rural schools to support both classroom learning and homework.
  - Work with internet providers to fund broadband expansion projects in underserved communities.
  - Create grants for rural schools to purchase math-specific technology, like graphing calculators or software for algebra and geometry tutoring.

The Florida Chamber Foundation's *Florida 2030 Blueprint* "Infrastructure & Growth Leadership" pillar includes a goal of ensuring that 100% of Florida residents have access to high-speed communications technology, led by goal leader Florida Internet & Television. Currently at 96.3%, most Floridians have access to high-speed internet, but families in rural areas are disproportionately without access. The Florida Gap Map (found at TheFloridaGapMap.org) is a resource that can be used to track the percentage of households with access to any internet service and the percentage of households with access to at least one computer at home. These resources are necessary to allow students to complete their homework, utilize online tutoring services, and advance towards math proficiency. The Florida Gap Map also serves to assist business leaders with where to strategically focus philanthropy and investment.

Promising Practice: Community Partnership Schools

One innovative approach to addressing the needs of underserved children and overcoming barriers to learning in both urban and rural districts is the Community Partnership Schools (CPS) model. CPS creates equitable learning environments by providing on-campus access to a broad range of resources, including academic support, health services, and social programs, tailored to support student success.

Children who grow up in poverty are five times more likely to drop out of high school, highlighting the need for interventions that address both academic and social barriers. The Children's Home Society of Florida (CHS) has taken the lead in this effort, reaching over 30,000 students across 31 CPS locations statewide. Their efforts have achieved significant outcomes: C.A. Weis Elementary in Pensacola surpassed district averages in math passing rates by 7 percentage points, while Webster School in St. Augustine saw a remarkable 46 percentage point increase in FSA math passing rates from 2018 to 2021. Similarly, at OCPS Academic Center for Excellence (ACE) K-8 in Orlando, math passing rates rose from 32% in 2018 to 48% in 2019.

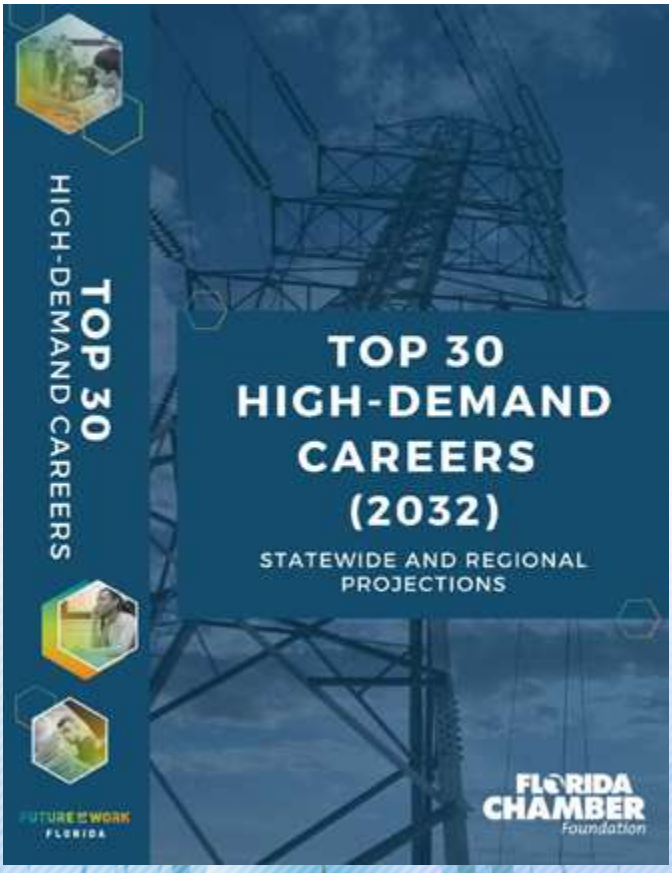
CHS, a founding partner of the CPS model alongside the University of Central Florida and Orange County Public Schools, serves as an Advisory Board Member for the Florida Chamber Foundation's Florida Prosperity Project. By integrating funding and resources from multiple sectors—health, education, and human services—CPS programs collaborate with local providers to deliver academic enrichment, wellness services, and support systems directly within schools. This holistic approach creates opportunities for students and communities alike, breaking down barriers to education and fostering long-term success.

Why it Matters for Business Leaders and Policymakers

Investing in education, particularly in rural and low-income areas, is not just a philanthropic opportunity—it is a strategic investment in the future workforce. By addressing the systemic barriers that impede math proficiency, business leaders and policymakers can help cultivate a skilled talent pipeline equipped for high-demand fields like STEM, manufacturing, logistics, healthcare and more. Moreover, these efforts strengthen communities, enhance economic mobility, and ensure that all students—regardless of geography or income—have the tools to thrive in school, work, and life. The *Florida 2030 Blueprint* sets an ambitious goal of achieving 100% math proficiency among 8th graders, but with only 65% currently proficient, significant progress is still needed. However, as we make progress towards that goal, even a modest 10 percentage point increase in 8th grade math proficiency translates to an additional 27,000 Florida 8th graders entering high school each year with strong math skills—individuals who can contribute to Florida's workforce just four years later.

FUTURE OF WORK FLORIDA

The Florida Chamber Foundation's Future of Work Advisory Board tackles difficult questions like these to help ensure Florida's talent pipeline continues to meet the job demands of today and the future. Through strategic partnerships between employers, educational institutions, and policymakers, the initiative plays an essential role in strengthening Florida's talent pipeline, driving economic growth, and positioning the state as a national leader in workforce development. The careers outlined in the Florida Chamber Foundation's "Top 30 High Demand Careers" seek to increase awareness about in-demand career options, most of which require math proficiency. Visit FLChamber.com/futureofworkflorida to learn more or get involved with our efforts.



Attendance Matters: Tackling Chronic Absenteeism to Boost Math Success

IF STUDENTS ARE MISSING SCHOOL, they are missing learning milestones and can easily fall behind. Our research finds a notable correlation between chronic absenteeism and end-of-course math assessment pass rates: As absenteeism increases, math proficiency rates decrease.

Attendance is the foundation of academic success, yet chronic absenteeism—defined at the state-level as missing 10% or more school days—remains a pervasive issue in Florida's schools. Its impact is particularly evident in math proficiency, where consistent classroom instruction is key to building foundational skills and mastering complex concepts. Chronic absenteeism disrupts students' learning trajectories and can widen existing gaps, disproportionately affecting rural and economically disadvantaged districts. Further, high levels of absenteeism disrupt the flow of learning, often requiring teachers to spend additional time reteaching missed concepts. This creates a tipping point where even students with consistent attendance may be impacted, as the pace of instruction slows to accommodate those who have fallen behind.

This section explores the strong negative correlation between chronic absenteeism and math achievement. Looking at both correlation and regression, we examine how absenteeism influences end-of-course math assessment pass rates, highlighting its role as an important factor driving disparities in student outcomes. By understanding the relationship between absenteeism and performance, this analysis sheds light on actionable opportunities to improve math proficiency through targeted attendance interventions and systemic support for the most vulnerable districts.

It is important to note there is a not a standardized attendance policy across all Florida school districts and therefore definitions of what counts as an "absence" to determine if a student is chronically absent may differ across counties. A standard definition for absences and chronic absenteeism across all districts would allow for more accurate assessments of a pervasive issue that is associated with academic success.

"Missing too much school has dire implications for individual students and Florida's broader educational and workforce goals. **This report highlights the worsening impact chronic absence can have on students' consistent math instruction, and we cannot afford to ignore the data."**

–Paul J. Luna, President and CEO, Helios Education Foundation

Chronic Absenteeism in Florida

Chronic absenteeism has worsened over time, particularly during and after the 2020 pandemic, posing a continued threat to academic achievement. The data in **Table 2** below underscores the importance of addressing attendance barriers through targeted strategies, especially in districts that experienced the highest spikes in absenteeism during the pandemic years. Efforts to reduce absenteeism should focus on both short-term solutions, such as attendance tracking and family outreach, and long-term strategies, including transportation support, community partnerships, and socio-emotional resources to re-engage students.

TABLE 2 – PERCENTAGE OF STUDENTS CHRONICALLY ABSENT FROM THE ACADEMIC YEAR 2016-17 TO 2022-23.

Timeframe Absent	Percentage Chronically Absent
2016-2017	20%
2017-2018	22%
2018-2019	21%
2019-2020	17%
2020-2021	27%
2021-2022	35%
2022-2023	33%

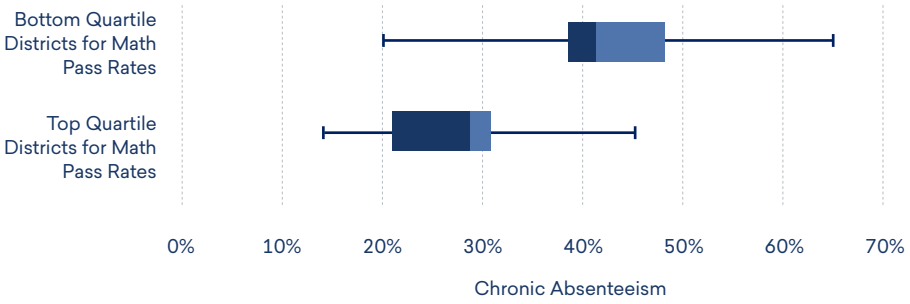
Chronic Absenteeism and Math Proficiency

Patterns associated with chronic absenteeism and math proficiency are a prevalent issue, with 10 districts out of the 17 lowest performing in math proficiency exceeding 40% of their student population being chronically absent (**Figure 6**). Alternatively, chronic absenteeism is much lower in the top quartile districts from 14.8% in Sarasota County to 43.9% in Liberty County with a median of 28.7% (**Figure 6**).

"Math success is an increasingly essential element of career success *when the jobs of the future require advanced mathematics knowledge.* **Attendance is the foundation of learning** *and addressing chronic absenteeism is a shared responsibility that can lead to better academic and economic outcomes for all."*

– Paul Sohl, CEO, Florida High Tech Corridor

FIGURE 6: CHRONIC ABSENTEEISM DISTRIBUTION, IN PERCENTAGE OF STUDENTS CHRONICALLY ABSENT, FOR DISTRICTS IN THE BOTTOM AND TOP QUARTILES OF MATH PROFICIENCY.



Source: 2022-23 math pass rates and 2022-23 chronic absenteeism data, based on most recently available chronic absenteeism data.

In fact, when analyzing the end-of-course math assessment pass rates and chronic absenteeism rates across more than 3,600 Florida schools (school-level data) there is a "moderate to fairly-strong" negative correlation.[4] In other words, on average, as the rates of chronic absenteeism increase, the end-of-course math exam pass rates decrease.

Regression Analysis of Absenteeism and Math Proficiency

A regression analysis[5] was conducted to evaluate the relationship between chronic absenteeism and math proficiency rates, while accounting for other variables. This statistical technique allowed us to evaluate the relationship between chronic absenteeism (the predictor) and the end-of-course math assessment (the outcome) while accounting for variables such as students' gender, race/ethnicity, rural versus non-rural classification, and the percent of economically disadvantaged students in a school.

The regression analysis revealed a negative association between chronic absenteeism and math proficiency rates, even when accounting for other school-level differences. Specifically, a 10 percentage point increase in chronically absent students is associated with a 6.8 percentage point decrease in end-of-course math exam pass rates, on average. This relationship was observed using school-level data from over 3,600 Florida schools. These findings underscore the role of consistent classroom instruction in supporting math achievement. High absenteeism disrupts students' access to essential lessons, negatively impacting their ability to build foundational skills and perform on end-of-year math exams.

"A ***10 percentage point increase*** *in chronically absent students is associated with a* ***6.8 percentage point decrease*** *in end-of-course math exam pass rates."*

4 Results of a Pearson's R correlation analysis

5 An Ordinary Least Squares (OLS) regression analysis. OLS is a widely used statistical method that identifies the best-fitting line through data points to determine the relationship between independent (predictor) variables and a dependent (outcome) variable.

Preliminary evidence suggests that the relationship between rural districts and math pass rates is closely tied to chronic absenteeism. Chronic absenteeism rates in rural schools average 35%, compared to 31% in non-rural schools. Further, a specific finding in the regression analyses provides evidence that chronic absenteeism is a key driver of lower math proficiency rates observed in rural schools, partially explaining the disparities between rural and non-rural districts. When chronic absenteeism is excluded from the regression analysis, the rural district variable is statistically significant, indicating a notable negative effect on math proficiency. However, when chronic absenteeism is included in the regression, the rural district variable loses its statistical significance. This finding suggests that chronic absenteeism is a key driver of lower math proficiency rates observed in rural schools, partially explaining the disparities between rural and non-rural districts.

Chronic absenteeism is a ***key driver of lower math proficiency*** *rates observed in rural schools.*

Implications of Findings

The regression analysis demonstrates that chronic absenteeism is a significant predictor of math proficiency. Moreover, the interplay between absenteeism and rural districts highlights the importance of addressing attendance issues in rural districts to close the math proficiency gap.

Understanding the factors that influence math achievement is vital for identifying effective solutions. These findings emphasize the need for targeted interventions to reduce chronic absenteeism, particularly in rural and underserved districts, to improve math outcomes across Florida. Addressing attendance barriers is not just an educational imperative—it is a necessary step in ensuring learning opportunities for all students. Further, the business community benefits from a talented, capable workforce. But beyond that, students who have issues with absenteeism in school may also have issues with “showing up for work”.

Best Practices for Reducing Chronic Absenteeism

Students who miss school miss learning the math skills they need to progress through school, compounding their issues and disadvantage year after year. A variety of factors contribute to chronic absenteeism, including health issues and transportation challenges, while other students may lack a perceived value in education.

While Florida has not explicitly adopted chronic absenteeism as a formal accountability measure under the Every Student Succeeds Act (ESSA), attendance remains an important metric in Florida's early warning system for students in kindergarten through 8th grade. Lessons from other states and localized strategies within Florida provide valuable insights into effective interventions for reducing absenteeism and enhancing student success.

Rhode Island offers a compelling example of combining real-time attendance tracking with nudge-based interventions to reduce chronic absenteeism. Principals in the state can access student-specific attendance data and will send reminders to parents or caregivers directly through text messages or printed letters sent home with students. This approach resulted in a 4.2 percentage point decrease in absenteeism between the 2022-23 and 2023-24 school years. Similarly, nudge-based strategies have proven effective in other areas. In Philadelphia and Pittsburgh, absenteeism rates dropped by 6 percentage points and 13 percentage points, respectively, while schools in West Virginia experienced a 16 percentage point increase in class attendance following similar interventions.

Connecticut's Learner Engagement and Attendance Program (LEAP) further illustrates the potential of non-punitive family-focused approaches. Through home visits designed to address barriers to attendance, LEAP improved student attendance by 15 percentage points in its first year and 10 percentage points in its second, measured six months after the first visit. These results highlight the effectiveness of engaging families directly to combat absenteeism.

In Florida, Volusia County launched a new initiative in fall 2024 to tackle chronic absenteeism. Their strategy includes creating a sense of responsibility among students through "attendance contracts" and awareness among parents with proactive communication and automated attendance warning letters. These types of interactions support their efforts to strengthen school-family partnerships to address students' problems. District staff are also using real-time attendance data and notification systems to monitor students daily, and generating monthly progress reports to identify trends. Importantly, these communication and data-driven efforts are accompanied by early interventions and support systems for students. Volusia County has already experienced a five-percentage point decrease in chronic absenteeism halfway through their first year of implementation.

These examples point to the importance of building awareness about chronic absenteeism, leveraging real-time data tracking systems, and adopting family-centered interventions. By implementing evidence-based and innovative strategies, Florida can make significant progress in reducing absenteeism, particularly in underserved and rural districts in achieving their academic potential and improving statewide math assessment pass rates.

"One third of our population in Bay County is absent on any given school day. It's no longer viewed as being important. *And then that's translating to the workforce as I hire younger people to my staff, oftentimes in support roles, but sometimes in teacher roles where they didn't find it important to come to school. Can you imagine their track record when they become employees?* **We're not setting them up for success."**

– Blythe Carpenter, Ed. S, Principal of Bay High School

Future Research and the Importance of Data Accessibility

This report leveraged publicly available school-level data from FDOE to conduct a regression analysis and assess math performance across Florida's schools. While the data available provided valuable insights, building the dataset required integrating data from multiple sources across the FDOE website. Although this approach successfully allowed for the analyses, having a centralized, comprehensive dataset available could further enhance the expediency and depth of future research analyses.

Ideally, future research would benefit from access to an anonymized dataset that tracks individual students over time, capturing their academic progress, demographic details, attendance records, and participation in interventions. Such a dataset would allow for a deeper understanding of how specific factors influence math proficiency at both the school and individual levels. It would also enable researchers to analyze the long-term impact of policies and interventions, identify persistent barriers, and tailor recommendations to address the unique needs of Florida's students.

School-level data used in this report is valuable for uncovering patterns and disparities that might not be visible in district-level summaries, such as differences in performance among schools within the same district. However, individual-level data provides an even greater level of granularity, allowing for the design of personalized support strategies and interventions that can make a tangible difference for students. For example, understanding how chronic absenteeism impacts individual students' math trajectories could lead to more targeted attendance interventions that address root causes.

While the FDOE maintains robust data systems and assigns unique identifiers to every Florida student (to anonymize the data), external access to such data for research purposes is limited. This is understandable, given the need to safeguard student privacy and ensure data is used responsibly, and the labor-intensive efforts associated with creating unique datasets for external researchers. However, improved data governance, including streamlined processes for researchers to access anonymized datasets, and additional personnel to manage dataset building for such requests, could significantly enhance Florida's ability to assess and improve educational outcomes that will, in turn, improve workforce outcomes over time. Rigorous, statistical analyses and research are necessary to better identify what educational factors have the strongest influence on Floridians' ability to seamlessly enter the workforce and contribute to our growing economy. By fostering collaboration with external researchers, the FDOE could further encourage innovative analyses and generate actionable insights without

"Ensuring every student has ***consistent access to education is paramount*** *to their success and the future of Florida's workforce. Volusia County's targeted efforts to address chronic absenteeism are making a real difference, providing students with the support they need to stay engaged in the classroom and on track for success."*

– Rep. Chase Tramont, District 30

compromising data security or privacy. Successful partnership would also invite external researchers to design research studies that can lead to actionable interventions and effectively communicate their findings with FDOE leadership.

Enhanced data accessibility would not only benefit researchers but also policymakers, educators, and community leaders, providing them with the tools to develop more precise and impactful educational strategies. For example, anonymized data tracked over time could help identify the long-term effects of early interventions or the specific factors that contribute to success in math education. By supporting a more detailed and nuanced understanding of educational challenges, such efforts would help ensure that all Florida students have the resources and opportunities needed to excel in math and beyond.

Ultimately, creating a culture of collaboration around data, while maintaining a commitment to privacy and responsible use, will empower stakeholders to make informed decisions that improve educational outcomes across Florida. This approach aligns with Florida's goals of fostering academic excellence, ensuring that all students are equipped for future success.

Thought leaders and businesses that want to share their expertise to shape future research on this topic and all research areas of the Chamber Foundation should contact Dr. Keith Richard at krichard@flchamber.com to learn more about joining the Community Development Partnership Council or visit https://www.flchamber.com/cdp.

Organizations and leaders with interest in helping identify solutions and advocating for Florida's youngest learners are encouraged to visit https://www.flchamber.com/earlylearningfl/ to learn more about the Chamber Foundation's Business Alliance for Early Learning Advisory Board. Organizations and leaders that are interested in supporting the education to workforce talent pipeline among Florida's secondary and postsecondary students can find more information at https://www.flchamber.com/futureofworkflorida to learn about joining the Chamber Foundation's Future of Work Advisory Board.

Conclusion

MATH PROFICIENCY IS A CORNERSTONE of individual opportunity and statewide economic growth. The findings in this report highlight the challenges Florida faces in improving math outcomes, particularly for students on or below grade level and those in underserved rural and economically disadvantaged areas. The data reveals actionable opportunities for stakeholders—business leaders, educators and policymakers—to collaborate and implement targeted solutions. By addressing barriers such as chronic absenteeism and access to high quality early learning, creating exposure for students to the world of work, and investing in high-quality data systems, we can create a more robust and effective talent pipeline. Together, we can ensure that every Florida student has the tools they need to excel academically and enter a workforce that is driven by critical thinking and problem solving. By acting now, we can build a brighter future for Florida by investing in students today.

Thought leaders and businesses that want to share their expertise to shape future research on this topic and all research areas of the Chamber Foundation should contact Dr. Keith Richard at krichard@flchamber.com to learn more about joining the Community Development Partnership Council or visit https://www.flchamber.com/cdp.

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Appendix

Appendix A. How Math Proficiency is Measured in Florida's Middle and High Schools

Florida students' math proficiency has been historically measured through the Florida Standards Assessments (FSA), which included courses in General Math, Algebra 1, and Geometry. With the transition to the Benchmarks for Excellent Student Thinking (B.E.S.T.) standards in 2022-23, the scoring and reporting systems have shifted, complicating direct year-to-year comparisons and therefore this report does not emphasize a comparison of historical trends. Further, B.E.S.T. end-of-course exams are specific to Florida's mathematics standards and therefore we do not make comparisons to other states in this report.

To measure the percentage of students that are math proficient, FDOE provides the number of students taking an assessment each year across achievement levels ranging from one to five. A passing score is scoring three and above. The passing rate data for these assessments cover grades 3 through 12, including General Math for grades 3 through 8, as well as Algebra 1 and Geometry exams for students who completed these courses between grades 6 and 12. Students must pass specific math assessments to progress academically, with Algebra 1 and Geometry being graduation requirements and considered "on grade-level" coursework for 9th and 10th graders, respectively. There are no B.E.S.T. end-of-course exams for students who progress past Geometry (e.g., Algebra 2 and Pre-Calculus).

As outlined by the FDOE, high school students must complete four math courses, with Algebra and Geometry being mandatory components of the curriculum. Advanced options encompass Algebra 2, Pre-Calculus, Calculus A and B, Statistics, and additional courses that may be provided by individual schools or districts.

Appendix B. The Role of Advanced Middle School Students in Overall Pass Rates

The high pass rates among advanced students in middle school help explain the disparities seen in high school. Advanced middle school students—those

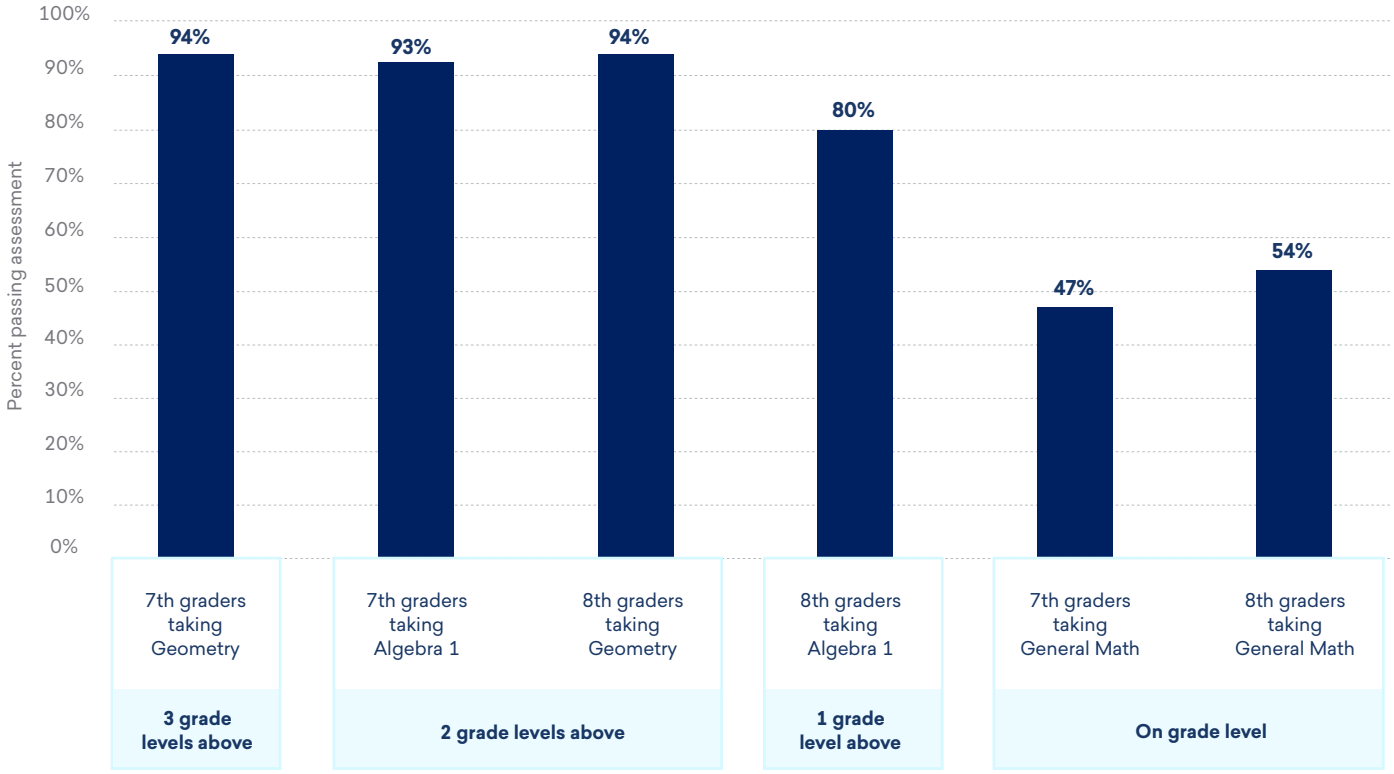
enrolled in courses above their expected grade level—are a key factor in driving the overall pass rate patterns. **Table A1** provides an overview of the course enrollment sequences of "advanced middle school students." These advanced students, by completing above grade level courses earlier, leave the high school testing pool, which consists largely of students on or below grade level. This dynamic contributes to the significant decline in pass rates observed in grades 10, 11, and 12.

TABLE A1 – MIDDLE SCHOOL STUDENTS CATEGORIZED AS ONE, TWO OR THREE LEVELS ABOVE GRADE LEVEL, BASED ON THEIR SCHOOL YEAR AND MATHEMATICS COURSE.

A Student in this Grade...	Taking this Course...	Is Considered...
7th grade	Geometry	Three levels above grade level
7th grade	Algebra 1	Two levels above grade level
8th grade	Geometry	Two levels above grade level
8th grade	Algebra 1	One level above grade level

Figure A1 shows that these advanced students consistently outperform their peers, with end-of-course math exam pass rates far exceeding those of students taking General Math at grade level (47% for 7th graders, 54% for 8th graders). As these advanced learners progress through Algebra 1 and Geometry by 10th grade and are therefore no longer tested for "math proficiency" in the FDOE B.E.S.T. data, the high school pass rates drop sharply, further widening the gap between middle school and high school performance measured.

FIGURE A1: THE PERCENTAGE OF FLORIDA 7TH AND 8TH GRADERS PASSING END-OF-COURSE MATH ASSESSMENTS, GROUPED BY ABOVE OR ON GRADE LEVEL, AT FOUR LEVELS.



Source: 2024 K-12 Student Assessment Results, Florida Department of Education.

“Florida’s future workforce is sitting in our classrooms today. Ensuring students master math and problem-solving skills is vital to closing the talent gap and securing Florida’s economic future.”

Mark Wilson

President, Florida Chamber of Commerce & Foundation

FLORIDA CHAMBER FOUNDATION
136 S Bronough St | Tallahassee, FL | 32301
www.flfoundation.org | 850-521-1200

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