ST Math

K-8 Visual Instructional Program

PROFILES IN SUCCESS

Alexander Bruce School
MASSACHUSETTS

High English learners (EL) Population Demands Unique Solutions

When the low-performing Lawrence Public School District was classified as a turnaround district and taken over by the state of Massachusetts in 2011, Alexander Bruce School was one of the campuses targeted for improvement.

Bruce faced a number of challenges in helping students improve achievement—most notably that a full third of its students were English language learners. It was clear that "traditional paper and pencil instruction methods were not engaging and captivating these students," says Principal Cheryl Merz.

"Our students lacked a strong conceptual understanding of math," Merz continues. Language barriers were preventing many ELs from understanding what they were being taught. "We were looking for a technology-based solution to engage all our students," says Merz. Because of its non-verbal design, she felt that ST Math would work well in her school. "ST Math made the learning accessible to every student, regardless of background."

More ST Math progress equals higher PARCC achievement at Bruce School

Non-Language-Based Math Instruction Lets All Students Access Learning

Bruce first piloted the ST Math visual learning program at the end of the 2013 – 2014 school year in grades 3 and 4. Thieves stole computers from some of our fourth grade classrooms so the pilot was limited to third grade. Despite the scarcity of computer time, though, teachers immediately saw the value of ST Math to their students.

"Finding access points to math for our ELs is sometimes a challenge," says math coach Cynthia Bennett. "Since there's not a lot of verbal communication needed to use ST Math, students get excited because they can actually access the learning!" Bennett says that often a bilingual student will help an English language learner get started with the program.

Teachers at Bruce School appreciated how ST Math was engaging the students, as well as how easy it was to track their progress. Principal Merz adds, " We also like that students can see their own accomplishments at the end of each session, tracking their own progress as they work through the program."

After a promising year using ST Math with its third graders, Bruce expanded the program to the full third and fourth grades in 2014-2015. ST Math is also being used for intervention for grades 5-8. "Students love it because it gives them a new way to do math," says Merz. "Our teachers love it because it supports their efforts and gives them a different way to approach teaching math,"adds Bennett.

Alexander Bruce School

MASSACHUSETTS

School Facts

School Grade Levels: 3-8
School Enrollment: 528
District Type: Large urban
Number of Schools in District: 33

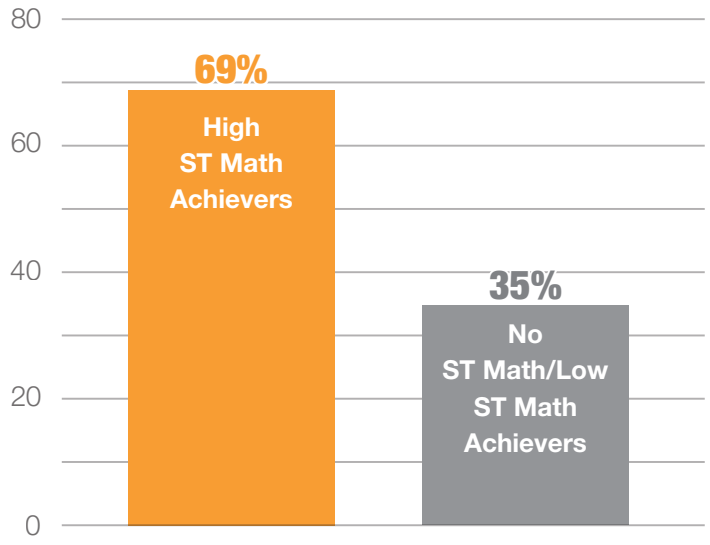
Demographic Breakdown

Hispanic: 91.9%
Caucasian: 4.9%
Asian: 1.9%
African American: 1.3%
FRL: 95%
EL: 33.3%

ST Math Implementation

Grades using ST Math: 3-8
Type of ST Math instruction:
Computer lab, in-class instruction

Percent of Students Reaching Proficient and Advanced on PARCC



From an analysis of grades 3-8 2015-16 PARCC results provided by Lawrence Public Schools. High ST Math achievers progressed through at least 50% of the ST Math curriculum by April 2016.

Increased Math Engagement Results In Higher Achievement

After just a few years using the ST Math program, "teachers are very bought in," says Bennett. And they're seeing the results in student achievement. In 2015-16, 69% of high ST Math achievers (progressing through at least 50% of the program by April) reached the highest levels of math proficiency on the PARCC, as compared to just 35% of students who either did not progress in ST Math or didn't use the program. In fact, schools across the district have seen this difference in PARCC achievement.

"We've seen a real increase in student interest in math," says Bennett. "They're really interested in problem solving and showing perseverance in solving the puzzles." Students are excited to track their progress and want to keep pushing themselves to higher and higher levels. Among her success stories, Bennett points to one student who had trouble focusing in class—largely because he didn't understand the basic concepts being discussed. "He could be a real challenge in the classroom," notes Bennett, but ST Math was able to reach him. And he's not just learning math at school. Bennett says that now he has the highest at-home ST Math usage in his class: "He will be the first to tell you he's really great at math."

"We have seen a higher level of confidence in math since starting with ST Math," says Principal Merz. "We see less of the 'I don't like math' or 'I'm scared of math' mindset."

Parents are on board with the program, as well. As Bennett says, "The parents of our ELs are excited about the technology piece. They're excited for their children to be learning math on the computer—everyone has an understanding that technology is the future."

ST Math

K-8 Visual Instructional Program

PROFILES IN SUCCESS

Albemarle County PS
VIRGINIA

Learning the Value of Productive Struggle

When Albemarle County Public Schools (ACPS) were searching for a technology-based software program to support its math curriculum, their primary goal was to deepen student learning. The district, nationally recognized for embracing innovative education technology, first introduced MIND Research Institute's ST Math in 2010 as a remediation resource for the county's Title 1 schools. Today, ACPS offers ST Math at 10 elementary schools, two middle schools and one alternative school, serving students who span a broad range of abilities and backgrounds.

"One aspect that we really like about ST Math was the non-linguistic approach," says Matt Blundin, ACPS' Lead Instructional Coach for Mathematics.

Since ST Math does not rely on language, Bludin felt the program made sense for this sprawling Virginia school district that encompasses suburbs to farmlands. "We have a rising population of students struggling with the English language and ST Math is a way for any child to be involved with learning math through understanding concepts and problem-solving."

> Students will work harder, much harder, at solving the problems with ST Math than they would with paper and pencil.
>
> - Lisa Molinaro, Principal, Woodbrook Elementary School

Meeting English learners (EL) and Title I Students' Needs Visually

At Woodbrook Elementary School, a Title 1 school with a high EL population, ST Math has been a key component of math block instruction for four years, according to Principal Lisa Molinaro. And she believes ST Math is the reason she's seen an increase in her students' probability, statistics, and geometry skills over the last few years.

In fact, a broader analysis of Virginia Standards of Learning (VSOL) results shows that Albemarle schools using ST Math for three years are outpacing the rest of the state in math achievement.

"The visual representation of mathematical processes forces students to think deeply about numbers and number sense," Molinaro says. "Students will work harder, much harder, at solving the problems with ST Math than they would with paper and pencil."

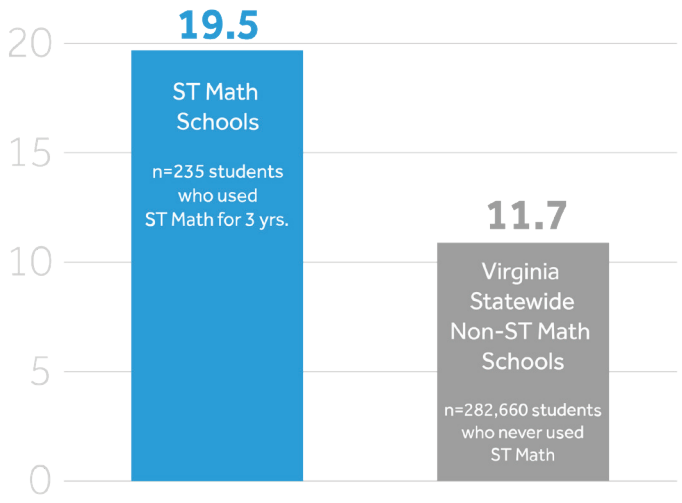
Albemarle Co. PS
VIRGINIA

District Facts
District Grade Levels: PK-12
Enrollment: 13,000
District Type: Large rural
Number of Schools in District: 27

Demographic Breakdown
Caucasian: 66.4%
Hispanic: 11.7%
African American: 11.3%
Other: 10.6%
FRL: 28.8%

ST Math Implementation
Grades using ST Math: K-8
Type of ST Math instruction: Classroom implementation

Growth in Percent of Students Grades 3-5 Passing or Advanced (2012-2015)*



*Virginia Standards of Learning (VSOL) for 2012-2015

High Achievers Benefit From Productive Struggle

The gifted and talented students at Virginia Murray Elementary also find themselves working harder at solving problems in ST Math – sometimes to their own chagrin.

"Because ST Math doesn't give you directions, you have to be comfortable with failing as you struggle to figure things out," says Mark Green, Principal of Virginia Murray, which has been using ST Math for three years. "High achievers sometimes find that challenging."

A case in point, one gifted student, after encountering initial challenges, went so far as to describe JiJi, the animated penguin of the ST Math games, as his nemesis.

Green describes the student as not used to being wrong and having to overcome his fixed mindset and challenge himself to overcome his fear of making a mistake.

ST Math has put a spotlight on the value of productive struggle--the active and persistent method of learning through failure. "We see ST Math as a continuum resource for all students, including struggling learners as well as high achievers who are not used to struggling," says Green. "The program helps us understand them better as learners. Not just in math, but overall."

ST Math

K-8 Visual Instructional Program

PROFILES IN SUCCESS

Brazosport ISD
TEXAS

Seeing Was Believing for This Diverse District

Brazosport ISD wasn't necessarily looking for a new math program when they learned that Phillips 66 wanted to donate ST Math® to their schools.

"We blew it off a couple times because we thought it was just another sales call," explains Sandra Consilio, Brazosport's math curriculum coordinator. But the tide turned in this district on the Gulf Coast of Texas when they visited a nearby campus where they saw students doing math with a little penguin named JiJi. "Ok, the kids love this," she realized.

In fact, 28 districts and more than 94,000 students in Texas learn math with JiJi. Upon further investigation, Consilio and her colleagues began to believe that ST Math's visually based learning program could help their district meet the needs of its diverse students who speak over 20 languages and have a high mobility rate, while also fitting in nicely with the 1:1 device program they ere launching.

> Students see ST Math as a game. It's been a way to make math fun.
>
> - Tara Fulton, Principal, Polk Elementary

Strong Implementation and Incentives Set Stage for Success

In 2014, Brazosport piloted ST Math in five of its most at-risk schools, including Gladys Polk Elementary, which was on "Improvement Required" status from the state. "It helped a lot with our students who are not necessarily reading fluently," says Fulton. "We have third graders reading on a first grade level but they can still do ST Math because it's not based on reading, it's all visual."

Word spread throughout the district and soon the rest of the schools were competing -- literally -- to get ST Math on their campus. "The culture shift in the community was incredible," says Consilio. "When I go to the grocery store I overhear kids talking about JiJi and how much time they were able to play at school. It became a way of life almost."

Today, thanks to Phillips 66, all 10 of Brazosport's elementary schools and two of its middle schools use ST Math. "Part of our success is the value that we put on it in our district offices," says Consilio. That means setting certain "non-negotiables" such as regular usage, and districtwide monthly meetings with principals to review schoolwide ST Math progress and award the school with the most progress.

"It holds us all accountable," agrees Fulton. Many schools in the district, including hers, have created incentives for students to push themselves through the program, ranging from as announcing their names on the loudspeaker to presenting "math team" t-shirts to students who complete their grade level content.

Watch the video about ST Math in Brazosport at **bit.ly/brazosportsuccess.**

Contact us at **888.751.5443** | **info@stmath.com**

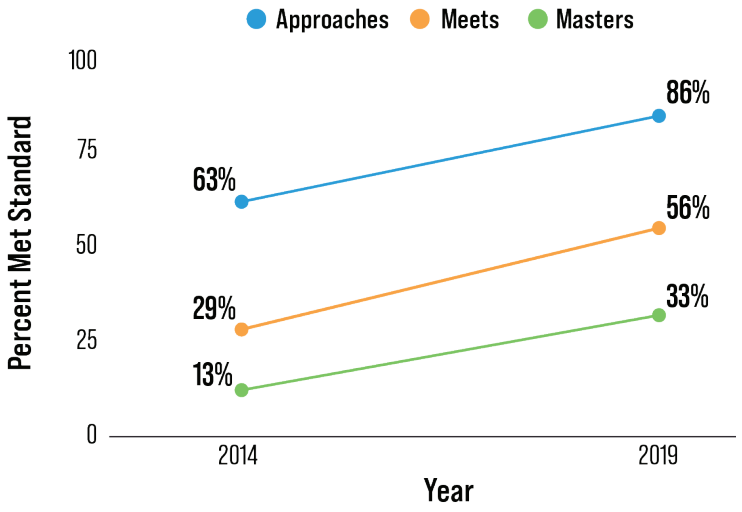
Brazosport ISD
TEXAS

District Facts
District Grade Levels: PK-12
District Enrollment: 12,411
District Type: Small suburban
Number of Schools in District: 21

Demographic Breakdown
Hispanic: 53%
Caucasian: 34%
African American: 8%
Other: 5%
ECO-D: 55.8%
EL: 7%

ST Math Implementation
Grades using ST Math: K-8
Type of ST Math instruction: Rotation

Districtwide Gains in Elementary STAAR Approaches/Meets/Masters



From an analysis of Brazosport's districtwide elementary performance on STAAR.

> I really see growth in our students in their ability to persevere and work their way through problems.
>
> - Christie Burns, Digital Coach

Changing from the Inside Out

Perhaps nowhere is the impact of ST Math more profound than at Polk Elementary. Not only did the campus dramatically swing the pendulum from being "Improvement Required" to a model Professional Learning Community campus, but it also earned the highest third grade math scores in the district on STAAR assessment last year. "I would definitely say that ST Math contributed to that," says Fulton, whose cohort of high-testing third graders used ST Math since first grade.

The program also helps students build persistence and grit in the face of challenges. "Students are more willing to try again and work through it if they don't succeed," says Christie Burns the digital coach at OA Fleming, an early education campus that serves pre-k through first graders. "I really see growth in our students in their ability to persevere and work their way through problems."

That intrinsic motivation to learn and persist through challenges even helped Brazosport students keep up their ST Math syllabus progress this year, despite having a two week "hurrication" from school after Harvey devastated their region.

"Students see ST Math as a game. They like getting JiJi across the screen, they like the little ding sound, and they like seeing their progress," says Fulton. "It's been a way to make math fun."

Watch the video about ST Math in Brazosport at **bit.ly/brazosportsuccess.**
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ST Math

K-8 Visual Instructional Program

PROFILES IN SUCCESS

George Elementary
ARKANSAS

Implementing A Systematic Math Program to Yield Top Results

At George Elementary in Arkansas, educators knew they could do better in math. They believed in their students, but they needed a consistent way to help their diverse student population master math content.

"Some come from places where they don't always get a lot of educational support and opportunities to feel empowered," says second-grade teacher Jessie Walls. "We wanted to provide those opportunities for success."

But they kept facing the same problem: the inconsistencies in students' level of content mastery. "For example, some students still struggled with number sense, I mean basic math facts," says Rachel Sebo, 5th grade teacher, "so moving on to multiplication, division and fractions was very challenging."

Teachers did their best to encourage problem solving and a positive learning atmosphere, but students were frustrated. Some felt defeated.

> Students are able to feel successful ... math time has become student-driven.
>
> - Annette Freeman, Principal, George Elementary

Daily Technology-based Learning and Progress Tracking For Systematic Improvement

Principal Annette Freeman, recognizing the need for a systematic way to move all their students through math content mastery, searched for an instructional technology that would better support her teachers. After hearing about a supplemental math program that brought rapid improvement to a similar school, Principal Freeman decided to pilot the ST Math® game-based learning program.

"I saw a student grow two years of math proficiency in one year!" says Freeman. "ST Math presented math in a way that he could get it."

Seeing its potential, Freeman expanded ST Math to help teachers maximize instructional efforts across the school and provide the kind of educational experiences they knew they could.

Thanks to a Race to the Top grant, every student had a device to use ST Math for 30 minutes a day, every day. In any given class, you could see students engaged in the interactive math challenges and the teacher walking around to facilitate learning. ST Math's visual learning system removed the language barrier and got all their students engaged.

Using the tool's monthly reports, Freeman quickly saw whether one class was making more progress than another: "Then I could go to the teacher who had more progress and ask her to share her methods and help others implement those ideas."

George Elementary
ARKANSAS

School Facts
School Grade Levels: PreK-5
School Enrollment: 640
District Type: Large, public
Number of Schools in District: 31

Demographic Breakdown
Hispanic: 79%
Caucasian: 18%
African American: 2%
Asian: 1%
FRL: 85%
District EL: 32.93%

ST Math Implementation
Grades using ST Math: K-5
Type of ST Math instruction:
Daily, in-class, 1:1 device availability

100%

of George Elementary Teachers Surveyed Agree that ST Math:

- Positively impacts students' depth of math understanding
- Helps students score better on class assessments
- Improves student perseverance when facing challenging problems
- Helps teach content more quickly
- Helps reach their hardest-to-engage students

Higher Scores and Even Higher Confidence Levels

In the 2015-16 school year, George Elementary proudly outperformed the district average as well as the state average in math.

Even though they implemented new assessments and most schools in the district saw scores decrease, George Elementary's scores increased for all subgroups.

For Freeman and her teachers, the results extend far beyond test scores.

"Our students got motivated!" says Freeman. "Now they get mad if they don't get their ST Math." They saw a boost in intrinsic motivation in their students to engage in rigorous problem solving. "These games are hard!"

"Students are able to feel successful. This is something they can do," says Freeman. "Our English learners (EL)s now think, 'I have this. I can do this.'"

Teachers report that students are owning their learning. Using the daily data sheets that show their percentage toward mastery, students set goals for themselves. "They want to know if they did better than the day before," says Freeman. "Math time has become student-driven"

She now hopes the whole district can benefit from the kind of systematic math instruction George Elementary implemented.

ST Math

K-8 Visual Instructional Program

PROFILES IN SUCCESS

Gulfport School District
MISSISSIPPI

Developing Critical Thinking and Problem Solving Skills for All Students

Gulfport School District faces the unique challenge of educating some of the city's wealthiest and poorest areas. In recent years, changing state standards caused the small but diverse district to take a fresh look at how they were serving their students. The new standards stressed critical thinking and problem solving skills that would translate to real-world success. So, educators were on the lookout for new programs that could be implemented across a wide range of schools and student populations.

"Trying to develop conceptual understanding and critical thinking skills with traditional pencil and paper tutoring was not working," says Lea Bellon, Gulfport's Director of Instructional Programs. "Our old practices alone were not getting us there. We were looking for something to fill the void. That's where ST Math came in."

More Than an Intervention Solution

Changing state standards had caused the district to look into various intervention methods for struggling students, but Gulfport Superintendent Glen East wanted something that would inspire deeper learning in all the district's students.

"We wanted to see real-world problem solving in our students, with children being able to sit down and figure things out on their own," says East. "I expected ST Math's focus on conceptual and spatial learning to be effective with students of every ability level."

Gulfport implemented ST Math in their K-6 schools in 2013, with the middle schools joining in a year later. Teachers were initially skeptical, some expressing misgivings about the lack of written directions for students to follow. "Once teachers saw the program in action and saw their students' confidence growing, they completely bought in," says Bellon. "They saw the value and the way that ST Math helped make math relevant for students."

> Math can be hard to teach, but ST Math's spatial learning provides a path for everyone to succeed.
>
> - Glen East, Superintendent

"It also helped inspire perseverance and motivated students to keep trying," says Carol Ladner, Math Curriculum Specialist. "With paper-and-pencil work, students have a tendency to try it once and just come up with an answer. With ST Math, students stay engaged far longer. Plus, when you speak to the students, you can see that they're making connections and relating the concepts to the real world."

Gulfport School District
MISSISSIPPI

District Facts
District Type: medium, public
Number of Schools in District: 11
District Grade Levels: K-12
District Enrollment: 6,300

Demographic Breakdown
African American: 53%
Caucasian: 42%
Hispanic: 4%
Asian: 1%
Multi-Racial: <5%
Pacific Islander: <5%
Diverse Learners (SPED): 11%
FRL: 73%
EL: 0.01%

ST Math Implementation
Grades using ST Math: K-8
Type of ST Math instruction:
Labs and in-class rotation

ST Math students performed
15.5% better
than non-ST Math students in reaching the top levels of math proficiency.

From a three-year study including all elementary schools in the Gulfport District.

Increased Math Perseverance, Progress and Improvement

Since implementing ST Math, Gulfport students have enjoyed consistent progress and improvement across all grade levels. "We're really impressed by how engaged the students are, because the information is in a format they can relate to. We find that students challenge themselves, set their own goals, and push themselves to the next level," says Bellon.

West Elementary School Principal, Joshua Lindsey, appreciates that ST Math allows students to progress at their own pace. For instance, inspired by JiJi (the program's loveable animated penguin) a handful of West Elementary first graders once completed their entire grade-level syllabus before the school year was half way through. The students were so engaged that they continued on to higher grade levels.

Lindsey was surprised by how motivating ST Math could be. His school's success earned them a campus visit from JiJi, who played and took photos with the students. Lindsey expected the younger children to be excited, but even the fourth and fifth graders were excited and super-motivated by the visit.

For many teachers, the most appealing thing is that the program completely eliminates the language barrier, especially when supporting their English language learners. "Any student can jump right in and start learning," says Lindsey. "ST Math helps all students realize that math is the universal language."

ST Math

K-8 Visual Instructional Program

PROFILES IN SUCCESS

Jacks Valley Elementary School
NEVADA

Moving Beyond Math Drills

At Jacks Valley Elementary, a school in Douglas County School District in Nevada, educators were looking for ways to move beyond math drills and fact memorization. They wanted to equip students with tools to effectively and creatively problem solve, especially when faced with non-routine math problems like ones on state tests.

"We knew there were many programs available to our students, but we specifically wanted one that helped with problem solving. Many of the programs we looked at were drill and kill," says Pam Gilmartin, Principal at Jacks Valley, "Problem solving was the area on our state testing that was the weakest and we needed assistance with looking at math a different way."

Second through fifth grade students improved on 100% of objectives in ST Math quizzes

Leading Students to Creative Problem Solving

Gilmartin and her teachers wanted a program that aligned to their math curriculum and provided deep conceptual understanding, not just a rehashing of the same textbook problems on a computer screen. After exploring several options, they found ST Math®, an instructional software program that fit the requirements.

They were drawn to the way ST Math presents foundational concepts visually with no verbal directions. Each puzzle simply asks students to get JiJi (ST Math's penguin mascot) across the screen. "ST Math encourages higher level thinking in my students," says third grade teacher, Mary Kay Dale, "It allows them to work through math problems in different ways."

She uses ST Math to introduce concepts to her class before she covers them in a lesson. "It's just like having another teacher teach them," Dale explains, "The kids are more receptive to new concepts when they've already seen them with JiJi."

Another teacher, Tracie Moultrup, who teaches first and second grade, utilizes data to make sure she catches the exact areas where her students need help, even when they're not visibly struggling: "ST Math's reporting helps me track which students are merely making progress through the program and which students are actually learning." Knowing when to step in has helped Moultrup and her colleagues see marked growth in their students.

Jacks Valley Elementary

NEVADA

District Facts

District Type: Public
Number of Schools in District: 13
School Grade Levels: K-5
School Enrollment: 449

Demographic Breakdown

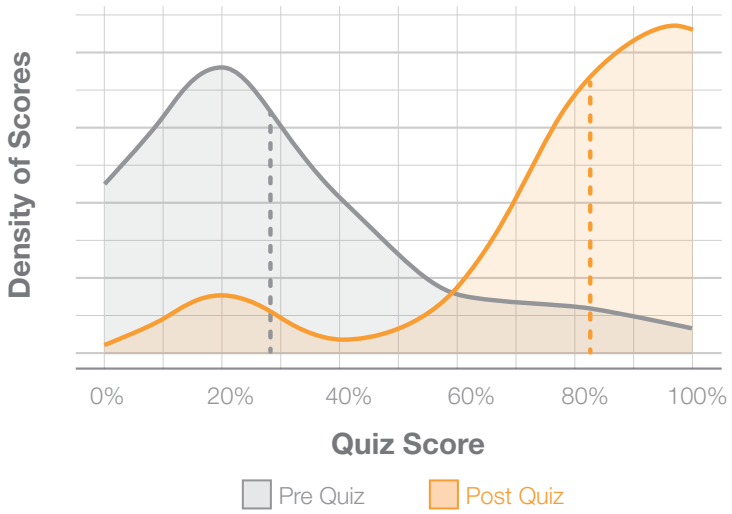
Caucasian: 62%
Hispanic: 30%
Native American: 2%
Asian: 2%
Other: 2%
FRL: 43%
EL: 20%

ST Math Implementation

Grades using ST Math: K-5
Type of ST Math instruction:
Computer Lab, Classroom

5th Grade - Fraction Division

Quiz Score Distribution



Dashed lines indicate quiz score averages

21% Average Gain on Post Quiz across all content areas

Motivating Students to Become Confident Problem Solvers

Educators at Jacks Valley faithfully implement ST Math, and are seeing results. "Teachers ensure students have two ST Math sessions per week, even on weeks with missing days like holidays or parent conferences," says Gilmartin, emphasizing that consistency is helping her students achieve.

Most notably, she mentions that Jacks Valley students are no longer afraid of standardized tests. Students bravely tackle math problems they've never seen before, and even those students who were once labeled as low performers excel in assessments at the end of the year. "Using ST Math is helping our students develop into critical thinkers. They're problem solving on a deeper level and they're excited about it."

Excitement for math is now an everyday occurrence in Jacks Valley classrooms. An ESL teacher, Andrew Fromdahl, has seen intrinsic motivation become a driving factor in his students' achievement: the rush of overcoming a challenging problem drives students to take on the next puzzle with even more enthusiasm. In his classroom, kids monitor their own ST Math progress and check in with each other to see where they're at. Even those who are a step behind work twice as hard to catch up: two of Fromdahl's ESL students come to homework club before school starts to get on "JiJi Math and keep up" with the rest of the class.

ST Math

K-8 Visual Instructional Program

PROFILES IN SUCCESS

Jere Whitson Elementary School
TENNESSEE

Filling in the Math Gaps for English learners (EL)s and Disadvantaged

Jere Whitson Elementary is one of twenty schools at Putnam County School District in Tennessee, but they face some very unique challenges. In addition to serving a largely transient, high poverty population, many of the school's students are also English language learners. To meet the needs of their students, educators at Jere Whitson knew they needed to level the playing field by addressing a variety of knowledge gaps in their classrooms, particularly in math.

"We were researching different ways to close the math gap," said Thomas Fuhrman, Principal at Jere Whitson. "We needed help engaging our students without losing out on rigor."

But finding a rigorous program was only part of the challenge. Assessing the math knowledge of some of their EL students was an even bigger issue. As third grade teacher Kevin Moss explained, he and many of many of his colleagues were working with kids whose main focus was "listening to the English language and trying to pick up different words and phrases, which made it difficult to judge their skill level in math."

Jere Whitson's NWEA MAP Growth scores from Spring 2016 to Spring 2017 show first and third graders in the 81st and 90th percentiles of growth.

Building Deep, Conceptual Understanding Through "Microwavable" Math Lessons

With their students' specific needs in mind, Fuhrman and his team looked at a variety of math supplements and ultimately decided on visual instructional program ST Math®. The program's scaffolding of concrete to abstract concepts, non-verbal approach, and engaging visuals all pointed to a perfect fit.

"It's a simple concept of having a penguin going across the screen," Moss says, referring to JiJi, ST Math's mascot. "But the engagement comes from the students' success in learning the skills. I can assign specific sections as a teacher, and students can track their own achievement." He finds that "the mixture of these two things holds their attention and keeps them engaged" no matter their language or skill level.

Moss also notes the benefits of the digital manipulatives used in ST Math: "Often we use manipulatives to explain how the math is working to our students, but ST Math does that for everything," says Moss. "You can click around on the screen and see what's happening, even for abstract concepts that are harder to teach. That's where ST Math really shines. The students are not just learning the math, they're learning how the math works, which in turn helps with thinking and all other school tasks."

Second grade teacher Beverly Hall values what she calls opportunities for "microwavable lessons" in her classroom. "ST Math is great about slipping concepts into the games gradually. A bit here and a bit there, until the full picture forms," she says. "The gradual vocabulary is great too, because often they don't know what faces or vertices mean, but that gives me an opportunity to make a connection and explain it."

Jere Whitson Elementary

TENNESSEE

School Facts

District Type: Public
Number of Schools in District: 20
School Grade Levels: PK-4
School Enrollment: 334

Demographic Breakdown

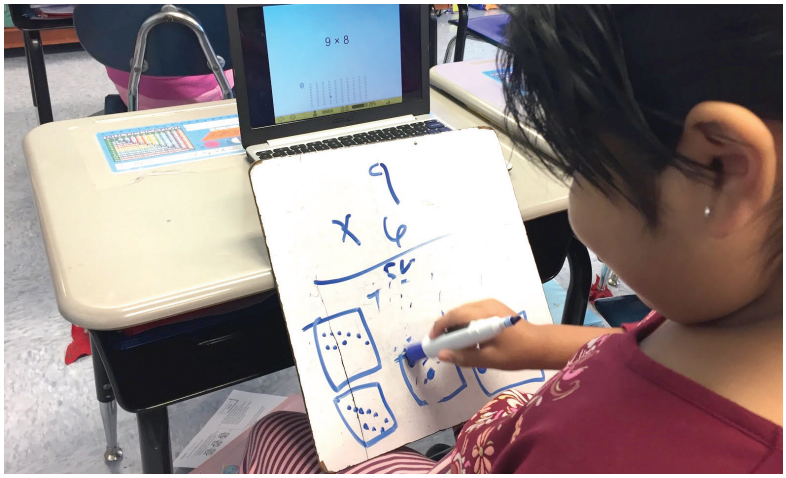
Hispanic: 68.3%
Caucasian: 28.1%
African American: 3%
Asian: 0.6%
FRL: 93.7%
EL: 49.7%

ST Math Implementation

Grades using ST Math: PK-4
Type of ST Math instruction:
In-class, Intervention

NWEA MAP Growth Scores from Spring 2016 to Spring 2017

Grade Level	Observed Growth	Percentile
1	23.1	81
3	14	90



Increased Student Confidence Shines in NWEA Growth Scores

Having implemented ST Math twice a week in their regular classrooms, and daily for intervention students, Jere Whitson's teachers are seeing the confidence shine in their students.

Hall sees the ST Math impact in her classroom when she introduces new concepts. "When I start teaching, some of the children start answering right away and they're not the typical child to answer a question in my class. And I know they're speaking up because they've already had this lesson in ST Math."

Fuhrman has noticed a marked difference in students' perception of math as well. When he visits various classrooms and speaks to students, the fear of math they had is gone. "I've never seen kids so confidently express what they're doing as when they're using ST Math," says Fuhrman. "We've used other computer programs in our school, and often times they'll just look at you when you ask a question. But when it's ST Math, they're the ones creating the story."

Confidence isn't the only thing shining through at Jere Whitson. Fuhrman highlights their NWEA MAP Growth scores from spring 2016 to spring 2017 which show third graders in the 90th percentile for growth, while first graders are not far behind at the 81st. Kindergarteners also showed impressive growth from fall to spring of 2017, falling into the 88th percentile.

Hall has seen student confidence in ST Math carry over to all aspects of the students' education. "One of my students was in his own little shell at the beginning of the year," she says. "But with the accessibility of the program, the animations and colors and the instant gratification of figuring out puzzles really drew him in. Before I knew it, he'd done half of ST Math in a few months and last week I noticed he showed up in the A/B honor roll."

ST Math

K-8 Visual Instructional Program

PROFILES IN SUCCESS

Killeen ISD
TEXAS

Strengthening Math Curriculum to Meet the Diverse Needs of All Students

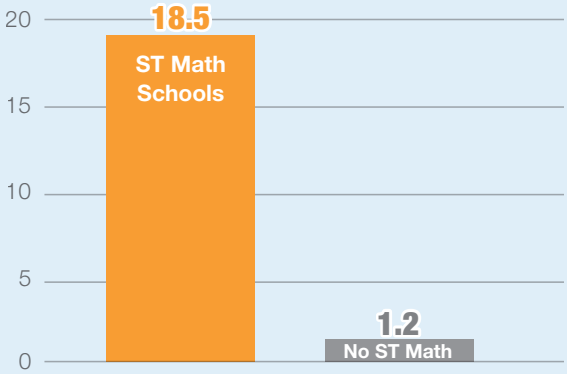
With 47 percent of its population connected to the military, Killeen Independent School District (KISD) in Texas has the unique challenge of educating students with a diversity of primary languages, a wide range of socio-economic levels and a high mobility rate. With all of these factors, KISD looked to strengthen and support their math curriculum to meet the needs of all students, regardless of language level or confidence in math.

KISD first rolled out ST Math®, a visual learning program, in January 2013 at Willow Springs Elementary, intending to use the program to strengthen their Response to Intervention (RTI). But Assistant Superintendent Diana Miller says administrators began to shift their attention to strengthening the district's core curriculum. "What we identified with ST Math is that it is not just a remedial tool, but a support to the core curriculum," says Miller. "It helps students make connections and identify with the concepts in teacher lessons."

> ST Math is not just a remedial tool but a support to the core curriculum. It helps students make connections and identify with the concepts in teacher lessons.
>
> - Diana Miller, Assistant Superintendent, Killeen Independent School District

Texas Shining STAAR

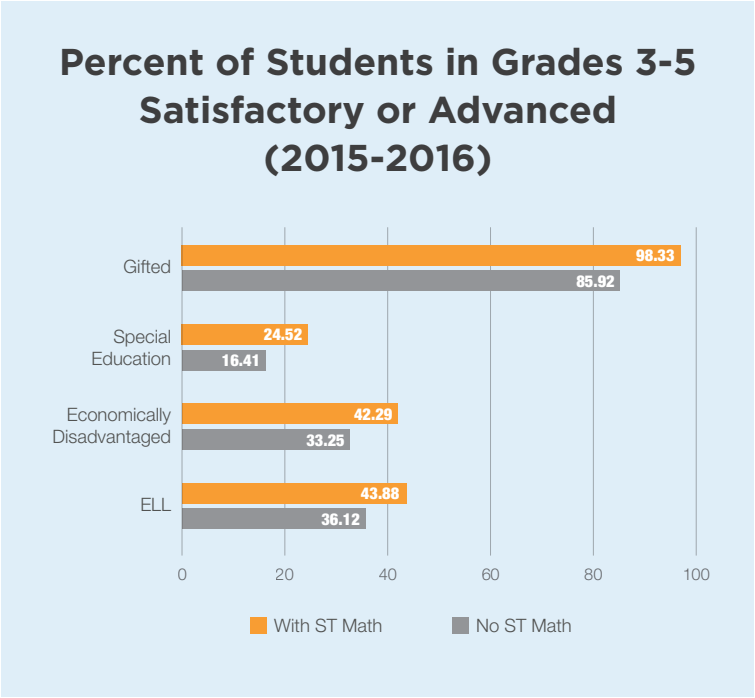
Growth in Percent of Students Grades 3-5*
Satisfactory or Advanced (2014 - 2016)



Demographic Breakdown

School Enrollment: 21,435
African American: 33.4%
Caucasian: 26.1%
Hispanic: 27.9%
Other: 10%
Asian: 2.6%
FRL: 57%
Grades using ST Math: PK-5

** Avg. of 3,463 ST Math students compared to avg. of 3,300 students not using ST Math with similar baseline math performance.*
Note: Updated 9/2017 to include more eligible schools.



ST Math's Visual Approach Helps Students Become Creative Problem Solvers

After seeing triple-digit math gains in comparison to other Texas schools on STAAR (State of Texas Assessments of Academic Readiness) coming out of Willow Springs, KISD rolled out ST Math to all 32 of its elementary schools, with funding support from Toyota USA Foundation and Xerox. Educators across Killeen began seeing the benefits right away.

They found that ST Math provided rigorous math instruction without being intimidating. None of the puzzles involve verbal instructions; students must figure out how to get a penguin, JiJi, across the screen. "It's fun and it challenges their thinking," says Karen Hutchison, Director of Elementary Curriculum and Professional Development. "ST Math engages their minds and instantly provides an opportunity for them to be successful students."

Dr. Jennifer Warren, principal at Oveta Culp Hobby Elementary, values the creative problem solving that ST Math brings to the classroom. "Students are improving with their problem solving because just trying the same strategy over and over again won't work, " she says. "They have to try so many different strategies and ways of approaching the problem to figure out how to get JiJi to move across the screen. It forces them to slow down and think critically."

She also mentions that ST Math's game-based approach makes rigorous math learning appealing to all students: "The fact that ST Math looks more like what they're accustomed to doing in their free time, such as playing a video game, that's an attractive aspect."

STAAR Scores Soar Across All Student Groups

KISD's district-wide implementation of ST Math shows that the test results from Willow Springs were no exception. Educators found that the creative problem solving and increased student engagement they saw in the classrooms translated to a huge jump in STAAR scores. In just two years, Killeen's elementary students scoring Satisfactory or Advanced increased from 49.6% in 2014 to 68.1% in 2016.

The data was similarly impressive when broken down by subgroups. Compared to their counterparts without ST Math, 12.4% more of Killeen's gifted students were in the Satisfactory or Advanced range, and English learners (EL), economically disadvantaged and special education groups saw similar gains.

Along with outstanding test scores, Killeen continues to see engaged students rising to meet new challenges. Patricia Ferrell, a math instructional aide at Oveta, tells the story of one fourth-grader who was among the first to finish his entire grade-level ST Math curriculum for two years straight. "He was eager to see what the next challenge was and to see if he could meet the challenge," she says. He was intrinsically motivated to keep going, even when he encountered challenges he had never seen before.

At Killeen, students are not the only ones taking large strides in their learning. Karen Hutchison, Director of Elementary Curriculum and Professional Development, says that teachers in her professional development sessions are benefiting from ST Math just as much as their students, learning new math concepts they can then reinforce in the classroom. "That's been a powerful side effect of implementing ST Math for our children, because our teachers are developing stronger mathematical skills."

ST Math

K-8 Visual Instructional Program

PROFILES IN SUCCESS

Langston Hughes Academy
LOUISIANA

Addressing Students' Individual Learning Needs

Langston Hughes Academy (LHA) in Louisiana, an elementary school part of the FirstLine Schools network, welcomes a wide variety of students each year. Preparing lesson plans for a mix of students with different ability levels and educational needs is a priority for LHA's teachers. In a subject like math, where one concept builds on another, it becomes difficult to fill in the gaps and differentiate curriculum to address their individual needs.

"Even the kids who struggle, don't all struggle in the same way," explains Emily Hunyadi, Primary School Assistant Principal at LHA. "We needed a way to support every student, regardless of skill level."

Over two-thirds of students meet MAP Growth goals with ST Math

Personalized Math Instruction Meets Students at Their Skill Level

Hunyadi and her team looked for tools that could supplement traditional classroom instruction and keep students of all skill levels engaged and learning at a pace that's right for them.

Besides providing small group instruction and teacher-led intervention, they looked for technology to help fill the remaining gaps. They settled on ST Math®—a visual instructional program. "ST Math is individualized: kids could work at their own pace and it kept them engaged," says Hunyadi, "ST Math was challenging at the beginning, but that's what kept the students interested."

A kindergarten teacher at LHA, Alex Jubb, says the biggest change she's seen since using ST Math is student engagement and an increase in independence. Where at first students found the ST Math puzzles challenging—especially because the program has no verbal instructions, they quickly became hooked on the thrill of figuring concepts out on their own.

She also found the program helpful in reaching all of her students at once: "ST Math was critical because I could give kids content at multiple levels in a way I couldn't do by myself." Working with her co-teacher, Jubb often splits her class into two groups, providing targeted instruction based on the needs of her students.

Paul Hastings, a third grade teacher, has seen enthusiasm for problem solving grow in his classroom. "I encourage students who are stuck on the same problems to work through them together and to not give up when they get frustrated," says Hastings. "It's great seeing their faces light up when they finally get it."

Langston Hughes Academy

LOUISIANA

School Facts

School Grade Levels: PK-8
School Enrollment: 820
District Type: Charter
Number of Schools in District: 5

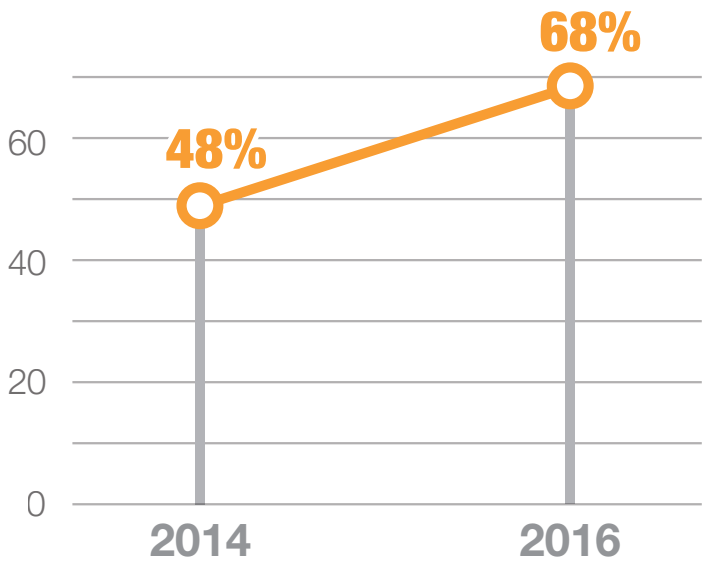
Demographic Breakdown

African American: 98.6%
Hispanic: 1.2%
Caucasian: 0.2%

ST Math Implementation

Grades using ST Math: K-5
Type of ST Math instruction:
Computer lab, in-class instruction

Percent of Students Met MAP* Goals



**NWEA's MAP Growth assessment measures student performance at the start and end of the year by setting personalized goals for each student*

20% Growth in Two Years

Closing the Achievement Gap with Increased Perseverance

Since introducing ST Math to supplement their math curriculum, educators at LHA have seen an increase in perseverance among their students, and not just in math.

"Kids have evened out in their ability to approach new problems and work through them—even if they're not performing on the same level," says Jubb. "Their independence has increased in all subjects."

This new persistence is reflected in LHA's recent test scores. One of the assessments students take is NWEA's MAP Growth assessment which measures their performance at the beginning of the school year and sets individual end of school year goals for each student. In the 2016-2017 school year, 68% of LHA's students met their growth goals—a significant improvement over 48.5% just two years ago.

Alex Jubb, whose classroom was a standout with 93% of her students meeting their MAP Growth goals in 2017, attributes part of her students' success to implementing ST Math with fidelity. "We started on ST Math four weeks into the school year. It was a key part of class since the beginning and has really helped my students get the most from the program."

"One of my students would cry and struggle during ST Math time when we started," says Jubb. "And by the end of the year she would still occasionally get upset, but she exceeded her MAP goals and grew so much in independence. It made me see that even kids who struggle are still learning and improving."

ST Math

K-8 Visual Instructional Program

PROFILES IN SUCCESS

Marlboro Township Public Schools
NEW JERSEY

High-performing district looks for new ways to personalize learning

The Marlboro Township Public Schools are a high-performing suburban district that was facing problems many successful schools have dealt with: how to get their high-achieving students to reach even higher, and how to keep them engaged.

The progressive New Jersey district focuses on personalized learning, says district Superintendent Dr. Eric Hibbs. "We compile lots of data on student performance, which teachers use to differentiate instruction. ST Math fits into that model nicely."

Marlboro schools are modeled on self-directed learning, with students progressing at their own pace and setting their own learning goals. That's exactly why ST Math fit into their program so seamlessly, because even high achieving students inevitably encounter challenges that require them to push themselves.

"It causes a bit of cognitive disequilibrium," says Technology Supervisor Mitchell Shatz. "The kids can't figure it out right away, but the answer is right within their reach." Such an approach helps keep students engaged as they build 'grit' and perseverance.

"The beauty of ST Math is that kids problem-solve. They get to demonstrate that 'productive struggle' and figure things out on their own.

- Dr. Eric Hibbs, Superintendent, Marlboro

ST Math enables data-driven, student-specific instruction

The Marlboro District began using ST Math in its elementary schools in 2008, implementing a rotation model. After seeing the program's success, the district expanded ST Math to its middle schools and early learning center. Today, every school in the district uses ST Math.

"Taking teaching to the next level is really all about individualizing learning for students," says Michael Ballone, Director of Curriculum and Instruction. "One way that we do that here in Marlboro Township is the purposeful use of our digital tools. And ST Math is an important digital tool that fills a gap that other tools do not."

Teachers were also impressed with the way ST Math helped make abstract concepts more concrete for their students. Shatz, a former teacher, used to cut out strips of paper when teaching the metric system because the manipulatives helped the kids grasp the concept.

A few years later, he saw the same idea in the ST Math Petals game. "ST Math redefined how I could have spatial-temporal manipulatives for my students. It completely changes how you can present things to your students," Shatz says. "As an instructional tool, ST Math is incredibly powerful."

The program's robust data tools also enabled Marlboro teachers to see exactly which areas students needed extra help with. "Data is the anchor that drives our instruction," explains Ballone. "ST Math lets students make decisions and set their own goals. Teachers can then look at the data and provide students with the tools they need to progress further."

Watch the video about ST Math in Marlboro at **bit.ly/marlboroprofile.**

Contact us at **888.751.5443** | **info@stmath.com**

Marlboro Township Public Schools

NEW JERSEY

District Facts

School Grade Levels: PreK-8
School Enrollment: 5,192
District Type: Large suburban
Number of Schools in District: 8

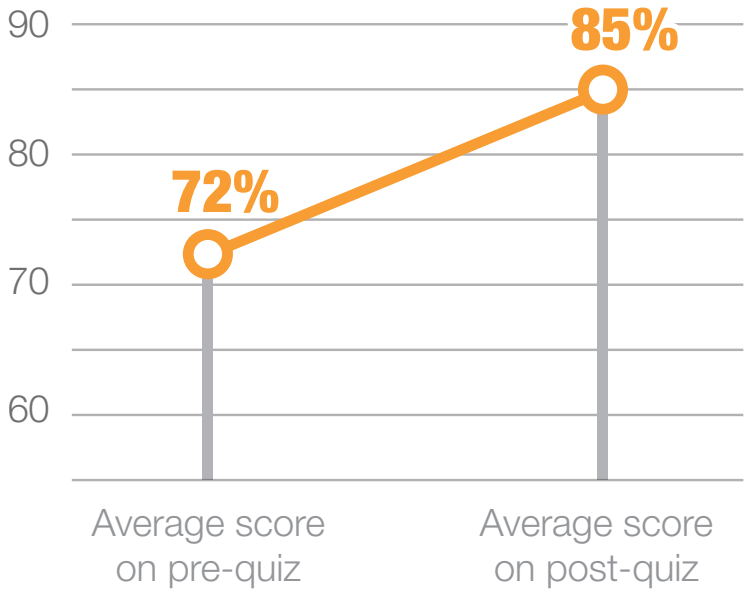
Demographic Breakdown

Caucasian: 70%
Other (Asian): 23%
Hispanic: 5%
African American: 1%
FRL: 4.4%

ST Math Implementation

Grades using ST Math: K-8
Type of ST Math instruction: rotation

Marlboro's Post-Quiz Gains on ST Math Learning Objectives



From an analysis of Marlboro's ST Math students, grades 2-5 and 6-7, over all learning objectives.

+13 Percentage Points
Average post-quiz score gain over all Learning Objectives

Students challenge themselves as they learn at their own pace

ST Math has become an integral part of Marlboro's individualized learning scheme. When Dr. Hibbs joined the district, ST Math was already in use. It was "the favorite program of all the math buffs in the district," he says.

Today, math specialists work with teachers in first through fifth grade, collaborating to create different ST Math classrooms based on student needs and weaknesses. Ellen Farnham, the District Data Specialist, says that ST Math "helps students to achieve deeper learning by reflecting on their thought process as they solve the puzzles."

Farnham says that Marlboro teachers are using ST Math to help students understand the abstract concepts that are often hard to connect with. By allowing students to progress at their own pace, the program dovetails neatly with the district's focus on individualized learning.

ST Math is being used by the highest achievers to expand their learning, says Farnham. "The challenge activities are a great resource when students are done with their grade-level content," she says.

Students are engaged with the ST Math games, so much so that getting to play them has become an incentive in some classrooms. One child even wanted to dress up as JiJi the penguin on Halloween, Dr. Hibbs shares. "Everyone should have a program like this!"

Watch the video about ST Math in Marlboro at **bit.ly/marlboroprofile.**
Contact us at **888.751.5443** | **info@stmath.com**

ST Math

K-8 Visual Instructional Program

PROFILES IN SUCCESS

Mineola Public Schools
NEW YORK

Rising to the Challenge of Rigorous State Standards

Educators at Mineola Public Schools in Long Island, NY were looking to differentiate instruction to meet the needs of all their students, especially in light of increasingly challenging state standards in mathematics.

Michael Nagler, Superintendent of Mineola Public Schools, was adamant that more testing was not the right way to help his students prepare: "We were aware that there is an overabundance of test-taking with our students, and we were looking for a fun, personalized way to teach mathematical concepts." He knew that rigorous instruction was the key to helping his students meet state standards.

But rigorous instruction also posed a problem, given the wide variety of student skill levels in each classroom. Margarita Maravel, Principal at Hampton Street School, found differentiating instruction to be one of the biggest challenges her teachers faced.

79% of K-2 students met or exceeded their MAP Growth Goals

Making Rigorous Math Instruction Accessible for All Students

With deliberate practice in mind, Nagler looked for a program he could introduce to Mineola's K-2 students. He wanted to develop a base of deep, conceptual understanding in the younger grades, so that when students sat for standardized exams, they would be set up for success.

Nagler and his team chose ST Math®, a visual learning program, which met their high standards for rigorous instruction and integrated well with the curriculum. "In ST Math, the rigor is there but it's not a drill-and-kill type of program," says Nagler, "It's age appropriate and there's a conceptual base that lays the foundation for all future math curriculum."

Combined with Mineloa's 1:1 device implementation, ST Math provided not only rigor, but accessibility. Students could work and move through the program at their own pace. Having the option to solve math problems without reading or using language was especially helpful in the younger grades.

"ST Math helps kids who can't read," says Sue Caryl Fleischmann, Principal at Meadow Drive School, "When you look through the math modules, there's a lot of tough reading there. But when they're working on ST Math it's like freedom for them." She's also seeing the same benefits with her high-achieving students who can work through challenges without having to wait for the rest of the class. "I think fun is the key here."

Mineola Public Schools
NEW YORK

District Facts
District Grade Levels: K-12
District Enrollment: 2,695
District Type: Public
Number of Schools in District: 5

Demographic Breakdown
African American: 3%
Hispanic: 26%
Caucasian: 58%
Asian: 12%
Other: 1%
FRL: 26%
EL: 11%

ST Math Implementation
Grades using ST Math: K-2
Type of ST Math instruction: Classroom

At Hampton Street School & Meadow Drive School:

92% Kindergarten

86% Grade 1

61% Grade 2

79% Overall

# of Students Met or exceeded MAP Growth Goals

Creative and Rigorous Problem Solving and Increased Student Engagement Lead to Higher Achievement

Mineola educators have seen their students take huge strides with the addition of ST Math to their classrooms. Students are no longer just learning a method to solve a math problem, they're discovering why it works.

When analyzing Hampton Street's NWEA scores, Maravel noticed a huge jump in critical thinking. "We feel the difference is in ST Math," she says, "It automatically makes each child think because there are no directions and they have to figure out how to solve a problem on their own. We attribute increased critical thinking to that."

Hampton Street and Meadow Drive both saw excellent results in their NWEA's MAP Growth Assessment following one year of ST Math implementation. Seventy-nine percent of their K-2 students met or exceeded their growth goals at the end of the year. Narrowed down to just kindergarteners, the numbers are even more impressive at 92%.

Maravel is seeing ST Math impact spill onto other subjects. "When students walk through a problem, they're using the kind of thinking that has to occur in other areas throughout the day. No matter the subject, they're not giving up easily," she says.

She also points out something else that's new to Hampton Street: "Teachers often look at the screen when a student is having trouble with ST Math, but often it's difficult to just jump in, so then they defer to another child. It's not only the teacher teaching, but children are teaching one another. It's so motivating."

ST Math

K-8 Visual Instructional Program

PROFILES IN SUCCESS

Newport Elementary
PENNSYLVANIA

Meeting the Needs of All Math Students

Newport Elementary is a small school of 500 students in Perry County, Pennsylvania. Educators were under pressure to address the wide variety of student learning needs.

At every grade level, students who fell behind, especially in math, would compare themselves to other students. Discouraged, they would fall even further behind, which perpetuated the cycle.

As a whole, Newport School District educators felt they were not yet preparing students to gain the skills they would need to achieve success. They wanted to bring their classrooms into the 21st century, and that meant more than just buying new technological devices.

Center-based Classrooms With a Personalized Learning Tool

Newport School District developed a vision to personalize learning for all students. As part of that vision, Newport Elementary needed a tool to personalize learning for 500 students with a wide variety of achievement levels in math.

The district had just started using ST Math as an intervention tool in the high school. After seeing how each student could progress in the program at their own speed, to accelerate learning or remediate based on individual needs, and seeing the data that was provided for teachers, the district implemented the program throughout the elementary school.

Educator Bo Templeton took the lead in changing the way math was structured in the classroom, and testing out a new model for other teachers. She designed different centers for math in her classroom, some with ST Math on iPads and others with individual or group work she could navigate between.

> Our vision is to provide personalized learning for all students so they can succeed in the 21st century. ST Math is an important component of that vision.
>
> - Dr. Ryan Neuhard, Superintendent, Newport School District

"Bo Templeton really embraced the center-based classroom format," said Mike Smith, Principal of Newport Elementary. "She used the data from ST Math to understand where students were struggling and provide individualized and personalized group instruction."

"The program itself promotes critical thinking rather than just rote memorization. Students are actively engaged; it's fun for them," says Mike Smith.

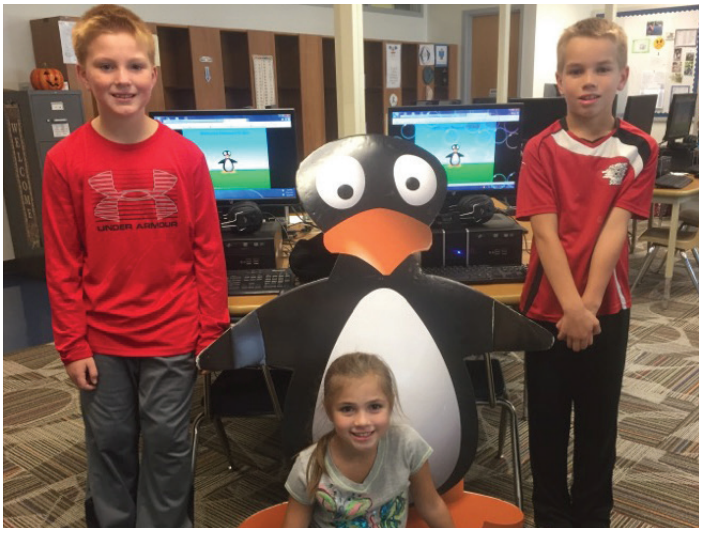
Newport Elementary
PENNSYLVANIA

School Facts
School Grade Levels: PreK-5
School Enrollment: 507
District Type: Small, public
Number of Schools in District: 4

Demographic Breakdown
Caucasian: 92.9%
Hispanic: 2.6%
Native American: 0.8%
African American: 0.4%
Other: 3.4%
FRL: 56%
EL: 33%

ST Math Implementation
Grades using ST Math: K-5
Type of ST Math instruction:
Lab and in-class rotation

83.2%
of Pennsylvania educators
using ST Math agree or strongly agree that the ST Math program helped them reach their hardest-to-engage students last year.



Students See and Track their Personal Growth

Using data from ST Math, educators are able to provide targeted support and ensure that students are being challenged at the optimal level to see growth.

"I noticed a trend in the data from ST Math that when students started the perimeter and area games they were really struggling," says Bo Templeton. "This gave me a good opportunity to talk about these topics in class and also bring up similar problems on the smartboard for this group."

Now, students are quick to share their progress and success, exclaiming the number of puzzles they completed, Bo Templeton says. Everyday, students can see their own progress, based on the number of puzzles they complete as well as larger objectives and overall percentage of mastery. Students are feeling successful in math, which helps them develop the fortitude to face and work through tough challenges.

"ST Math shows students that with persistence and practice they will be better at math," says Bo Templeton. "The visual aspect and the amount of practice in the program helps students build deeper understanding in a rich way that isn't forced."

ST Math

K-8 Visual Instructional Program

PROFILES IN SUCCESS

Pickerington Schools
OHIO

Moving Beyond the Status Quo

Educators at Pickerington Schools in Ohio take pride in striving for new heights. With over 10,000 students and a notable 96.5% graduation rate, this high-achieving district prioritizes student engagement and enthusiasm for learning. Identifying math and particularly junior high math engagement as a critical focus area, they set about looking for new and creative ideas for instruction.

"We wanted to reengage students to increase excitement and motivation," says Brian Seymour, Pickerington's Director of Instructional Technology.

Embracing technology as the best frontier for educational innovation, but not satisfied with the status quo, they set the goal to develop a unique blended learning approach that challenged and motivated both teachers and students.

From Traditional to "Tradigital" Math Classrooms

Seeing that traditional instruction was leaving math students disengaged, especially in junior high, Seymour first saw the need to update their technology and to work toward a 1:1 device plan. They began building a blueprint for a blended learning model that took the best of traditional methods (some direct instruction) and the best of digital learning (data-driven with high student engagement and autonomy) to develop a truly personalized and differentiated instructional system for all students. The so-named "Tradigital Learning Plan" reimagined the classroom structure into modular station rotations rather than the standard teacher-led model.

Through a grant provided by Ohio's Straight A Fund, intended to help schools launch creative ideas for improving education, Pickerington incorporated the ST Math game-based learning program to support their new plan. After seeing promising results in K-6, they sought more grant funding to expand to grades 7-8.

"There's just not enough instructional time in the day to cover every single standard in detail," says Seymour. "With ST Math, we're able to close some of those knowledge gaps."

> ST Math has really helped us move away from the teacher-led classroom to the student-driven.
>
> - Brian Seymour, Director of Instructional Technology, Pickerington District

Beyond seeing intervention results for students at risk, the district's 7th and 8th grade Math Coach Kirk Keller notes his surprise: "What we found is that a lot of our high-achieving kids also did well using ST Math, following an accelerated curriculum. It can be hard to connect kids above grade level with that higher-level syllabus and ST Math helps with this every time."

Keller appreciates the program's non-language-based visual learning design that gives all students access to math understanding through the use of virtual manipulatives. "The gamification in ST Math is very beneficial," says Seymour. "Parents will call us upset that their kids won't go to sleep at night. They're under their blankets at home on ST Math until 10-11pm at night. Kids are excited about math."

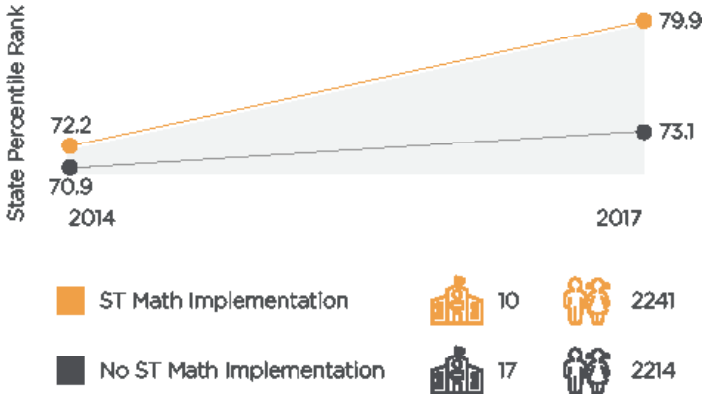
Pickerington Schools
OHIO

District Facts
District Type: Large, public
Number of Schools in District: 15
District Grade Levels: PreK-12
District Enrollment: 10,250

Demographic Breakdown
Caucasian: 70%
African American: 22%
Hispanic: 5%
Asian: 3%
FRL: 24%

ST Math Implementation
Grades using ST Math: PreK-8
Type of ST Math instruction: in-class station rotations, computer lab

Pickerington Schools Outgrew Similar Schools Statewide



Impact on Mindset for Students and Teachers

Pickerington's Tradigital Learning Plan introduced a big shift in classroom instruction, and as with any kind of change, teachers responded with excitement mingled with some nervousness.

"The greatest impact ST Math had on teachers is the impact on their mindset," says Keller. "At first they were afraid of the games and hadn't thought about math that way. They were intimidated."

But eventually, Keller says, it was the students who showed the teachers the way. Students were excited about celebrating their progress on ST Math. "Our students started being able to show math understanding in different ways. Some even journaled about their work on ST Math."

Seeing all of this, teachers became excited about the games and started learning how to talk to students about them.

Now teachers are using games to strengthen their lessons and studying the ST Math data reports that show each student's area of need, and the district plans to continue this momentum into all grades.

"ST Math has really helped us move away from the teacher-led classroom to the student-driven," says Seymour. "The mindset that it's ok for kids to fail or to struggle, and not to try to jump in as the teacher to save the day--this change is happening."

Pickerington classrooms are continuing to transform into innovative hubs of learning. "Now on any given day, you can see the students at 28 different spots in the classroom station rotations. The teacher is now free to be the facilitator and questioner and be accessible to all students."

Watch the video about ST Math in Pickerington at **bit.ly/pickeringtonmath.**
Contact us at **888.751.5443** | **info@stmath.com**

ST Math

K-8 Visual Instructional Program

PROFILES IN SUCCESS

Pomona Unified School District
CALIFORNIA

Making Math Accessible to the Youngest Learners

As a district with a high English Learners (EL) population, Pomona Unified School District in southern California was in search of a way to make math accessible to students of all language needs and backgrounds. With a shift in more rigorous standards, Pomona educators knew they had to reach students as early as possible, starting with their youngest learners.

"Teaching four-year-olds that are just entering the school system is a challenge in itself," says Christine Seitsinger, Child Development Program Administrator at Pomona Unified School District. "Add a language barrier to that, and the goal to help these students grow in the one to two years that we have them becomes even more challenging."

Paving the Way for Problem Solving and Critical Thinking

Along with removing language barriers, Pomona USD also wanted to enable outside the box thinking for younger students to help build a solid foundation in learning. Seitsinger and her colleagues decided on ST Math®, a visual learning program that introduces core math concepts.

They were excited by ST Math's ability to address the unique developmental needs of all of their students, especially those who are struggling. "Students are able to build a foundation without language, so ELs are making the same strides as their peers," explains Seitsinger. "ST Math makes transcendental concepts more unambiguous for pre-kindergartners."

Early learning teachers use ST Math as a way to break down more complex mathematical concepts, like measurement, to their most basic level. "So many learning opportunities are abstract. ST Math is helping to form students' brains in a more concrete way," observes Seitsinger. "They understand and they acknowledge what it is that they're seeing, and then move into more of the abstract experience." By giving early learners concrete building blocks, ST Math fosters deep, conceptual understanding for more advanced, abstract math later on.

> Educators can truly see the effects that ST Math has on children - not just in mathematics, but in problem solving overall.
>
> - Christine Seitsinger, Child Development Program Administrator, Pomona USD

Seitsinger often observes teachers and students applying the concepts taught by ST Math both in and out of the classroom. "Teachers are taking opportunities such as meal and playtime to explore the teacher-directed activities presented by the ST Math program. They can truly see the effects that ST Math has on children - not just in mathematics, but in problem solving overall."

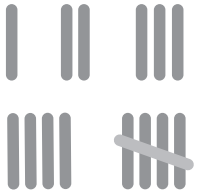
Pomona Unified School District
CALIFORNIA

District Facts
District Grade Levels: PK-12
District Enrollment: 24,673
District Type: Large, Public, Urban
Number of Schools in District: 42

Demographic Breakdown
Hispanic: 86%
African American: 5%
Asian: 5%
Caucasian: 4%
FRL: 83%
EL: 50%

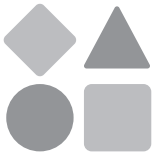
ST Math Implementation
Grades using ST Math: PK-12
Type of ST Math instruction:
Computer lab, in-class instruction

ST Math students showed significant gains in all sub-skills assessed:

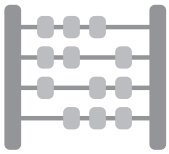


Counting

Comparing and Ordering Numbers



Features of Shapes



Patterns and Pre Algebraic Thinking

Establishing Growth Mindset Early

Implementing ST Math within early learning grades is resulting in tremendous growth for Pomona USD. "By the time that our children get to third grade, data shows that they are making advancements. I do believe wholeheartedly that the ST Math component at age four has made that difference. It's the only factor that's different," reports Seitsinger. A 2015-2016 year-end report on ST Math: Early Learning in Los Angeles county, confirms Seitsinger's observations. The report shows that on average, children at all school sites analyzed made statistically significant gains from pre- to post-test on all measured mathematical tasks.

Educators are also seeing the long-lasting impacts of early and faithful implementation of the program. ST Math is leveling the playing field and creating more capable problem solvers - benefits which last well beyond one school year. "Elementary teachers can tell which students have gone through ST Math because of their confidence and lack of hesitation to take risks," says Seitsinger. "In later grades, they're grasping basic concepts better than those students not using ST Math."

Creative problem solving is the now the new normal in Pomona classrooms. Students come to school excited to tackle new mathematical challenges without hesitation, no matter their language abilities. Seitsinger knows that whatever the next math challenge is, students are ready. "We're tapping into the growth mindset at such a young age. Logic and reason are present and students are really seeing the math. We're not just thinking inside that little, tiny box anymore."

ST Math

K-8 Visual Instructional Program

PROFILES IN SUCCESS

Robeson Elementary School
ILLINOIS

Finding a Personalized Math Solution to Fit a Growth Mindset Culture

Robeson Elementary School, part of Champaign Unit 4 School District in Illinois, opens its doors to an increasingly diverse group of students each year. Educators at Robeson strive to meet each student at their skill level, foster student engagement and emphasize a growth mindset culture. In a subject like math, where educators were finding numerous knowledge gaps in a single classroom, this was no easy feat.

Robeson's educators looked for a math supplement that could help teachers differentiate instruction and engage students of all levels. Luckily, Principal Nick Gaines was already familiar with a solution that could meet the needs of Robeson's diverse learners.

Growing Student Enthusiasm For Math Through Rigorous Instruction

Before Gaines was principal at Robeson Elementary, he worked at Elgin School District and Chicago Public Schools (CPS), both of which used ST Math®, a visual learning program. Gaines first saw the program's impact on individual students as a technology and intervention teacher at Elgin, and then on a larger scale as a principal at CPS. He knew ST Math could make a big difference for students at Robeson.

"I brought ST Math to Robeson because it could bring the same benefits here as in any school," says Gaines, "Differentiated, engaging math instruction for all kids."

Gaines and his teachers especially valued the rigor and productive struggle that ST Math brought to the classroom. "I'm a big believer in growth mindset and that's part of our culture," he explains. "The aspect of ST Math where you put in the effort, try hard, make mistakes, learn from your mistakes--that really resonated with our teachers, families and leadership."

In a Program Evaluation of ST Math at Robeson Elementary:

The most resounding finding was that ST Math produces desirable social emotional outcomes for students in the areas of perseverance, cooperative learning, and growth mindset.

- Nick Gaines, Principal, Robeson Elementary School

Laura Coffman, a 5th grade teacher at Robeson, values the way ST Math makes her students think, regardless of their skill level. "The rigor and conceptual learning in ST Math push students to think about more than just the answer," she explains. "When they're on ST Math it's one of the only times I know they're genuinely thinking for themselves."

Robeson Elementary School

ILLINOIS

School Facts

School Grade Levels: K-6
School Enrollment: 426
District Type: Public
Number of Schools in District: 19

Demographic Breakdown

Caucasian: 46.5%
African American: 29.1%
Hispanic: 6.8%
Asian: 6.1% | **Other:** 11.5%
FRL: 47.2% | **EL:** 4.2%

ST Math Implementation

Grades using ST Math: K-6
Type of ST Math instruction: Classroom

In a study of Robeson's students in grades 1-5,

students with greater ST Math Progress had significantly higher NWEA Math End RIT Scores.

Of students with higher ST Math Progress:

71% scored in the top 20th percentile

ST Math at Robeson Increases Student Perseverance, Cooperative Learning, and Growth Mindset

With ST Math in the mix, Robeson's students are working harder than ever to problem solve, and they're loving it. "There are a few high achieving students who are already on grade 6 content," says Coffman. "They're asking to log into ST Math at home and on weekends. One student's progress has sparked motivation in the rest of the class to work harder."

Coffman also notes that ST Math allows her to challenge students of all skill levels in the same way: "It's a great equalizer in that all students can reach a point where they have to struggle to get the right answer. They are building up stamina and working extra hard to progress through the program."

To formally assess the impact of ST Math, Gaines performed a program evaluation, analyzing NWEA scores, ST Math data and even interviewing teachers. In his report, he states that the "most resounding finding was that ST Math produces desirable social emotional outcomes for students in the areas perseverance, cooperative learning, and growth mindset." The report reflects what he and his teachers had been seeing since the beginning. Gaines also notes that the highest scores and biggest marks of improvement belong to those students who had the most progress in ST Math, leading him to recommend that he and his staff "monitor and actively promote ST Math student progress completion."

While he works with Robeson's teachers on implementing ST Math with fidelity, Gaines shares one more story describing the impact he's seen so far: "Sure, parents see their kids' math scores and grades, but what they talk about is that their kid won't put the iPad down at home because they're playing a math game. They're competing with their friends and they're working on challenge modules for a week straight." Parents and teachers don't have to rely on numbers to see their kids curious, excited and rising to meet even the toughest challenges.

ST Math

K-8 Visual Instructional Program

PROFILES IN SUCCESS

Metropolitan School District of Warren Township
INDIANA

Transforming All Students into Mathematical Problem Solvers

Educators at the large, urban Metropolitan School District of Warren Township in Indiana wanted to overhaul their approach to education in order to better serve their 13,000 students—mostly from low income backgrounds.

They strove to tackle math understanding and problem solving, which were falling short of desired state standards. Educators noticed that many students were disengaged and merely skimming the surface of conceptual understanding. "Students were learning math concepts but not mastering them—recalling them, but not committing them to long-term memory," says Warren Township's Director of Professional Learning, Kate Schwartz. Without fully understanding mathematical concepts, students were having trouble applying class examples and formulas to new and novel math problems—like the ones on state tests.

Spreading a Culture of Innovation for Students and Teachers

Warren Township teachers needed the right tools and technology to help all students engage in mathematical problem solving. The district introduced a blended learning program that mixed traditional classroom instruction with technology, small group instruction and data reports to track individual student needs.

A Race to the Top grant provided 1:1 access to devices for all students, and opened the gates for innovative and personalized education technology, including the ST Math® game-based learning program.

"ST Math allowed all students to access conceptual learning and supported them at their own individual level," says Schwartz. "Students could access the curriculum at their own pace." After piloting ST Math at two schools, Warren Township expanded district wide.

90% of Warren Township teachers surveyed agree that ST Math helps improve student perseverance when facing challenging problems

Because the program allows students to solve math problems by manipulating visual models, it is accessible and engaging to all students, regardless of ability or language proficiency. Mercedes Moore, Instructional Specialist for Sunny Heights Elementary, saw this feature impact the most hard-to-reach students at her school: "ST Math helps our students with language barriers—the English learners (EL)s and kids below grade level in language—because it separates math achievement from the ability to read."

Some teachers had anxiety about integrating a new program, but were quickly won over by their students' enthusiasm. "I had kids come to me begging to play ST Math every day. They'd even choose it over recess," says Amy Abbey, a Kindergarten teacher at Sunny Heights.

Metropolitan School District of Warren Township
INDIANA

District Facts
School Grade Levels: PreK-12
School Enrollment: 12,250
District Type: Large, public, urban
Number of Schools in District: 19

Demographic Breakdown
African American: 52%
Caucasian: 35%
Hispanic: 12%
Asian: 1%
FRL: 72%
Diverse Learners (SPED): 16%

ST Math Implementation
Grades using ST Math: K-6, MSS
Type of ST Math instruction: Classroom

90%

of Warren Township teachers surveyed agree that ST Math:

- Has a positive impact on student attitudes about math and learning
- Has helped them in reaching the hardest-to-engage students this year
- Has improved student perseverance when facing challenging problems
- Positively impacts students' depth of understanding about how math works

Productive Struggle, A Lasting Measure of Success

The initial student excitement for math in response to the innovative changes taking place in classrooms across Warren Township was not simply a fleeting spark of interest; it has proven to be a lasting change in the way their students learn.

Instead of being intimidated by difficult tasks and problems, students and teachers have adopted a growth mindset—challenges and failures are now opportunities. "ST Math has taught our students and teachers that it's okay to have productive struggle," says Moore.

Because students are learning while playing games, they are motivated to problem solve in different ways—no hints needed. On any given day you can see a kindergartener think through one of the digital challenges using blocks at his desk, says Abbey, or a fourth grader drawing on her piece of paper to visualize complex multiplication. "These kids are not fazed by momentary failure; they just keep trying."

At Warren Township teachers also have a growth mindset and continue to adapt their instructional practices. For instance, they have learned to facilitate the struggle that takes place during an ST Math session without rushing to help with the answer. "Sometimes my students get frustrated—those games are hard!" says Abbey, "but I constantly ask them questions: What did you do? How did you do it? What can you do differently? Most of the time they figure it out on their own."

In Amy Abbey's classroom of kindergarteners, one student began the year at very low levels of reading and math. "He's a kid that really had to work hard at it, but when it clicked—it really clicked for him," says Abbey. "He's caught up to the other students and is begging to play ST Math every day."