



EXECUTIVE SUMMARY

YEAR 4

Prepared for the Texas Education Agency

ST Math Impact Study

The report examined STAAR Math performance growth from spring 2023 to spring 2024 in grades 3, 4, and 5 for students using ST Math compared to matched non-users.

66

ST Math has made a difference for ALL students, from those who struggle to high achievers across every subgroup. It builds confidence and transforms math from a subject of anxiety to one of curiosity and excitement, enhancing problem-solving skills and nurturing a growth mindset.

- Laura Adams, Elementary Math Curriculum Coordinator, Cypress-Fairbanks ISD l often hear students say, "Hey, l learned that in ST Math." - Jack Funkhouser, Principal, Northside ISD

Students love the program and consider it a treat to work on the puzzles. I love that the design is working on students problem solving and mathematical understanding. - Kym Faircloth, Math Coordinator, Southside ISD

99

INTRODUCTION

Since 2020, TEA has provided students with free access to ST Math through the Texas Home Learning 3.0 (THL 3.0) initiative. This forward-thinking initiative leveraged ST Math's unique, patented visual learning approach designed to harness every child's innate reasoning abilities and deepen conceptual understanding. TEA's commitment to this innovative solution underscores its dedication to fostering a love of math and building students' confidence in their ability to succeed.

Over the past four years, TEA's dedication to equitable learning has empowered students to achieve measurable gains in STAAR performance. With consistent usage, students using ST Math have shown remarkable progress —significantly reducing the number of students in the Did Not Meet category while simultaneously increasing Masters Performance Level compared to non-users.

ST Math provides an accessible yet rigorous learning experience, ensuring equitable opportunities for students across diverse backgrounds—including Special Education, Economically Disadvantaged, ESL, Hispanic, Gifted and Talented, and all racial/ethnic groups. By reducing cognitive load and leveraging students' natural visual reasoning abilities, ST Math effectively addresses common challenges in math instruction. Its interactive, mastery-based puzzles foster deep conceptual understanding while gradually increasing complexity to build problem-solving skills. Through an innovative visual, game-based approach rooted in neuroscience, ST Math encourages persistence and empowers students to confidently tackle non-routine challenges.

By the 2023-2024 school year, over 2468 Texas schools across 263 districts were impacted through ST Math use:



263 Districts using *



1,356,022 Students rostered



702,537 Students impacted *



308,878 Students at >400 min.



2,468 Schools *



376,176,597 Puzzles collected *



561,874,329 Minutes



9,893,445 STAAR Math Scale Score Points growth earned *



0.37 Average quiz effect size

* 10 or more students at >400 minutes

- * >=1 puzzle
- * >2 students at >1 puzzle

* 100 puzzles relates to 2.63 STAAR Math scale score points

 based on full state dose study and applied to all grade-levels including K-1-2 equivalent

ST MATH BENEFITS

ST Math presents TEKS standards through interactive visual puzzles that introduce new math concepts concretely, and progressively scaffold understanding. This approach removes the need to immediately grasp new vocabulary, abstract symbols, or procedural memorization without context. By presenting math visually, ST Math ensures clarity and accessibility, breaking down language barriers and enabling all students—regardless of proficiency—to engage meaningfully with rigorous content.

The game-based format requires mastery to progress while offering unlimited attempts, allowing students to develop strategies and connect meaningfully to TEKS without direct instruction. With simple concept introductions and increasing complexity—such as progressing from three to four objects—ST Math challenges all students, including high performers and Gifted and Talented learners.

Mistakes are part of the learning process in ST Math. The program's game mechanics provide immediate visual feedback, animating the consequences of student choices and fostering a safe space for exploration and growth. This formative learning experience builds persistence and confidence in students as they work toward success.

AN EQUITABLE APPROACH

TEA's adoption of ST Math has created equitable learning opportunities for all Texas students. Effect size data consistently demonstrates growth across every student group, confirming the program's impact at all performance levels. By removing language barriers, ST Math allows English Learners to engage fully with rigorous math content. Students below grade level gain access to an intuitive starting point that fosters persistence and achievement, while Special Education students benefit from a reduced cognitive load. At the same time, Gifted and Talented students encounter challenges that stretch their problem-solving skills and deepen their understanding, moving students from Meets up to Masters performance level.

2023-2024 STUDY

TEA and MIND share data to evaluate the performance of ST Math each year. The TEA data share includes demographics and STAAR Math performance, which are matched to ST Math use for each study year (21/22, 22/23, 23/24). A rigorous quasi-experimental study compares the STAAR performance growth for the treatment group using ST Math above a very achievable dose level vs. a control group matched in performance and demographics. The differences between the groups reveal ST Math's impact and are evaluated in terms of higher growth in performance level percentages, and are also reported as normalized effect sizes. Note that the control groups were generally flat or decreased in math performance from spring 2023 to spring 2024.

This year's study covered 15,717 students using ST Math at a completion level of 1,500 or more puzzles – about two-thirds or more of their on-grade-level ST Math curriculum. This treatment group was matched to a 15,717 student control group on baseline spring 2023 STAAR Math scale scores and represents the same mix of student demographics, including race/ethnicity.

The ST Math advantage in growth across all student groups was similar to the robust results seen for spring 2023 and spring 2022. Partly due to the aforementioned control groups remaining relatively flat, the spring 2024 effect size magnitudes set new records for lower performing subgroups. The grade 3, 4, 5 longitudinal cohort at the 1,500 puzzle usage level nearly eliminated students in the "Did Not Meet" performance level.



LONGITUDINAL COHORT RESULTS

With 2024 being the 4th year of the program, we continued to follow the next longitudinal cohort of Texas students from grade 3 (spring 2022) to grade 4 (spring 2023) to grade 5 (spring 2024). Students who used ST Math across those three school years (1,500 puzzles per year), exhibited dramatic jumps in performance levels compared to matched controls not using ST Math, with 18.7% of students moving up at least one performance level from spring 2022, and remarkably, the near elimination of students at Did Not Meet, down to only 3.7% while controls remained over 8%.

RESULTS AT ALL PERFORMANCE LEVELS

MIND Education presents its comprehensive analysis of student progress visually to show the growth across all performance levels. Understanding movement—whether from "Did Not Meet" to "Approaches" or from "Meets" to "Masters"—is key to assessing ST Math's equitable benefits for all learners.

The charts below track students' STAAR Math performance from spring 2023 to spring 2024, illustrating their progress across performance levels. Each flow line represents student movement, with thickness indicating the number of students following that trajectory.

Despite an overall decline in STAAR Math scores statewide, ST Math students consistently showed robust gains for the third year running—demonstrating repeated growth as well as stability in performance. The equity of impact revealed continues to highlights ST Math's ability to drive meaningful growth in STAAR performance across diverse student groups.

The pairs of charts provide a side-by-side comparison: the left pair for students who did not use ST Math (control group) and the pair on the right for ST Math users (treatment group), offering clear insights into the program's impact at every performance level.





These alluvials show "thicker" lines moving up for the ST Math user group than for the control group, totaling 6.1 percentage points more students moving from Meets to Masters, 8.2 percentage points more growth into Meets+, and 6.1 percentage points fewer students left behind in the lowest "Did Not Meet" category.

Achieving True Equity: Consistent Math Gains for Every Student, Every Year



ST Math ensures equity by delivering significant gains in STAAR performance at any performance level and for all demographic groups, including traditionally underserved populations.

ST Math accelerates performance gains for lower performing student groups

ST Math Drives Equity: Higher STAAR Scores for Every Student Group Students Using ST Math Outperform Their Peers Across All Demographics



Showing the actual percentages of each group at or above the Meets Performance Level provides additional evidence that the unique ST Math approach is delivering added math learning for each group.

PROVEN STUDENT PERSEVERANCE

Texas students demonstrated remarkable perseverance within the ST Math learning environment, tackling challenging content through mastery-based progression. Each level, consisting of 4 to 8 puzzles, requires a 100% score to pass. With an initial pass rate of 70.6%, the puzzles strike the right balance—challenging but achievable—encouraging students to engage in productive struggle.

By receiving immediate formative feedback and multiple opportunities to refine their approach, students developed deeper conceptual understanding and problem-solving skills. Their dedication is evident, with over 99.4% of levels ultimately passed, showcasing how motivation and effort drive success in mastering rigorous, TEKS-aligned content.

SUMMARY

This year's study reaffirms the impact of ST Math on student achievement, showcasing impactful results on the revised STAAR Math assessment. The program's ability to drive equitable outcomes is reinforced by substantial, higher effect sizes across all subgroups, the result of providing a level playing field for all students—including those performing below grade level. With the addition of a fourth year of data, a comprehensive grade 3/4/5 longitudinal cohort analysis further highlights the effectiveness of ST Math, showing a near elimination of students in the Did Not Meet performance level. Additionally, Texas students continued to demonstrate exceptional motivation and perseverance in mastering the unique visual puzzles within ST Math.

This year's study reaffirms the vital role of ST Math in advancing math achievement across Texas. Through our ongoing partnership with TEA, we continue to see meaningful progress in student outcomes, equity, and perseverance. Together, we are setting a standard for excellence in math education—ensuring that every Texas student has the opportunity to build lasting mathematical confidence and success.

To learn more about ST Math results, visit **stmath.com/impact/results**

