

## **San Onofre School Model Programs and Practices**

### **School Information**

CDS (County District School) Code: 37681146096515

County: San Diego

District (Local Educational Agency): Fallbrook Union Elementary

School: San Onofre School

### **Demographics**

Enrollment: 550 students

Location Description: Suburban

Title I Funded: Yes

Type of Program: School-wide

School Calendar: Traditional

Charter: No

### **Overview**

San Onofre School, located on Marine Corps Base Camp Pendleton, proudly educates a melting pot of military students in North San Diego County. We are part of the Fallbrook Union Elementary School District. We currently have 450 students in grades TK–6 of diverse ethnicities. Our student population is 56.4% Caucasian, 32.4% Hispanic or Latino, 6% African-American, 0.8% Filipino, 0.4% Native Hawaiian/Pacific Islander and 4.4% Two or More Races. Our students are 48.9% socioeconomically disadvantaged, 2.5% English Learners, and 18.9% Students with Disabilities. Almost exclusively, students enrolled are Marine Corps dependents. Our school is privileged to service students and families who are savvy, resilient, and quick assimilators into school and community life. San Onofre's students endure burdens not experienced by civilian youth: our families relocate frequently; students often reside in single-parent structures caused by deployment and suffer significant psychological stress caused by lengthy and often repeated parental deployment.

San Onofre students, parents, and staff have contributed to an environment of academic achievement, responsibility, teamwork, diversity, and respect. We educate the whole child by providing programs that infuse strong academics and intervention to assist students with social-emotional as well as academic needs. Increasing student achievement is critical at San Onofre. We offer a rigorous, academically rich core curriculum aligned with the California State Standards and Next Generation Science Standards. Our staff works together to help our students adjust socially and emotionally through our mental health counseling services, leadership and intervention programs to meet the needs of our frequently transitioning student population.

Through dynamic rigorous instruction fused with STEM integration, the San Onofre staff has developed goals to create future-ready students. Professional development opportunities have focused on the implementation of the 4 Cs: creativity, communication, critical thinking and collaboration. Schoolwide programs such as the Global Read Aloud, NGSS practices and Genius Hour, have helped us create a rich STEM culture where students/staff have the opportunities to expand their skill set and become global citizens.

The school has been the recipient of the California Business for Education Excellence for five consecutive years and received the STEM Honor Roll School award for high poverty, high performing in Math and Science. San Onofre School is also an Academic Distinguished “Leader in Me” School. Furthermore, San Onofre School was awarded the prestigious 2016 Gold Ribbon Award and Title I Achievement Award.

At San Onofre School, we strive to ensure that children of active duty Marines receive the essential tools to excel academically, thrive socially, and master skills necessary for life, work, and to become global citizens.

## **Model Program and Practices**

Name of Model Program/Practice: San Onofre STEM Program

Length of Model Program/Practice: 2–4 years

Target Area(s): Career Technical Education, Closing the Achievement Gap, Parent, Family, and Community Involvement, Professional Development, Science, Technology, Engineering, and Mathematics, Use of Technology

Target Population(s): Hispanic, White, Socioeconomically Disadvantaged, Students with Disabilities

Strategies Used: School Climate, Parent Engagement, Data-Driven Decision Making, Social/Emotional/Behavioral Support, Professional Development, Implementation of Academic Standards Basics (Teachers, Instructional Materials, Facilities)

## Description

To facilitate the implementation of our district's STEM goals, our staff developed essential practices which equip students with technological skills that prepare them for college and career readiness. Through the Global Read Aloud and Genius Hour, students utilized the 4 Cs, while interacting with an authentic audience, meaningful technology integration and global connections. These social connections promote deeper thinking and writing. Teachers also worked collaboratively with our STEM TOSA in the implementation of the NGSS units of study with every student TK–6. Although all students benefit from these STEM skills, our specific subgroup “students with special needs” receive ongoing support during lessons, and any accommodations/modifications needed to make all programs accessible to them. Special needs students who would not normally participate in clubs have been integral members of the LEGO Robotic Clubs.

Our STEM programs were made possible through funding from Title 1, our school district, and the generous support of the Laguna Beach Assistance League. Our district and Title 1 funds supplied the FOSS NGSS kits. Donations purchased robotics, 3D printers, Global Read Aloud books, and a MakerSpace.

In addition to these practices/programs, teachers have had numerous opportunities to attend STEM professional development. FUESD has provided all school staffs with ongoing Discovery Education trainings. Additionally, San Onofre leadership has made STEM an ongoing focus the past four years. Staff meetings and professional development have focused on the 4 Cs integration, creating STEM goals, engineering practices, and developing transdisciplinary lessons. Along with these opportunities,

after-school trainings have focused on science discourse, technology integration, engineering practices, FOSS Science/Mystery Science implementation, while modeling a variety of “SOS” (Spotlight on Strategies). The objective of these various trainings is to build staff capacity to empower students with the skills necessary for their college and career success.

A successful program requires family and community support. Three times a year, students host family nights that highlight our STEM opportunities: LEGO showcases, Evening of Code, Science Night and a STEM Expo. The transiency at a military school is ongoing, thus making it important to share our goals every trimester with family/community for ongoing support.

Some of the benefits to implementing our STEM culture at San Onofre School are aimed at continuous school-wide achievement in Math, with extra attention to 20% of our student population, students with special needs. Our hope for this program is that students will feel increased connectedness which will improve student attendance rates.

## Implementation and Monitoring

San Onofre School uses communication methods to inform students, staff and parents about our STEM opportunities: monthly newsletters, social media, school website, and fliers. We offer year-long opportunities to join Robotics Clubs in grade TK–6. Each club showcases their accomplishments during a family event. We have had 90–100% attendance rates in our after-school classes, including students with special needs. ABA therapists, parents and paraeducators work with our special needs students to provide specific accommodations/modifications in the after-school programs.

Mrs. Arellano, a parent of a 3rd grade student with autism stated, “I feel like Kaitlyn has really grown this year socially and academically, she loves robotics and the opportunity to learn about coding with her peers. We are so thankful for all her support and the staff genuinely cares about her!”

Throughout the academic day, robotics instruction includes BeeBots, Colby Mice robots, Dash and Dot, Sphero robots, Cubelets, LEGO WeDos, and LEGO EV3s. The TK–6 robotics continuum has been unique to our school site due to the generous donations of the Laguna Assistance League and leadership of STEM TOSA. Parents and community members are invited to learn about our STEM programs through our Leadership Days, Open House, Back to School Night and Family STEM events.

Our STEM program development evolved with feedback/results from our teachers, parents, and students:

- San Onofre School Needs Assessment was a parent survey that covered all school programs.
- Speak Up Survey and Research Project provided information about what students, parents, and staff think of the role of technology in schools.
- Our district administered a technology survey to the staff
- California Healthy Kids Survey (CHKS)
- California Assessment of Student Performance and Progress

We attribute our success to the ongoing professional development opportunities. Here are examples of our professional development schedule from the past two school years:

### 2015–2016 Teachers and Administrators

- Introduction to STEM
- Google Classroom Training
- Google Forms Training
- Making Global Connections with Technology
- Bringing Coding into Your Classroom

### 2016–2017 Teachers and Administrators

- Cyberpatriot Training
- 5 STEAM Essentials/SOS STEM Goals
- STEM and Literacy in Primary Grades
- Mystery Science
- Next Generation Science Standards

### 2017–2018 Teachers and Administrators

- 4 Cs In STEM Integration and FlipGrid
- NGSS Science and Engineering Practices
- Foss Science
- Twitter Training Wheels
- Mystery Science
- Global Read Aloud
- Using the 4Cs in ELA/Math Centers
- How to integrate the 4Cs
- Common Sense Media
- SeeSaw Training
- Navigating Discovery Education Digital Platform
- Discovery Education

Lastly, administrators gathered data on effectiveness of instructional learning during daily instructional walkthroughs. Direct feedback is given to staff through observation forms.

## **Results and Outcomes**

Our data shows that the STEM culture has a direct correlation to our students continued academic success. The CAASPP Fall 2017 results showed our focus subgroup “students with disabilities” increased 25.5 points on their math scores, outperforming state/district averages and doubled their scores from Spring 2016. Their scores not only increased, but they remained at the highest performance level. The CAASPP Fall 2017 scores for “all students” at San Onofre showed a 14.4 point increase. While district “students with disabilities” grew 17.2 points, but remained in the low performance level. The past four years of CAASPP data has shown continual growth in our math scores, which reflects on our STEM program.

The 2016–2018 San Onofre School Needs Assessment results showed that 88–95% of our parents are pleased with the STEM opportunities offered at San Onofre School. Speak Up Survey also states that 93% of parents report they are pleased with communication regarding school programs and that the school offers many opportunities in STEM. Staff results show San Onofre teachers scored 23–25% higher than district/national results on the importance of the use of technology integration to create more interactive lessons.

The 2017–2018 CHKS survey also showed that San Onofre school absenteeism rates were reduced by almost 50% from 8.8% to 4.8% which again, we attribute to student connectedness. Lastly, data collected from instructional walkthroughs show technology integration increasing schoolwide by 23% over the past two years.

#### Next Steps:

Summer 2018 professional development opportunities will continue to build our expertise level in STEM, administration and staff will participate in Discovery Education "STEMmersion" and other NGSS trainings. San Onofre STEM committee will continue to integrate STEM into their academic goals for the year 2018–2019. Staff evaluations will include the use of the "5 E Model" lesson template, the components of the lesson include Engage, Explore, Explain, Extend (or Elaborate), and Evaluate, unlike the traditional Direct Interactive Instruction Lesson format. As more teachers become well-versed in the 4Cs of STEM, we will continue to offer teacher-led professional development and more student programs. Administration will also continue to gather data regarding instructional learning during daily walkthroughs using a 4Cs feedback form. Feedback will also be collected from students and families in regards to next steps in STEM.

In conclusion, both qualitative/quantitative survey results, interviews, and observations have given us valuable data to continue the growth of our STEM culture and develop Global Citizens.

One of our fifth grade students, Kendall Breslin, summed up our "Why" for STEM:

"It opened my mind and changed my perspective on ideas I had never thought of."

While we have reached amazing milestones in STEM, the journey has just begun.