

STEM CAMP



SUMMER STEM PROGRAM ENGAGES, INSPIRES MIGRANT PROGRAM STUDENTS

SANTA MARIA, CA – When it comes to children of migrant workers, the task to accelerate them academically can at times seem almost insurmountable. “That population, because of the farm workers and the labor workers, they kind of come and go,” said Caleb Gonzalez, a former teacher on special assignment (TOSA) for Santa Maria-Bonita School District in California. In addition to spotty attendance records, migrant students often have language and socioeconomic barriers to contend with, making school a constant difficulty.

With a population of migrant students hovering around 75 percent, the Santa Maria-Bonita School District took steps to combat the summer school blahs for those students by piloting Pitsco Elementary and Secondary STEM Units in 2016. Wanting to start small, Gonzalez decided to use the Pitsco STEM Units for Benchmark students, those who needed little or no intervention. So instead of their regular curriculum, Benchmark students in Grades K-4 engaged in hands-on activities involving topics such as Exploring Flight, Exploring Structures for Animals, Exploring Structures in Literature, Bridge Structures, and Air Engineering

PROFILE »

SCHOOL: Santa Maria-Bonita School District

LOCATION: Santa Maria, CA

GRADES: K-8

Challenges, while Grades 5-6 explored the Bridges and Model Airplanes STEM Units and Grades 7-8 did the Air Rockets and Unconventional Flight STEM Units.

HANDS-ON ENGAGEMENT BOOSTS ATTENDANCE

Pitsco STEM Units – whole-class, cross-curricular activities designed to get students using problem-solving skills to explore a variety of topics – have made quite an impression on the students and teachers of the summer school program. Maintaining enrollment during summer school is a common challenge, and it is not unusual for classes to

begin with high enrollment only to see attendance quickly dwindle. But the collaborative engagement and the daily wow factor of the Pitsco activities kept student attendance high from start to finish in Santa Maria-Bonita.

“The kids being able to explore, to manipulate, to move around, to get together in small groups or partners, or even whole class, and work on these experiments and these activities, that just really captured their attention and made the attendance go up,” said Gonzalez.

Focusing on a STEM-based enrichment program that fosters development of academic language rather than a traditional remedial intervention experience appears to have significantly boosted students’ skills and confidence in a way that typically occurs only in more affluent communities.

The STEM Units “have everything,” according to Mario DiCarlo, who taught second and third graders in the summer program. “They have the materials, the kits. The first day we did a structure activity, and the kids were all engaged. They were excited! One student in particular exclaimed to his mother, ‘Mom, look what I built! I did this, and I made it this tall! My structure’s a pyramid. I learned about pyramids – I wrote it down. I cannot wait to come back to school tomorrow! I’ve never heard that before,” said DiCarlo. “Ever.”

ENJOYABLE AND ACADEMICALLY RICH, ESL FRIENDLY

The STEM Units are all encompassing, explained DiCarlo. “It wasn’t just a workbook or worksheet, but it also wasn’t just hands-on, make something and forget it. You had to document why. You had to use the scientific method to investigate what you learned and what you made and how you can make it better. All those components made it a richer lesson than just building something or doing a craft.”

What’s more, the hands-on component of the units led to deeper language arts learning for ESL students because the actions corresponded with what they were reading. “Usually I give them a workbook and they have to struggle through it,” said DiCarlo. “But making something hands on, it made more sense. They could piece it together a lot better. They not only read about it; they made it. They would say, ‘Can I see what it said again?’ and then go back to their instructions. The building part helps them understand the curriculum, and they’re reading more.”

GRADE	HANDS-ON EXPERIENCE
Kindergarten	<ul style="list-style-type: none"> • Exploring Air • Exploring Heated Air • Exploring Flight
Grade 1	<ul style="list-style-type: none"> • Exploring Structures for Animals • Exploring Transportation
Grade 2	<ul style="list-style-type: none"> • Exploring Packages • Exploring Structures in Literature
Grade 3	<ul style="list-style-type: none"> • Bridge Structures • Cantilever Structures • Suspension Structures
Grade 4	<ul style="list-style-type: none"> • Compressed Air • Kites in Air • Air Engineering Challenges
Grade 5-6	<ul style="list-style-type: none"> • Bridges • Model Airplanes
Grade 7-8	<ul style="list-style-type: none"> • Air Rockets • Measurement & Prediction • Unconventional Flight



Santa Maria-Bonita Summer STEM students learned about structures, flight, and more using Pitsco STEM Units.

FUNDING SUMMER STEM PROGRAMS FOR MIGRANT STUDENTS

The US Department of Education Office of Migrant Education offers state formula grants to fund programs that support high-quality education for migratory children with a goal “to ensure that all migrant students reach challenging academic standards and graduate with a high school diploma (or complete a GED) that prepares them for responsible citizenship, further learning, and productive employment” (www2.ed.gov/programs/mep/index.html).