



Math Solutions Case Study:

THE SCHOOL DISTRICT OF OSCEOLA COUNTY, FL

Outstanding Implementation. Outstanding Results.



The School District of Osceola County, FL

817 Bill Beck Boulevard, Kissimmee, FL 34744

Total Schools: 72

Grades: Pre-K–Grade 12

Total Enrollment: 62,132

Student Demographics:

- ▶ 59.4% Multiracial
- ▶ 57% Hispanic
- ▶ 26.7% White
- ▶ 10.9% African American

“We can already see the shift in some of the schools where we’ve worked the hardest.”

Dr. Michael Akes, Assistant Superintendent of High School Education, the School District of Osceola County

In 2013 Melba Luciano, the Superintendent of Osceola County School District, was looking for ways to increase student achievement in mathematics district-wide. The challenge was great, especially with new state standards adding an extra level of complexity. Armed with the support of the administration and the knowledge of what had not worked in the past, Superintendent Luciano went searching for a better answer. But would she be able to find a long-term, sustainable solution?

“It was evident that the work of Math Solutions was beginning to transform the way that mathematics was being taught in Osceola. We visited many classrooms and shared our excitement with other district leaders!”

Michael Allen, Assistant Superintendent for Middle School Curriculum and Instruction

“Students are actively listening and using discussion prompts to respond to their peers’ thinking. Students are trying to find more than one solution path and challenge their own thinking in certain situations. I have seen a great increase in purposeful turn-and-talk discussions.”

Administrator, the School District of Osceola County

District-wide professional learning empowers teachers to understand new standards—and increases math scores across the board.

In early 2013, the School District of Osceola County was searching for a way to improve math scores. At the elementary level, statewide assessments for third grade math had dipped. According to Superintendent Melba Luciano, “There was a large gap between the state average and our district. When we compared that to our reading and writing results, it was evident that we needed to focus on the area of math.” Similar needs were noted in the results for middle school (especially grade 8) and in the high schools.

With a new leadership team and the rigorous expectations of the Florida State Standards, Osceola district leaders knew they had to be proactive. So, in the final weeks of the 2012–13 school year, Dr. Lissette Brizendine, Assistant Superintendent for Elementary Curriculum and Instruction, organized small focus groups of principals to explore ways to improve math achievement. “The final conclusion from the team was that we needed to find training for math—ongoing, comprehensive professional development—that was not tied to any particular program or book and was district-wide, reaching as many teachers as possible,” she recalled. Middle School Resource Specialist Stacey Politano noted another key factor: “We were going to be transitioning to new state standards, and we knew that we would need to transform math instruction to help our students,” she said.

With multiple challenges at hand, district leaders recognized that there would be no quick fix, but they were committed to the long term. Their goals were clear—improve teachers’ mathematics content knowledge and pedagogy to help change the way students think about math. Dr. Brizendine said Osceola students faced a range of mathematics challenges, from gaps in their conceptual understanding to foundational knowledge of math facts. Therefore, as a first step to increase student achievement, the district established specific, student-centered goals. Osceola district leaders believed they would see positive results if all teachers and leaders were focused on the same objectives:

- ▶ Fostering a safe learning environment that allows students to share their mathematical thinking and reasoning in class—listening to and respecting the thinking of their classmates.
- ▶ Actively engaging students in mathematical discourse to deepen their understanding through communication and enable them to articulate and defend their ideas and analyze the reasoning of others
- ▶ Enhancing students’ higher-level thinking skills over time in alignment with the standards’ call for rigorous, high-level questions

Selecting Math Solutions

To effectively prepare for the new state standards, Osceola district leaders wanted to provide their educators and leadership with the best professional learning opportunities. After conversations with their math team, Osceola was referred to Math Solutions, a professional learning solution founded by Marilyn Burns. Following initial discussions and brainstorming with the Math Solutions team, one of the district’s key decision makers, Susan Petrek, Director of Middle School Curriculum and Instruction, sat in on a Math Solutions professional development course. Seeing was believing. After experiencing the professional development course and hearing rave reviews from participants, district leaders immediately scheduled a meeting with the Math Solutions team.

“The Math Solutions consultants are truly among the most knowledgeable and skilled professionals with whom I have ever been associated. Perhaps most impressive has been their willingness and capability to model best practice in our classrooms - to our students - in front of our teachers and administrators!”

Michael Allen, Assistant Superintendent for Middle School Curriculum and Instruction

“Students feel comfortable discussing what they think versus worrying if it is right or wrong. I tell them that we all think differently and that the way you approach it might be completely different than the way I do it—but it doesn’t make it wrong!”

Teacher, the School District of Osceola County

“At the secondary level, the model lessons are very authentic. It’s a real classroom with real students. The teachers can see how it plays out, and they’re starting to embrace it.”

Stacey Politano, Middle School Resource Specialist

A Beginning, Then a District-wide Expansion

Prioritizing its biggest needs, the district decided to focus initial instruction on grades 2–8, then expand to K–1 and high school. The Year 1 plan centered around three introductory courses for grades 2–8:

- ▶ Making Sense of Mathematics (reasoning and discourse)
- ▶ Mathematical Thinking (representation and procedural fluency)
- ▶ Problem Solving (disposition, competence, and confidence)

The idea was to provide a common baseline of knowledge for teachers and math coaches. During Year 1, the Math Solutions team also worked with small groups of teachers and coaches on lesson planning to reinforce best implementation practices and deepen their understanding. In addition, the team hosted sessions with school principals, assistant principals, and district leaders. The theory was simple: When district leaders understand the approach, there’s more buy-in and support for the whole project—and that support is essential to success.

“...we worked with the district to analyze their data and test scores to choose a specific course of action for each grade.”

Lisa Rogers, Director of Professional Learning, Math Solutions

Midway through Year 1, the shifts were already noticeable. Elementary school principals were seeing a change in the way instruction was being handled, and they were observing things like Talk Moves showing up in other classes. At the middle school level, the transformation happened quickly. Most of the classrooms had been very traditional, with rows and little discussion. Yet once Math Solutions began, things started to change. Stacey Politano said, “Teachers moved the desks around so kids could have the opportunity to talk to each other. It’s a process, but it was a major shift.” Michael Allen, Assistant Superintendent for Middle School Curriculum and Instruction, recalled that “It was evident that the work of Math Solutions was beginning to transform the way that mathematics was being taught in Osceola. We visited many classrooms and shared our

excitement with other district leaders!”

As a result of this positive impact seen very early on in grades 2–8, the assistant superintendent of high schools made a request to add Math Solutions to address an urgent need regarding algebra and geometry. The Math Solutions team went to work, adjusting the plan to add a small component of professional development at one of the district’s high schools, followed by sessions with algebra and geometry teachers from across the district. High school resource teacher Lisa Greco said that Math Solutions high-quality professional learning was “in line with the direction we wanted the high schools to go as we moved toward the new Florida standards.”

“88% of teachers and 80% of administrators agree that they are now better prepared to meet the classroom needs of their students.”

Math Solutions 2013–2014 EOY Report

A Taste of Success—and a Plan to Move Forward

From the start, district administrators recognized that Math Solutions was a much-needed resource to support their teachers. As Year 1 progressed, it came time for the Florida Comprehensive Assessment Test (FCAT), an important marker of student progress—and a key factor in determining funding for the district. To the delight of district leaders, the FCAT results showed gains after just one year of Math Solutions professional development. At the elementary level, Osceola outperformed the state for third, fourth, and fifth grades. Dr. Brizendine put it simply: “Something was happening in math that we had not experienced before. And that was very promising.” Numerous surveys of teachers also showed that Math Solutions was already having an impact on them. All grades reported that at least 93% of teachers agreed or strongly agreed that they could apply what was learned in the Math Solutions courses to improve student achievement.

The district’s FCAT gains and teacher surveys helped build momentum for Year 2, where the focus shifted from building

“86% of teachers and 89% of administrators agree that, as a result of Math Solutions professional learning, they are better prepared to structure learning environments to meet the needs of the students.”

Math Solutions 2013–2014 EOY Report

STAR Gains in Grades 3–5



District-wide Percentage of Grade 3–5 Students at Mathematics Grade Level

53% 2013–14 STAR—
Baseline at Start of
School Year

66% 2013–14 STAR—
October Assessment

13% GROWTH

60% 2013–14 STAR—
Baseline at Start of
School Year

71% 2013–14 STAR—
October Assessment

11% GROWTH

* Students made gains in the short time from the start of each school year until the October assessment.

* In addition, the baseline scores from 2013–14 to 2014–15 show students made gains from year to year.

the district's knowledge base to spreading that capacity, school-by-school and classroom-by-classroom. The Math Solutions team added professional development for grades K and 1, and expanded to all high schools. For new teachers, the goal was to provide them with the same foundational competency that other teachers gained in Year 1.

The district worked with the team at Math Solutions to analyze test scores and choose specific courses based on the greatest need for each grade. The course plan included:

- ▶ Number and Operations for grades K–2
- ▶ Number and Operations–Fractions for grades 3–5
- ▶ Ratio and Proportional Relations for grades 6–8
- ▶ Algebra and Functions and Geometry for high school

Each course was specifically targeted to make the instruction highly relevant for teachers and to support the requirements of the Florida State Standards. Stacey Politano said the work in Year 2 “uses last year as a vehicle, with all the reasoning and discourse. But with that, teachers have to be strong in their own knowledge of the content.” The Math Solutions team is already seeing a difference in Year 2. The team says it is wonderful to hear that the district's math coaches and teachers are sharing their excitement about the instructional shifts they've been asked to make. The coaches are supporting their teacher counterparts to reinforce professional learning in the classroom. Teachers say that after implementing Math Solutions strategies, their classes are livelier and students are more engaged. According to Dr. Brizendine, teachers have a deeper understanding of the math standards and are able to plan richer lessons incorporating Talk Moves and Math Talk. At the high school level, Dr. Michael Akes, Assistant Superintendent of High School, said, “We can already see the shift in some of the schools where we've worked the hardest.”

The district and Math Solutions have started planning their next steps. Teachers and principals are actively making requests about what they would like to focus on in Year 3. With that kind of enthusiasm, it's clear that the future looks bright for the School District of Osceola County.




- Student math scores were consistently lower than the state average across the district, and teachers were facing upcoming changes to the state mathematics standards.
- After a variety of attempts to improve math instruction proved unsuccessful, the district realized that it needed to take a different approach.
- More than 90% of teachers say Math Solutions has helped them improve student achievement, according to the Math Solutions 2013–2014 EOY Report.
- *“We can already see the shift in some of the schools where we've worked the hardest.” –Dr. Michael Akes, Assistant Superintendent of High School Education*

Math Solutions, founded by Marilyn Burns, is dedicated to improving students' learning of mathematics by providing educators with the highest-quality professional development services and resources. We work with school districts across the country to improve math instruction and have published more than ninety books and resources that help lead to effective math instruction in their schools.

CONTACT US TODAY to speak with one of our Executive Directors of Math Partnerships.

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