

Inspiring Engagement, Confidence, and High-Level Math Learning in **All** K–5 Students

WORCESTER COUNTY SCHOOLS | WORCESTER, MARYLAND

Changing Teachers' Attitudes, Propelling Student Growth

Three years ago, Worcester County Schools on the coast of Maryland, realized its small county had to find a better way to meet the needs of all learners including struggling learners. To find a solution, the coordinator of SPED at the time formed a K-5 intervention and implementation team that included principals, parents, and teachers, who sat down together and discussed their vision for math instruction.

"We wanted our students, all students – special ed students, general education students, everybody – to learn math at high levels with conceptual understanding. And we wanted to increase student engagement and discourse," said Kirsten Danisavich, Coordinator of Instruction for Mathematics. "When we completed analyzing and thinking about what our new learning solution should be, we realized that *Stepping Stones* from ORIGO Education was in full alignment with where we wanted to go."

When considering *Stepping Stones* as the solution to tackle their challenges, one aspect was considered critical: easy access to all online content from all grades, giving teachers the confidence and knowledge to successfully accommodate mixed abilities in the classroom. Equally important, the solution they selected should foster a love of mathematics in both students and teachers. In the words of Danisavich, *Stepping Stones* delivered on both goals.

"*Stepping Stones* gave us the tools to teach the main lesson, as well as a wide range of resources for associated lessons that allow teachers to differentiate instruction for enrichment students and for students who need additional support," said Windy Phillips, Coordinator of Instruction for Special Education. "With *Stepping Stones*, teachers were able to push everyone forward in real time."



"The results of the *Stepping Stones* program have been amazing! One first grade teacher who helped pilot the program in her Tier 1 inclusion classroom of special ed and general ed students reported that by the end of the year, all her students were at grade level in math. In fact, in all five first grade classrooms that participated in the pilot, the special ed students actually outgrew their general education counterparts."

KIRSTEN DANISAVICH

Coordinator of Instruction for Mathematics



"I love all the assessments that are provided. It's great to be able to see exactly where kids are on the learning progression and then move them forward. Teachers can see the common misconceptions on each lesson, so they work with their students to avoid the misconceptions."

WINDY PHILLIPS

Coordinator of Instruction for Special Education

As Danisavich explained, the Worcester team quickly witnessed the positive effects of *Stepping Stones* on teachers' attitudes. "That was truly music to a coordinator's heart," she said. "As they used the program, attitudes on math actually changed. Some really didn't love teaching math at the beginning of the school year. By the end of the school year, their enthusiasm for teaching math had skyrocketed. One teacher told us, 'It was the easiest time I've ever had teaching math. I love teaching math now.'"

Transforming learning in every classroom, in every student

Worcester County Public Schools are now in their second year of full implementation, and the results are apparent everywhere – in students' improved test scores and confidence, in teachers' reignited enthusiasm for teaching mathematics, and in a shared excitement for teaching and learning math throughout the district's five elementary schools.

"In professional development settings, our teachers are all speaking the same language now," Danisavich said. "They are all reading the same background information on the mathematical focus in *Stepping Stones*, and they're becoming better mathematicians themselves. They are empowered by the program's structure and probing questions that enable them to efficiently assess what their students know, so they can take them to the next level."

An equally powerful transformation is happening with students. "When we go into the classrooms and see students playing *Stepping Stone* games on their iPads, they're not just working on the computer – they're actually talking to each other," Danisavich said. "They sound like mathematicians because they're using the math content vocabulary."

Continuity across all grade levels

Today, all K-5 students at WCPS get Tier 1 instruction through *Stepping Stones* to ensure that all children learn math at high levels. In addition, teachers can select from a myriad of resources in Tier 2 and Tier 3 to meet the needs of each individual student, including strategies and activities for use during small group time through the differentiation resources. For students who are ready for additional challenges, more advanced tasks are available through the enrichment resources.

Both coordinators consider the formative assessments available in *Stepping Stones* vital in building confidence and ensuring a deeper understanding of high-level math. "The formative assessments and student interviews allow teachers to see exactly where kids are on the learning progression, so they can move them forward," Phillips said.

One of the features of *Stepping Stones* particularly useful to educators at WCPS is the way teachers

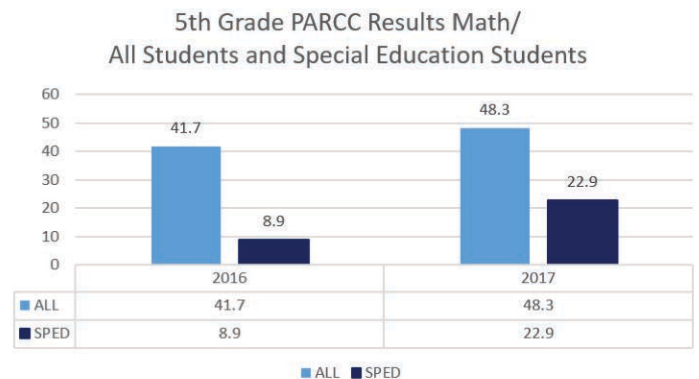
are able to identify exactly where students start to lose their way. "When teachers have a student working below grade level, they can just click on the breadcrumbs to go back to find where the student first began to struggle," Phillips explained. "They can re-teach the problematic concepts in real time, ensuring that students experience success, rather than falling further and further behind."

Taking success to the next level for both learners and teachers

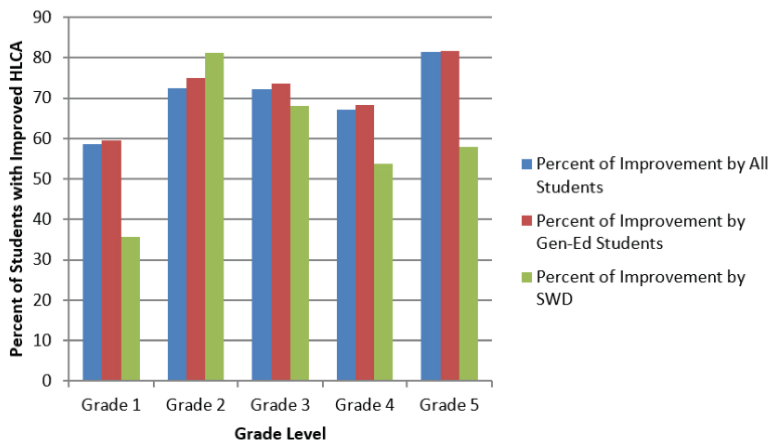
Worcester County's experience with *Stepping Stones* has been so successful that they are now expanding the program to include Pre-K and 6th grade. "Having *Stepping Stones* used in every K-5 mathematics classroom has been key to its success," Phillips said. "The coherence across grade levels ensures that students are immersed in a way of doing math that is fun and motivating. With Pre-K and 6th grade added to the mix, students' depth of understanding will be even stronger."

As both Danisavich and Phillips agreed, *Stepping Stones* has improved teacher professional development in the district. "The Mathematics tab and Math Ed channel have helped our teachers develop a deeper understanding of the mathematics and progressions of skills," said Phillips. "Our teachers are able to think flexibly to help students bridge between conceptual understanding, representation, and abstract representation." Danisavich agreed, adding, "It has been great to see teachers grow. Last month, I observed a 35-year veteran teacher who used to teach 'algorithmically.' Not only were his students were using base-10 blocks, hundred charts, number lines, and connecting cubes to solve word problems, but the teacher was asking, 'Did anyone solve it a different way?' ORIGO empowers teachers to be amazing math teachers!"

Both educators shared the different ways using *Stepping Stones* has made their teams more efficient and focused during Professional Learning Communities (PLCs). Today, less time is spent



Historically, fifth grade achievement at WCPS dips. With this expectation, administrators had coaches focus on Grade 5 this past year, along with the implementation of *Stepping Stones*. Maryland identifies students who are on track for college and career readiness as those scoring a 4 or 5 on PARCC (the state assessment). Using this definition, the share of all students scoring at this level increased 6.6% and the share of special education students scoring at this level increased by 14%. That improvement is illustrated in this chart.



On Worcester’s county assessment for the past two years, the district has seen an increase in the number of ways students solve tasks. In the past, students would rely solely on the memorized algorithm. Now, through the use of multiple concrete models and visual representations in *Stepping Stones*, educators in Worcester are seeing students improve their performance by using multiple representations. This chart illustrates that growth for the overall student population (blue), typical students (red), and identified special education students (green).



searching for resources to plan lessons, so teachers are able to have in-depth discussions about the mathematics and student understanding. Also, during the PLCs teachers have access to lessons from prior grade levels, allowing teachers to fill gaps.

Danisavich agreed. “Through *Stepping Stones*, our teachers are becoming better mathematicians themselves. They are using the math content vocabulary fluently and are opening up their way of thinking to allow for more flexibility. When students come up with a unique way to solve a problem, teachers listen to the thinking and really delve into the student understanding.”

Perhaps most importantly, the greatest benefit is the impact on students at WCPS. “Using *Stepping Stones* in all our elementary schools at all levels from Pre-K through 6th grade ensures that all our students have the same opportunity to learn. Our vision was to implement a program that increased high-level mathematics understanding and helped students and teachers love math. It has put all our campuses on the same playing field, so that all students have the same opportunity to learn,” Danisavich concluded. “It is so exciting to see our vision become a reality.”

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