

# Pitsco robots designed to take over education

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Tony Allen, left, and Paul Uttley, both of Pitsco Education, show off some of the robots that can be built by the new TETRIX metal building system, which is designed for use with the LEGO MINDSTORMS robotics line. The new system is getting attention around the globe.

## PITTSBURG —

Forget about the clunky metal monsters from those science fiction movies. The latest robots are learning tools that can inspire students around the world to create and achieve.

And they're coming out of Pittsburgh — from Pitsco, to be exact.

TETRIX, a metal building system with parts made of heavy-duty aircraft-grade aluminum, is designed to work with the LEGO MINDSTORMS robotics system and is the newest member to join the LEGO Education robotics continuum. Tony Allen, TETRIX program manager, explained that the LEGO system consists of plastic parts. "This is the first time that LEGO has allowed a metal component to attach to their plastic base," he said.

Attachment is made possible by a special hard point connector that allows the TETRIX pieces, including gears, plates, brackets and mounts, to be connected in a number of angles to a variety of LEGO elements.

Paul Uttley developed the patented hole pattern that makes the connections possible. "What makes TETRIX unique is that no other system allows the integration of metal and plastic," said Uttley, Pitsco Education research and development manager.

He noted that youngsters typically start working with LEGO elements in elementary school. "By the time they get to high school, this is a toy," Uttley said. "They want to move to robust, real-world materials."

With TETRIX, he said, they can do that while still using the LEGO elements that they have already mastered.

Launched in January, TETRIX started making its way into student hands during the 2008-2009 FIRST Tech Challenge, held in Atlanta at the Georgia Dome, home of the Falcons.

"The FIRST organization was founded by Dean Kamen, whose most famous invention is the

Segway,” Uttley said. “Student athletes get a great deal of recognition, and Dean started the FIRST Tech Challenge to celebrate students in science and engineering. It’s conducted just like an international sports event. Teams wear uniforms and come onto the field through the tunnel.”

Students compete for scholarships, but win some intangibles as well. “As part of coming to the competition, they make presentations to clubs and organizations at home, which takes them out into their community,” Uttley said.

They also learn to work as team members, striving toward a common goal.

Allen and Uttley travel a great deal, attending camps, visiting classrooms, working with students and with teachers, helping them to integrate robotics into their curriculum.

Uttley referred to the STEM concept — science, technology, engineering and math. “Robotics can be used to teach all those things,” he said.

He and Allen pointed out that robotics is moving more and more into various fields, including the military, medicine and agriculture. It is vital for today’s students to gain some understanding of this.

“I was at a school in Brooklyn last week, and a teacher told me there were kids in that high school who didn’t know what a pair of pliers is,” Uttley said. “I’ve heard testimonials from other teachers who told me that even their worst students turned around after the school got a robotics lab. All the students need is a spark. We aren’t training them to be robotics engineers, we want to show them something they can be successful at.”

“TETRIX will be in Asia, Europe, South Korea, Bulgaria, Romania, all over,” Allen said. “Now Pittsburg High School and Pittsburg State University will have it in their curriculums.”

The two are very proud of TETRIX, but said they can’t claim the credit for it. “The scope of this project involves a lot more than Tony and me,” Uttley said. “This involves a lot of people. We’re also constantly seeking input from teachers and students.”

A high school class in Oregon had an idea for an improvement, a reinforcing piece added to one of the TETRIX pieces. Class members made some examples and sent them in. “We checked it out, added it and are happy to give the class credit for it,” Uttley said.

Interested persons wishing additional information may visit [www.pitsco.com](http://www.pitsco.com) or [www.LEGOeducation.us](http://www.LEGOeducation.us).