



# Improving Student Achievement and Engagement with Effective STEM Teaching



Park Ridge Elementary School  
Broward County Schools, Florida

A 2016-2017 study of Park Ridge Elementary School in Broward County, FL showed a shift in focus to STEM learning resulted in improved student testing scores and engagement. The two-year study showed marked improvement after education leaders implemented the STEM focus supported by two services from Discovery Education — *Science Techbook*, a digital science textbook, and STEMformation, a standards-based professional development program.

The gains at Park Ridge followed an initiative at six elementary schools in Broward County designed to improve student outcomes by focusing on STEM studies. Students at all six schools demonstrated improvement on state assessments, but Park Ridge's students in particular saw significant gains in their reading and math scores. Researchers attributed some of that success to Discovery Education's implementation at the school.

## Quick Facts

Park Ridge and Discovery Education partnered together from 2015-2017 to **improve STEM teaching.**

### Subject

- STEM

### Discovery Education Solutions

- STEM Focus
- *Professional Learning*
- *Science Techbook*

### Classroom Application

- Teacher Support
- Supplemental Instruction

The [STEMformation] program at Park Ridge ES, specifically, the integration of Discovery Education digital content and instructional practices into classroom instruction, produced positive impacts on teaching and learning over the past two years,” according to a report by Metis Associates, a national research and consulting firm.



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Student results were measured based on their performance on the Florida Standards Assessment (FSA) between 2016-2017. Park Ridge students showed a **6.1 percent increase in their reading scores, and a 3.1 percent increase in their math scores** during the course of the study.

Students were also more engaged in their classrooms during the initiative. At Park Ridge, most students improved their daily attendance and cut in half the number of behavior referrals, according to the report. **More than 70 percent** of surveyed students indicated that technology, science or STEM, and art and music “made learning more fun.”

Teachers also had positive things to share about STEM studies aided by Discovery Education. “Students persevered a lot more; they wanted to figure things out more. Discovery Education provided students with exposure to experiences they may not have had,” wrote one teacher.

STEMformation was a three-year, research based professional development program from Discovery Education designed to build a sustainable culture of standards-based STEM teaching and learning. Educators were given a strong foundation for STEM instruction through a series of on-site learning labs, sustained by ongoing, customized job-embedded support. All teachers attended ongoing, intensive professional development, including a five-day summer institute, and four days per month of coaching throughout the school year.

## Setting Their Sights on Success

Three years before the program’s implementation, students at Park Ridge were struggling. The school’s overall test scores were failing, attendance had plummeted, and the Deerfield Beach community was not engaged with the school. Broward County Public Schools’ leadership wanted to help breathe new life into the challenged school, which had become one of the lowest performing schools in the state. They instituted a fresh start at Park Ridge with all-new staff, and two years later, a palpable change could be felt in the hallways at Park Ridge. Students were more attentive and responsive in class. Parents were more engaged with their children’s education. A buzz of positivity coursed through the classrooms. By the end of the 2016-2017 school year, Park Ridge’s student scores broke a years-long streak of failing grades to reach an overall grade of C.

Instrumental to the success at Park Ridge was establishing trust with students and the community, but it took a full year for school leaders to lay down the roots of change. When students opened the school’s doors at the start of that year, they saw the results of a labor of love by the new staff. They had changed what learning looked like at Park Ridge. Some changes were subtle, like new, inspirational art for the walls and furnishings in classrooms. Some were sweeping, such as new teachers, and new devices providing new avenues for teaching and learning.

## Professional Learning

Park Ridge educators also began training with Discovery Education *Professional Learning* and incorporating *Science Techbook* in classrooms to support literacy—one of the key challenges facing the school. When professional development coaches from Discovery Education entered the school, they'd be greeted with, "Discovery is in the house!" The DE team worked with teachers on co-planning, co-teaching, reflecting on lessons, and mentoring, with an emphasis on grades 3-5. "From the very beginning, we established our roles as sideline coaches, working alongside the 'head coaches'—teachers—to incorporate Science Techbook into their instruction." said the DE team lead.

## Lightbulb Moment

*Techbook's* text-to-speech function proved to be an especially powerful tool for Park Ridge's struggling readers, allowing them to interact with text in a meaningful way, instead of reading being a consistent hurdle. Techbook also provided multimodal learning experiences, with videos and lessons that helped to ground the concepts students read about as they saw the phenomena in motion.

*Techbook* has opened their eyes to the wonder of how things truly work. It integrates everything together at a high level. And they aren't just reading — they're engaging with the content. I love it when students want to share things like how circuits work, or why hurricanes form, because you can see their eyes light up.



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Discovery Education was being used as a mechanism to revitalize the school, along with enhanced curriculum, a STEM focus, family engagement, and literacy. But none of that could have been achieved without strong support from the community and the district. The school hosted learning and community nights to help re-engage with parents, making them feel welcome at the school, and be a part of the ongoing transformation. The Park Ridge staff had restructured everything, and they were hopeful they could make a difference, but they knew they first had to build the capacity for future achievements. It's what made the results of that year so bittersweet

## Continuing the Climb

Despite the momentum generated in the first year, the testing results were difficult to face. Students' grades had improved, but they still amounted to an F. It was an emotional moment for the community, but they knew this would be an uphill climb.

With the overhaul of the building completed the previous summer, the staff had more time over the following summer to hone the essentials of teaching. During those months, they invested more than 1,200 hours on professional development activities with Discovery Education staff. Teachers focused on expanding their STEM program, how to support an emphasis on engineering and environmental sciences, along with inquiry-based science exploration, and made plans to integrate coding and robotics more in the classroom.

They also expanded a student mentoring program built around Stephen R. Covey's "7 Habits of Highly Successful People," reinforcing leadership skills, how to be proactive, and how to set goals. By the time year two started, school leaders knew they had the right team, and the right programs to achieve success. The students were also in a better place to discover a love for learning.

## **Looking Ahead**

Now that they've raised student test scores and shown the community that change can be achieved, the coming school years are filled with challenge and excitement for Park Ridge. They will continue to work with teachers on building capacity to help the school's science and STEM programs grow organically.

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