

A-B students start robotics team

By Becki Harrington-Davis

Fri Nov 27, 2009, 08:57 AM EST

Acton, Mass. - Surrounded by hundreds of Lego and aluminum TETRIX robot parts and five buzzing laptops, spread out on a table, Prateek Sahay pontificated about the freedom of writing codes that bring machines to life.

Sahay was one of 10 students split into groups on a recent afternoon at a parent's house, busily sketching designs on a whiteboard, assembling tiny mechanical parts and testing the remote control function of the robot they hoped would bring victory.

The new Acton-Boxborough Robotics Team, started by high school juniors Sahay and Naman Bharadwaj, met for the third time Nov. 19 in preparation for the For Inspiration and Recognition of Science and Technology (FIRST) competition in February.



Orlando Claffey/Wicked Local staff photo
Clark Jacobson and his team design the structure of their robot Thursday.



Orlando Claffey/Wicked Local staff photo
Many spare parts sit ready to be used as Aditya Yadavalli works on building a program for their robot.

The goal of the team is to build an 18-inch robot capable of remote control and autonomous function that can outperform others in the competition game, Hot Shots.

In the game, the robot must scoop up Wiffle balls from the playing field and place them in high and low goals, Sahay said. The robot must perform autonomously for the first 30 seconds, by sensing infrared lights on the goals.

Then, the team will drive the robot using remote control while battling three other robots to gain the most points.

The team is still working on the basic design, Sahay said, but he imagines it will use a rotating disc with an infrared sensor on top, and feature a lifting arm with a scoop.

He also plans to emblaze the robot with the team's logo: the acronym "A.B.R." with gears.

The robot will use a programming language, Robot-C, which the students are attempting to learn. While Sahay admitted he knows little about programming, Bharadwaj has a knack for it.

Best friends Sahay and Bharadwaj have always been interested in science, they said. When they heard of the robotics competition, "we just got into it," Sahay said.

Because Sahay and Bharadwaj could not find a permanent faculty advisor to sponsor the team, the group is not yet an official school club. The 10-member team currently meets in Sahay's basement and is assisted by science teacher Brian Dempsey as well as Rakesh Keshwani from SolidWorks in Concord. Sahay acts as the unofficial project manager of the group, giving assignments to each team member and coordinating their efforts.

Vyassa Baratham, a friend of Sahay and Bharadwaj, joined the team because he was interested in engineering and wanted to learn about programming, he said. As he powered up the software on his laptop, he said he is most looking forward to the moment of winning the competition.



Orlando Claffey/Wicked Local staff photo
Vyassa Baratham happily scoops up his team's robot after a successful test of its front sensor.

Sahay's mother, Sunanda, is a member of the Acton-Boxborough Parent Involvement Project (PIP). PIP has supported the team financially, she said, and helped launch the group with a booth at the recent Discover STEM "reverse science fair." PIP purchased the robotics kit necessary for the competition, and the team is selling HEXBUG mini robots to help cover their additional costs. The various HEXBUG toys are programmed to run away from loud noises, seek darkness, and move via remote control, Sahay said, and sell for \$10-\$20 each.

The robotics team is a valuable, educational experience, Sunanda said.

"It teaches kids how to handle situations," she said. "These are serious, motivated, dedicated kids. I learned that they can plan and that I can trust them."