Project 212 | Engineering the Future

We had a small engineering class here at Ygnacio Valley High School.

All right, everyone, listen up.

My students said we want to do something more. We want to do robotics. Monday through Friday, we'll be here until 6:00, 7:00, 8:00. Saturdays are even more intense. Yes, you can say that again.

Oh my gosh, these people are just like me. They're just passionate about something. And they're going towards it.

I've always been interested in designing things and just making things. So I had to really become creative with what I had on hand.

It was really difficult coming here not knowing English. I felt out of place.

I never expected to use a computer in school because I grew up poor. Now I do all this cool stuff with robots. This room was closed for eight years.

It was a dumping ground. Unwanted old machines here, bird poop all around. That's how we started room 212 hence project 212.

Can I have the orange wrench?

Why do you keep doing this?

Because I'm crazy.

Ygnacio Valley High school is a Title I school, which means we cater to underserved community. We have students who can't afford this type of program. So when I heard about what FIRST Robotics can offer, I believed that this is something that could change the lives of students here at YV.

The problem that we have with the pit before is that all of our tools were all around the place. And when we need something, we can't find the thing that we need. That's why you guys organize it this year.

I moved here in 2015 from San Francisco del Rincon Guanajuato, Mexico. I just started seeing all of this more advanced technology. And I got inspired by it.

I was really just a shy kid. School started, they were like, we have this robotics club. Hey, that's interesting. I want to join.

In FIRST Robotics, the season starts in January. You're supposed to be building a robot that would perform certain tasks. Let's say pick up a ball and shoot the ball. And at the end, your robot needs to raise itself up on a platform. The kids are given seven weeks to eight weeks in order for them to finish that robot.

My role was to create the arm subsystem. I had to really communicate between elevator and claw to make sure like, OK, you need to be able to hold this much of my weight and of the claw's weight.

I like the testing because you get to test it until it breaks, which is really fun to me. We just go really hard with the robot. And if it breaks, it's a good thing for us because that means that we know what not to do and we also know what to change as well.

We were thinking, OK, do we want a rigid arm or a telescopic? We had to prototype as quickly as possible and get the best design going.

We have a lot of dedicated students. 75% are Hispanic, and then 40% are females. This is intentional. What we're trying to do here is balance the scales.

Coming into high school, the people that I looked up to as a kid actually told me that I couldn't go to college because I was a woman. I was really discouraged from pursuing engineering as a career. One of the things that actually Ms. Alvarico said that made me really stick to this was, I'm going to make a leader out of you.

I always encourage the kids, don't let our situation stop you from doing your best, creating your best.

Thank you all so much for being here. Hello, everyone, and welcome to the project 212 2023 robot reveal. The team worked tirelessly together to create a revolutionizing robot for competition.

With a job like this of a team's hard work in seven weeks, 4,885 hours, how can it be done without mentors? When we started this team, the mentors and I thought about, what are we doing this for? Are we doing this for winning?

For us, the learning is the number one thing. We're here to teach the kids and make sure that they learn valuable skills that they could use in life.

I had no idea how much opportunity these students have to learn not only about engineering, but marketing and communication. I was in high school many years ago. And I so wish that there was something like this.

The moment you've all been waiting for.

Listen up team. When I say 2, 1, you say 2-- 2, 1.

2.

2, 1.

2

When I say ful, you say crum.

Ful.

Crum.

Ful.

Crum.

Do you know where the robot is? It's coming?

[SIDE CONVERSATION]

Christy, it won't fit.

We really need to get a trailer.

Good morning. Good morning.

Good morning.

Happy robot day.

There's some serious, serious teams. Teams that are just way better than we are. It feels like a Coliseum like a gladiator fight. It's terrifying.

Yeah, let's keep doing that. And then let's just keep testing our shooting cube up high. Because if we can perfect backing up, hey, bro, we're godly.

Hey, guys. Can you stop working? We have a special guest here. She's an engineer, and she's here to find out more about your robot.

Tell me about your robot. What's your strategy here?

So, basically, for this game, we ended up with a West Coast drivetrain. The main pivot is right here.

Nice.

We can reach on the floor.

So can you do floor pickup of the cones.

Yeah, we can pick up anywhere.

Love it. Love it. So you can do cubes and cones.

From any position from anywhere.

How people think of a problem and how to solve it, that's what changes every robot to be unique.

So we've already said what we do. So what do you do?

Oh, what do I do? I'm the CEO of PG&E.

Oh.

OK, go get 'em. Again, again, again. Justin, Justin.

Cones, cones. Just get the cones. Let's go. Let's go. Keep going. Keep going.

Go. Go.

Charging station. Charging station.

Let's go baby. Yup, those are both completely shot.

Oh. Wow. The bolts broke and also bent.

I'm glad we got through that round then. We improved our communications definitely. That's how that game went.

Because the last one, we were just all over the place. So our autonomous code says that it won't back up because it's an emergency. And we don't know why yet. It's been doing that all day. So we're going to try to figure it out.

Excuse us, robot.

Robot

Robot.

I always tell the kids we have to do with the cards that were dealt to us. If you just believe in yourself, you guys could compete with some of the best teams out there.

I'm the first woman in my family to do engineering. Seeing other women really has inspired me to teach other people that just because you're this gender, does not mean that you have boundaries. In fact, those boundaries are invisible.

This club has actually opened my eyes to like, oh, I can actually do this.

Kids come to me with no background in robotics. They're unsure of themselves if they can even do this. But going through the program, they grow, they learn skills that could lead them to a career.

I came here with one friend. But now I'm part of this really awesome community.

Mr. Alvarico, he's not just a mentor, he's one of my friends, too. I'm this outgoing person now. I'm a leader now. He's changed that for me.

My parting words to the kids is that now that you've tasted success, now that you've seen what you're capable of doing, there's no looking back.

When I say 2-1 you say 2.

2-1,

2

2-1, 2

7-1-3-7

(SINGING) , (MUSIC)