

Penfield Post

The art of creating a ‘Thunderplucker’



Shauna Richards, a Penfield High School junior, wheels part of her team's robot into position before the start of the match, as seen through the hole in the "out post" where teammates throw balls into the match. Penfield's team is called Rolling Thunder 1511.

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Penfield, N.Y. —

As his fellow students worked on their gleaming robot, “Thunderplucker,” last week, Alex Wolf pointed to several pulleys that gleamed up and down its tall side.

“I designed these pulleys by computer,” the 14-year-old said, with a hint of pride. He then joined other members of Penfield High’s Rolling Thunder FIRST Robotics Team 1511 in putting the finishing touches on their machine. They plan to match their creation against nearly 50 other robots in the Finger Lakes Regional FIRST Robotics Competition for high school students in early March at the Rochester Institute of Technology.

According to its Web site, FIRST, which stands for “For Inspiration and Recognition of Science and Technology,” is a not-for-profit organization that seeks to foster a love of science and technology amongst students worldwide. Students can gain scientific, engineering and technical skills; leadership

skills and experience in working in a team through competing in FIRST robotic contests. There are annual competitions for kids as young as 6.

The 2009 FIRST Robotics Competition started in January, when high school teams were allowed to buy a kit consisting of the basic parts of a robot, and a description of the tasks it must be able to perform. This year, according to Wolf, the robots have to run around picking up balls and throw them into their opponent's hoppers, while preventing opponents from doing the same.

The teams buy the kits, design and make the additional parts their robots need, and assemble them into what they hope will be working machines.

Each robot approaches the same tasks differently and, though the robots have the same chassis, they're often very different. Wolf said that Thunderplucker takes its name from the plucking motions by which it picks up balls.

The teams work under the guidance of engineers, machinists and other technically proficient adult volunteers, according to Penfield High technology teacher Eric Brewer. The Rochester-based Harris RF Communications has sponsored Thunder Rolling for several years, helping pay its costs and allowing its engineers and other personnel to help guide the team. Even with their help, the project presents challenges.

"A lot of trouble came when we were trying to get a lot of parts made," said Kim Eckhardt, a systems engineer who leads the 15 Harris RF employees who are helping Team Thunder this year. "The kids had to do quite a lot of work."

This year, the team has taken on the additional job of mentoring the robotics team from Rochester's Thomas Jefferson High School while it puts together a robot for its first regional competition. The work has brought together kids from different backgrounds over shared interests.

"Something as cold and impersonal as a robot has really created some warm and personal relationships," said Jefferson High math teacher Michael Emmerling, one of the advisers for the school's team. "Our kids love coming to Penfield."

Eckhardt said Rolling Thunder's 31 members worked feverishly to prepare their creation throughout last week. On Monday night, it was to take the field in the Rochester Rally, a non-FIRST competition involving about 12 local schools.

"This is a local competition that Penfield High sponsors for local teams," Brewer said. On March 5, Thunderpucker is slated to take on its first opponents in the Finger Lakes Regional at Rochester Institute of Technology.