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**SOUTH VALLEY JUNIOR HIGH SCHOOL**



**South Valley Junior High  
creates perfect place to learn  
with support from Siemens  
and FUSE Program**



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In southwestern Arizona, South Valley Junior High offers a wide range of academic and extracurricular programming that have earned national and state-wide recognitions for excellence. As the educational landscape continues to evolve, Principal Tim Cannon explains that the school was ready for a different approach to helping students learn and prepare for the world beyond junior high school.

"There has been a shift in education from 'sit and get' to 'get out and get after it.' You see it in all classrooms, especially STEM-based classes, and so we have made adjustments over time. Students are already good at using technologies, so we are bringing in coding and other opportunities for learning that weren't available even a few years ago," he says.

So when STEM teacher Alexis Mason approached Cannon with a potential opportunity to include the FUSE® program at South Valley Junior High, he jumped at the opportunity. FUSE facilitates learning through innovative challenges in a studio environment; it builds collaborative, student-centered communities while introducing students to science, technology, engineering, arts, and math concepts in an engaging way.

According to Mason, the FUSE approach aligns with her student-centered, inquiry-based teaching philosophy: "I was looking for new ways to bring inquiry and project-based learning into my science classroom. When I came across FUSE, it felt like a perfect fit. We tested it out, and it's just been amazing,"

she says. Cannon continues, "The FUSE vision for engaging students was the key reason we wanted the program here at our school. We believed it would have a huge impact on our students and change the way they learn. The concept of 'leveling up,' in particular, was compelling."

### **\$26,000 grant from Siemens establishes inquiry-based learning program**

"When teachers decide what's best for the students, they're going to figure out how to make it happen," says Cannon. "My job is then to facilitate resources, find the space, and so on. All teachers here at South Valley put extraordinary effort into what they're doing, and—like everywhere across the country—we don't always have endless funds, but we figure out a way."

And so, South Valley Junior High has funded their FUSE program for the first two years with a grant from Siemens Smart Infrastructure. Siemens has been supporting school districts across the U.S. for a number of years, not only with improvements and upgrades to infrastructure, but also with a national approach to STEM education and workforce development support. In 2017, Siemens began offering FUSE grants as a way to further support schools like South Valley Junior High, who was one of the first eleven schools to receive such a grant from Siemens.

### **From delivery of education to facilitation of learning**

Today, South Valley has repurposed its computer lab to house the FUSE studio,





and Mason says, “The FUSE lab looks so different from a traditional classroom. It’s busy and loud; you’re not walking past and seeing kids with their heads in their notebooks. It can be a bit much, honestly, but when you look closely at what’s happening, every single student is busy solving problems and talking about what they’re learning.”

Students in a FUSE studio are empowered to choose what they’ll learn. They have access to a diverse array of educational challenges, each of which is carefully designed and comprised of levels of increasing difficulty. From building solar-powered cars and creating video games to designing roller coasters and engineering a smart home, which takes the form of a castle, students start each challenge at level one. When they get stuck, they can turn to the FUSE studio website for videos, or they turn to their teacher-turned-facilitator for support. Instead of feeding students the answers, facilitators help students discover the answers themselves.

“It feels much more like a coach position than a teacher,” explains Mason. “I make sure the kids have what they need, and I can help guide them through it. But the beauty of FUSE is that the students take ownership of their learning, and you can see they now have more self-efficacy. When they thought they couldn’t do something, but they give it a try and make progress, they feel like geniuses. That’s the best feeling.”

Cannon concurs, and says, “The unique part of FUSE is that the students could all be

working different challenges at the same time, and they will be able to articulate to you exactly what they’re doing. Sometimes you’ll see someone who’s stuck, and another student will go say, ‘You know, when I was working on this challenge, here is what I did and what I learned.’ You don’t see that all the time; kids will become experts in a particular area and then go help someone else.”

### **FUSE lab helps students believe in themselves**

Students who participate in FUSE challenges learn far more than the core skills that form the basis for the activity. That is, students are also learning about grit, persistence, perseverance, and “that it’s okay to fail. This can be a tough concept as an educator and as a parent,” says Cannon. “But FUSE teaches you that you have to fail in order to succeed. To become a really great learner is to embrace the failures, to figure it out, to keep at it—those skills determine their long-term success,” explains Cannon.

Students are also learning through collaboration and negotiating with each other, but most importantly, notes Mason, “They learn to believe in themselves and in each other. They learn that they really are capable of anything if they choose to do it and to not give up.” She continues: “Students hear from teachers that it’s okay to fail, but to put it in practice is another story. With FUSE, they learn that there really isn’t failure unless you just give up. They keep on working through the problems and being resourceful.”



South Valley students are not only applying those skills in the FUSE lab, but they're also using them in the lunch room, library, and other areas of their lives, such as state-wide coding competitions.

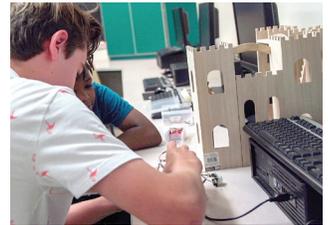
### Partnership with Siemens creates new opportunities for South Valley students

Both Cannon and Mason credit the partnership and support from Siemens for creating the perfect place for South Valley students to learn and grow. Says Mason, "Without Siemens, we would not be here. Thanks to the grant we received, we have our class right now and these kids get to do such awesome things."

She also notes that the challenges Siemens and FUSE created in partnership are some of the students' favorite experiences. With the

smart castle, for example, "Students realize that they are electrical engineers and that they're building skills that move outside the classroom, and they can do something with them. Siemens really does bring the outside world into our classroom, and that's super cool," Mason notes.

"The relationship we have with Siemens has inspired the program and the students' opportunities to do things we otherwise would never have been able to do," says Cannon. "With FUSE, we have never seen students so engaged and so excited to show you what they've done, to highlight what they've learned and even the failures they've encountered. Because of that, we look forward to continuing this partnership. Every kid should have these opportunities."



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