

Students get revved up over Lego robots

By Bill Henley
The Post and Courier
Thursday, January 29, 2009

While classmates have been blowing off steam at recess, several DuBose Middle School eighth-graders have been poring over the problem of moving a polar bear with their robot.

Photo Gallery

First Lego League Robotics Competition

Regional competition for the First Lego League program, which was established in 1998 by Dean Kamen, an entrepreneur and inventor, and Kjeld Kirk Kristiansen, then-president and CEO of Lego, will take place Saturday at Trident Technical College. This year's theme is Climate Connections. Watch Lowcountry students prepare and test their robots.



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Almost since the beginning of the school year, five eighth-graders have brought their lunches to Craig Pelletier's pre-engineering classroom to participate in the First Lego League robotics program. The students, and teams from Knightsville and Newington elementary schools and Rollings Middle School of the Arts, have used Lego pieces to build programmable robots to solve as many of the 18 tasks set before them as they can.

"It gets the kids excited about what they're doing, and it's geared toward their level. It gives them something to look forward to," said Pelletier, who is in his eighth year as a coach and is guiding not only the eighth-graders but a seventh-grade team as well.

Joe Mitchell, an eighth-grader who wants to be an engineer, has looked forward to joining the team since he was in the sixth grade.

"I think it's really good because it gives kids an opportunity to get experience with engineering, and it shows Legos aren't just toys," he said.

Rollings Middle eighth-grader Ryan Becwar had a similar view.

"I'm interested in engineering and science and robotics. Sometimes the school-level science is dull, and I thought I'd enjoy this," he said.

The First Lego League program was established in 1998 by Dean Kamen, an entrepreneur and inventor, and Kjeld Kirk Kristiansen, then-president and CEO of Lego, as a way to inspire young people to become interested in science and innovation. The program has evolved into an international activity for students ages 9-14.



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Hilda Chan, an eighth-grader at Rollings Middle School of the Arts, and seventh-grader Neil Monga download a program to their robot.

Each year, the league chooses a theme, such as this year's Climate Connections. Past themes have included nanotechnology, energy resources and a mission to Mars.

A competition board based on the theme is created where teams get 2 1/2 minutes to perform as many scoring tasks as they can. Teams spend three to four months building and programming their robots to perform their tasks at competition.

The regional competition will take place Saturday at Trident Technical College, where teams will try to earn a spot at the state event in Clemson.

"If it was left up to me, I'd love to have a team in every school in the district," said Janice Jolly, career development coordinator for Dorchester County School District 2.



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There are several hurdles in establishing a team. One is being able to have a faculty member as the coach. Beech Hill Elementary School qualified for the state competition last year, but the teacher who ran the school's program got another job within the district, and nobody else was available to take it over. Having a place for the team to meet and store its equipment also gets tricky. Lucia Dantzler at Rollings Middle reorganizes her classroom on meeting days to clear room for the 4-by-8-foot mission board. The Knightsville Elementary team rolls its mission mat into the school's hallway near the computer lab.



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Under the guidance of coach Debbie Polk (far right), the Newington Elementary School robotics team tries to work out a problem with one of the missions on the First Lego League competition board. Team members (from left) Michael idenour, Sarah Wedderspoon, John Feathers and Jackson Trigiani have been working on their robot and research project for the past four months to get ready for the regional competition Saturday at Trident Technical College.

Time and money are the other two considerations. Time is probably the biggest issue in finding a faculty member who can be available to help. As for money, Jolly said it costs the district an average of \$1,000 per team depending on how many qualify for the state competition and how much accommodations are at the time. She said a new team can run around \$1,250 when the cost of materials is figured in. She said awareness in the community is easing that burden.

"Several companies have earmarked money for elementary and middle school programs," she said.

Dantzler, who is in her fifth year with the Rollings team, said she'd like to see robotics added to general studies as an elective.

"I think this is a worthy project that every school should have for its curriculum," she said. "I think it's important, but it's hard to do after school. I know we've spent at least 80 hours on it."

Building a robot or working with something mechanical is the most obvious attraction for the students. But once in the program, they find it's about more than that. Each year, teams are asked to perform a research project based on the theme and then give a presentation at the competition.

The teams can be as creative as they want with their projects and presentations. It almost sounds like a bait-and-switch for getting students involved, but the teachers have found that their teams embrace the research.



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The First Lego League robotics competition will take place Jan. 31 at Trident Technical College as teams of elementary and middle school students prepare to present research projects and put their creations to the test on the competition mission board. This robot, which is trying to activate levers on a house, was created by C4, the DuBose Middle School eighth-grade team.

"Usually, the kids who gravitate toward this don't mind it too much. They see it as a challenge," Pelletier said.

Eighth-grader Ashani Ranwala is in her third year on the Rollings team and said the research is her favorite part.

"You get to be creative. Even though you have guidelines, you get to do what you want," she said. "And it's competitive, which makes you want to do better and strive to do your best."

At the competition, the teams will be graded in four categories: their research presentations, technological expertise with their robots, teamwork and the scores they get on the mission board. One of the tenets of the program is that the adults are there to guide but should be involved as little as possible in the work. One of the goals is to help students learn how to make their own decisions and work in a group.

"I think the overall goal is to instill the spirit of being challenged and teamwork. They don't fight; they discuss," Knightsville teacher Michael O'Neill said. "I love it — the sportsmanship it's instilled. They've become an excellent team. They love working with each other."

The other goal is to allow the students to take ownership of their work.

"I enjoy watching their faces light up when they realize they've done something right," said Newington coach Debbie Polk.