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Robo-helpers: Students design and buil Lego robots to assist disabled

By **Tyler B. Reed**/ Daily News Staff

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FRAMINGHAM -- They called it "robo-rod."

Their invention -- the first of its kind -- was a small cane designed to help blind people safely navigate across streets and on sidewalks. A light sensor installed at the tip could detect the shadow cast off the edge of a curb, triggering a beep that would sound as long as it remained in the .

"If the cane finds the light again, you'll know that you're around it," said 12-year-old Caxton Jones, one of the designers.

Jones and two of his peers -- Jeremy White, 11, and Josh Vazquez, 13 -- built the cane out of Legos this week in the gymnasium of the McAuliffe Regional Charter Public School on Clinton Street.

The "robo-rod" was one of more than a dozen gadgets middle schoolers built during a weeklong summer program sponsored by Northeastern University at the charter school. The robot building camp, which drew kids from several MetroWest towns, was meant to pique their interest in science and engineering, fields where educated workers are in short supply.

"This is all about changing attitudes," said Mary Liscombe, assistant director of the Christa McAuliffe Center at Framingham State College, which partnered with Northeastern on the project.

The students were given the task of solving common problems for people with disabilities. They had to build a device using Legos, sensors and wires, then use a computer program to make it operate.

Two students -- Greg Allen, 13, and Darius Sanders, 11 -- built a tiny Lego-sized window that opened and shut with just the press of a button. Allen said he wanted to build something to help people who are paralyzed or otherwise could not open windows.

"My grandmother has to have this special crank thing for her windows," he said.

Three others -- Gabriela Kabiite, 13, Yasmin Willis, 12, and Kala Dawkins, 11 -- built an automated bottle opener. They placed a small bottle of water on a wheel that spun in a circle while long Legos held the cap steady. They were thinking of adding a spoon to serve as a mixer.

Teachers from as far away as Carver came to observe and learn how to bring innovative teaching techniques back to their classrooms.

"They're learning and we're learning at the same time. It's a synergy," said Rodney Ward, a charter school math and science teacher who was in charge of the event. "Part of our job now is to set up after school programs on engineering and robotics,"

Randy August, a Northeastern professor who helps oversee the grant program, said "there's never enough" fun science programs like these for kids.

The event wraps up today, when the students will present their products.

(Tyler B. Reed can be reached at 508-626-4423 or treed@cnc.com.)



Josh Vazquez, Caxton Jones and Jeremy White show off their 'Robo Red' during a program at the McAuliffe Charter School. (Allan Jung photo)

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