Lego learning: Robotics bring science to earth

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TOMS RIVER — The Lord said we would be able to do amazing things, said Melissa Peyto.

The Grace and Peace Academy science teacher stood over students yesterday while they demonstrated their robotic skills with a set of Lego pieces, saying she never thought she would see the day she would teach children such hi-tech curriculum.

Peyto and Tom Hoffman, academy principal, and Tony Mellilo, academy technology instructor, studied at Stevens Institute of Technology in Hoboken this summer so they could spearhead a robotics program for seventh and eighth grade students at the academy.

Hoffman said the two-year program will give students an edge, teaching them technological components first hand. "They will start with a blank slate and build things from scratch," he said, adding the student-built robots must be receptive in water. "Then they will enter a final competition next year at Stevens against 36 other schools."

As a research scientist for 30 years, Hoffman said teaching technology was one of his main goals when he became the academy principal a year ago.

"This makes us the only school in the area with a pre-engineering program in a middle school," he said.

But teaching students robotics is not just about winning competitions or having Grace and Peace Academy set apart from area schools.

"It teaches them how you can use everyday materials to create and invent things. It teaches them problem solving and applications in science and math," he said. "I suppose the biggest thing is it reduces the stigma and fear often associated with math and science."

Hoffman has big plans for seventh and eighth grade academy students, noting at the end of the two-year program "they will have to create an underwater robot to move autonomously with a computer."

While working the colorful, underwater robot, student Rhea Dionora, 13, said the program is just the beginning for her.

"I would like to get into environmental engineering," Rhea said, adding the earth's present atmosphere is alarming. "I have always liked helping out the environment."

Student Kris Wmsen, 12, likes the idea of the trial and error theory offered in the pre-engineering program. "I like that you can make something yourself and test it out and work to get it better and better," he said.

If Dionora and Wmsen's interest is any indication of how the program will be received by other students, it is sure to be a success, according to Peyto.

"These guys built this in a week. I can't even begin to imagine what my students will have created by the end of the year," she said.

From the Grace and Peace Academy, Toms River, Melissa Peyto, science teacher, Rhea Dionora, 13, Tony Mellilo, technical instructor and Kris Wmsen, 12, demonstrate an underwater robot made mostly of Legos. Above, an underwater robot retrieves a ball and places it in target. Related news from the Web
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Peyto said the program covers all aspects of science with the benefit of a hands-on experience. "They are learning laws of gravity and buoyancy while using their motor skills," she said, adding, "It is a fun way of learning instead of them just reading about it in a science book."

Peyto described the endless possibilities robotics has to offer in the world today. She said while scientists are controlling data-collecting robots in space via computer, her students too will learn skills to help change the future, one Lego at a time.