

IMPACT REPORT

How Penda Science Supports Improved Academic Outcomes in Sarasota County Schools, Florida

2022–23 Academic School Year SSA & EOC Scores

Sarasota County Schools (SCS) faces the same challenges as districts across the nation in a post-pandemic educational environment, including teacher vacancies, long-term substitutes, out-of-field teachers, and disengaged students. After learning about Penda Science, an online intervention resource, from a neighboring district, SCS piloted the program in January 2022. The pilot was successful, with positive teacher feedback on student engagement. As a result, SCS implemented Penda Science district-wide in the 2022–23 academic year and continued using it in 2023–24.

“Many of our schools used the [Penda] School Break Challenges,” said Laurie Lundberg, M.Ed., the middle school science program specialist for the district. “It has now become a regular practice to offer these events, keeping students engaged with science content while school is not in session.”

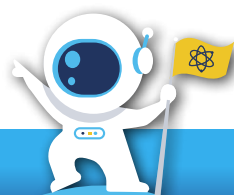
Dr. Sarah Burkett, the high school science program specialist, noted that Penda Science has delivered significant benefits in various aspects of student learning and is a crucial part of the district's science curriculum.

“Penda Science has been instrumental in supporting our students in science learning, content vocabulary development, and the review of core concepts,” Dr. Burkett said. “Its interactive nature, personalized approach, and data-driven insights have contributed to improved academic outcomes and a deeper appreciation for the wonders of science among our student body.”

This report highlights the positive impact of Penda Science in Sarasota County Schools following the initial implementation.

How Penda Science Is Being Used Throughout Sarasota County Schools

- Science learning reinforcement
- Content vocabulary development
- Review of core science concepts
- Personalized learning experiences
- Data-driven insights and reports





Leaps in Statewide Science Ranking & Consistent Growth in Scores

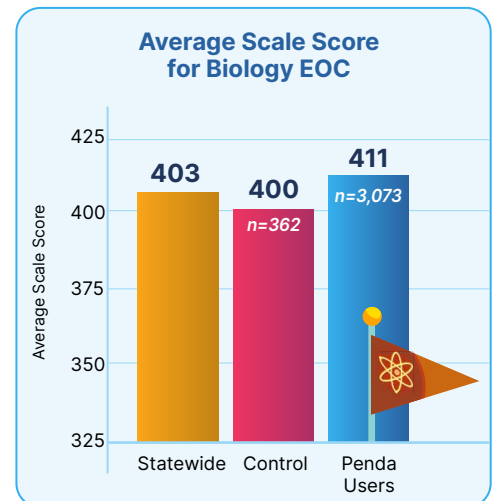
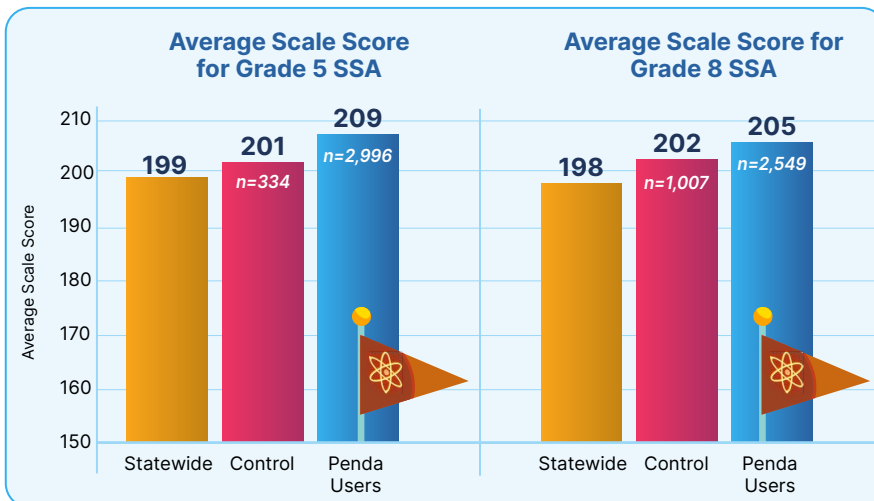
Test score data from 2023 show a positive correlation between Penda usage and SCS's jumps in state rankings from the 2021–22 school year to the 2022–23 school year:

Grade 5 SSA
State Ranking:
Jumped from
7th
↑
4th

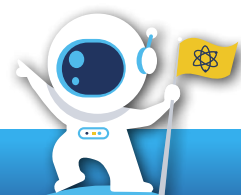
Grade 8 SSA
State Ranking:
Jumped from
13th
↑
11th

Biology EOC
State Ranking:
Jumped from
8th
↑
7th

2022–23 Statewide Science Assessment (SSA) test scores for grades 5, 8, and Biology EOC show increases in mean scale scores between SCS students who used Penda and those who didn't. Consistent improvement in average scores over time, compared to statewide scores, demonstrates a positive correlation between Penda usage and an increase in test scores.



- Students who took the Grade 5 SSA who used Penda had an **average score of 209 — 10 points greater** than the statewide average and **8 points greater** than the control group.
- Students who took the Grade 8 SSA who used Penda had an **average score of 205 — 7 points greater** than the statewide average and **3 points greater** than the control group.
- Students who took the Biology EOC who used Penda had an **average score of 411 — 8 points greater** than the statewide average and **11 points greater** than the control group.





Struggling Students Experience Gains, Too

Performance levels range from 1 to 5, representing student achievement on state assessments. Level 1 indicates students struggling the most, Level 3 represents those performing at or above grade level, and Level 5 includes students expected to excel.

Test score data below show a statistically significant correlation between Penda activities mastered (defined as achieving a score of 80% or greater on an activity) and test score growth for SCS Level 1 students.

Activities Mastered					
Grade Level	Performance Level	Number of Students	Rs Value	P-Value	P-Value Significance
Grade 5 SSA	1	409	0.30	0.00	p < 0.001
Grade 8 SSA	1	529	0.09	0.04	p < 0.05

As teachers identified student strengths and weaknesses from district assessment data, Penda made it easy for teachers to quickly create differentiated groups to assign students remediation and enrichment lessons for SSA review."



~ Cheri Dame

Sarasota Elementary School Science Program Specialist

Steady Advancement for Minority and Marginalized Students

Test score data show a statistically significant correlation between Penda usage—hours of engagement, activities attempted and/or mastered—and test score growth for students with unique needs, from diverse backgrounds, and historically marginalized populations.

Here's a snapshot of minority student groups Penda usage has positively impacted:

- Black, Hispanic, and Asian students
- Exceptional Student Education (ESE) Students
- English Language Learners (ELLs)

Mastering More Penda Activities Helps ELLs Boost Test Scores

The more Penda activities SCS ELL students mastered (defined as achieving a score of 80% or greater on an activity), the higher their test scores.

In all grades shown below, there is a highly statistically significant correlation between mastering Penda activities and strong results on SSA and biology end-of-course assessments.

Correlation of Penda Science Usage to Grade 5, Grade 8, and Biology Test Performance Growth by ELL Status

Activities Mastered				
Grade Level	Number of Students	Rs Value	P-Value	P-Value Significance
Grade 5 SSA	222	0.50	0.00	p < 0.001
Grade 8 SSA	161	0.36	0.00	p < 0.001
Biology EOC	146	0.37	0.00	p < 0.001

