Concurrent Technologies Corporation Engineers Support High School FIRST Robotics Team

Ziggy the Robot Gets 3D Printed Parts

Hot off a terrific performance at a FIRST Robotics regional competition, Ziggy the WestyTek robot sprung a wheel or two just weeks before world competition. CTC engineers Jim Hlivko, Mark Becker and Ken Sabo stepped in to help, applying an additive manufacturing solution to create a new part along with a few spares to send Ziggy and the team of teenagers from Westmont Hilltop High School, Johnstown, PA, off to compete.

Jim Hlivko, CTC engineer, shows his son Joe (to his immediate right) and FIRST Team members parts that were additively manufactured.

FIRST Robotics Competition's official website lists the opportunity to learn from professional engineers as a top benefit of the program, and CTC engineers saw first-hand that the WestyTek team members were serious, thoughtful learners.

"Those guys were attentive, smart and asked great questions," said Ken Sabo, Senior Director, Advanced Concepts Development. "We had the parts ready for them to finish, and they had the opportunity to tour our facility. They were ready to get to work! I think it was a good experience for the team members to see how their robot's new parts were made, but they got so much more out of their time here."

Using new 3D printing technology, each wheel became one uniform piece instead of two pieces split down the middle and screwed together. CTC made the parts beefier, heaver and thicker, and they stayed together when the robot performed.

"It's not an elegant design," said Sabo, "but it will work and be an improvement."

Teamwork, Learning and Fun

Although the team didn't win in the World FIRST Competition, their winning attitudes will take them far as they prepare for and pursue rewarding careers.

"This is just crazy," said Daniel Kevenk, one of Ziggy's handlers. "We're in high school, and we are able to engineer parts with a multi-million dollar additive manufacturing machine. It's crazy!"

Crazy in a good way!

Daniel, who is headed toward a career in aerospace engineering, says that the FIRST competitions expose you to hundreds of schools where you meet admissions people from the best colleges and universities.

David Williams, who spent all four years of high school as a FIRST team member, earned a FIRST Robotics Competition scholarship to attend Bucknell University. David says, "I've had a great time with FIRST, and it's opened up an exciting opportunity for me to attend Bucknell."

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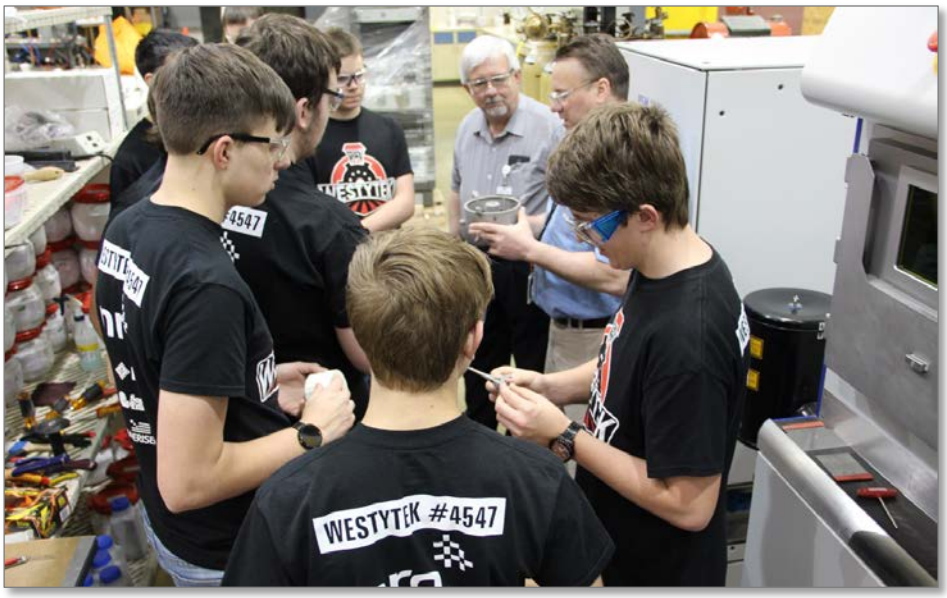
These teens are smart and all about teamwork. They're more likely to say something positive about a team member than about themselves. For instance, Daniel mentioned David's scholarship. Joe Hlivko, Jim's son, explains that the FIRST program promotes teamwork and learning because they help each other during the competition, and they help other teams as well. As robots speed across the floor, shooting balls or blocking strategic pathways, when they run into technical problems, crews from any team jump in to help. And to learn.

"I've made last minute programming changes while standing in line at a FIRST Robotics Competition," said Eric Wehner, a Westmont High School Junior (in the 2015-16 school year). "It's all stress free," he laughs with mock sarcasm and the kind of confidence you don't expect for someone his age. "I've written autonomous code for other teams who were members of our alliance in competitions to help them out. It's the kind of competition where everyone gets along and learns from each other."

They're learning life skills that extend classroom experiences and prepare them for the workplace as well as college, and CTC engineers are happy to support their journey.

By the way: The WestyTek teens named their robot Ziggy in honor of David Bowie. Maybe the generation gap isn't so wide after all!



Concurrent Technologies Corporation engineers Jim Hlivko (top) and Ken Sabo (holding round part) gave the FIRST Robotics Team a tour that highlighted the company's additive manufacturing machines.