



## Horizon Elementary Raises Passing Rate 21 Percentage Points in One Year on Florida's Grade 5 Statewide Science Assessment

### SUMMARY

At [Horizon Elementary](#), a Title I school in Broward County Public Schools, the passing rate on the Florida Grade 5 Statewide Science Assessment jumped from 27 percent in 2016 to 48 percent in 2017. How did Horizon's fifth grade teachers help their students make a gain of 21 percentage points in just one year? In 2016-17, they transformed their classrooms into active learning spaces for science with the [STEMscopes™](#) digital science curriculum and hands-on exploration kits.

### CHALLENGES

"Previously, we had low test scores every year on our county benchmark assessments and our state assessment in science. We were using a textbook as our main resource for teaching science, but it wasn't really motivating, especially when compared with today's technologies," said fifth grade teacher Karen Silensky.

"Another challenge was that the textbook didn't really have the 'meat and potatoes' to help our students understand key concepts," said fifth grade teacher Robin Butcher.

"We wanted to find a way to engage students at a deeper level and get them excited about science again," said Silensky.

### SOLUTION

- Implementation of the STEMscopes PK-12 Digital STEM Curriculum

Horizon Elementary began using the [STEMscopes Florida](#) digital science curriculum at the fifth grade level in fall 2016, as well as a Spanish version that is available for the program. STEMscopes Florida is 100 percent aligned to the Florida Next Generation Sunshine State Standards for Science (NGSSS). It can be used as a core science curriculum or supplementary resource in traditional, blended, and 1:1 classroom environments.

“STEMscopes covers everything our textbook covers, but it presents the content in a way that’s much more motivating for students,” said Silensky. “Now when we say, ‘It’s time for science,’ not one student groans. Instead, they’re excited. That’s a big change.”

*“STEMscopes gets teachers more motivated about teaching science, too,” said Robin Butcher, 5th grade teacher. “If other teachers aren’t using STEMscopes yet, they should.”*

### ***Providing inquiry-based learning for diverse learners***

STEMscopes promotes student inquiry and a real-world understanding of science, engineering, technology, and mathematics through hands-on and digital experiences. It provides teacher and student digital resources, supplemental print materials, and hands-on exploration kits that build student engagement and excitement for learning.

“STEMscopes is a major motivator for our students. It helps them grasp concepts, build their critical thinking skills, and connect science to real-world situations,” said Butcher. “Students especially love the concept videos and ‘Science Rock’ music videos. The Water Cycle song was in the first scope we taught in the fall, and students were still singing it for us at the end of the year.”

Each STEMscopes unit is developed around the 5E model of instruction, with additional phases for Intervention and Acceleration to meet the needs of diverse learners. As students dive into the investigations in each scope, they develop their own contexts and meanings for the scientific concepts they are learning, retain more knowledge, and develop deeper understandings of the world around them.

“Last year, we focused primarily on the Engage and Explain stages of the 5E model, and we frequently used STEMscopes to introduce topics during whole group instruction. This year, we want to dive further into the Explore, Evaluate, and Elaborate stages to extend students’ learning and help them become more independent learners,” said Butcher.

“We also want to do more with Intervention and Acceleration,” said Silensky.

### ***Preparing for standards-based assessments***

According to Butcher and Silensky, STEMscopes played an integral role in helping students learn and review key concepts as they prepared for the county benchmark assessments and the state assessment in science.

“The ‘Concept Review’ is the highlight of every scope in STEMscopes,” said Silensky. “We like turning it into a classroom game, having students move to the left or right to answer a question or having the boys and girls compete to see who can get the most correct answers.”

In the middle of the 2016-17 school year, Horizon Elementary also purchased the STEMscopes hands-on exploration kits. “We began using the kits as a review to help students prepare for our benchmark assessments, which was really helpful to them,” said Butcher.

### ***Helping English language learners***

“We had one student who didn’t speak much English, so we put him on the Spanish version of STEMscopes. The videos and animations were really helpful for him, too,” said Butcher. “It was so much more beneficial than

giving him a textbook. By the end of the year, he was speaking more English, and even though our state assessment is given in English, he did well. We definitely think STEMscopes played a role in his success.”

**RESULTS**

From 2016 to 2017, the average passing rate for the state of Florida on the Grade 5 Statewide Science Assessment remained at 51 percent, and the passing rate for Broward County rose from 45 to 47 percent. In contrast, the passing rate for Horizon Elementary jumped from 27 to 48 percent — a gain of 21 percentage points.

Florida Statewide Science Assessment Grade 5 Passing Rates			
5th Grade	2016	2017	Change
Horizon Elementary	27%	48%	+21%
Broward County	45%	47%	+2%
State of Florida	51%	51%	0%

A Title I school, Horizon serves predominantly minority and economically disadvantaged students, and a higher percentage of English language learners (ELL) than the district and state averages.

Student Demographics 2016-17			
	Horizon Elementary	Broward County	State of Florida
White	13%	21%	39%
African American	53%	39%	22%
Latino	26%	33%	32%
Other	8%	7%	7%
Economically Disadvantaged	79%	62%	58%
ELL	16%	13%	10%

“Our principal said that we were one of only two elementary schools in the district — which has more than 250 elementary schools — that had double-digit gains,” said Butcher. “STEMscopes helped contribute to Horizon Elementary’s gains.”

“Our math and reading scores went up too, but they were nowhere near our science gains. There were some students who didn’t do well in reading or math, but they did very well in science. I would say that at least 80 percent of our success on our state test is due to STEMscopes, and that’s pretty good,” said Silensky.

“STEMscopes is great,” said Silensky. “Until this year, students didn’t understand that science is everywhere. In kindergarten through fourth grade, they thought science was a book. Now they realize science is everyday life.”

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