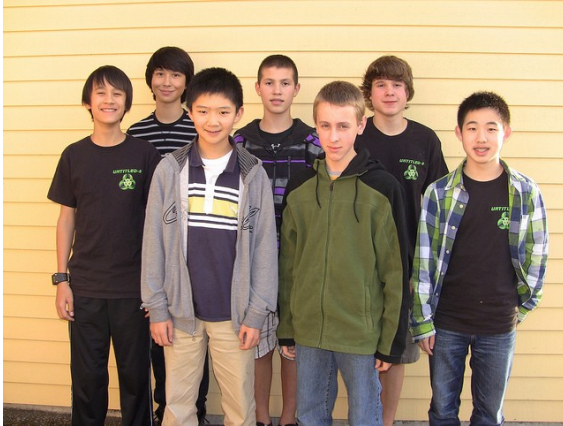


THE TEAM

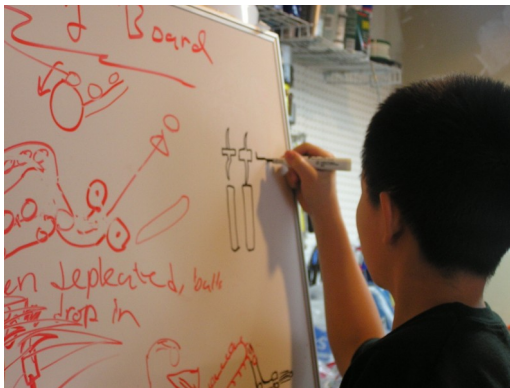


Untitled-8 Robotics Team

Front from left: Sean, James, Andrew, Nathan, Aaron, Ben, and Vincent

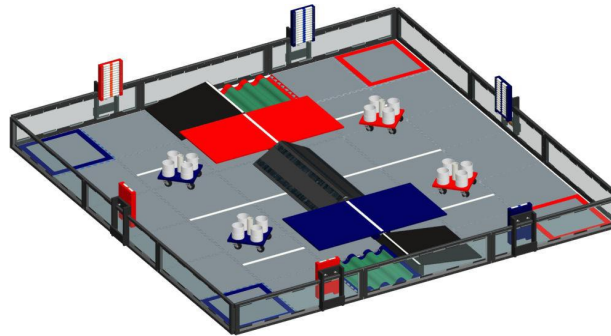
TEAM BRAINSTORMING

Before ideas can take form, they usually require discussion to pool all the options. Before we ever build anything, we brainstorm as a team or as subgroups. We often use a "Brainstorming Board". This helps to efficiently clarify concepts and all team members can contribute.



THE CHALLENGE

The robot operates in both autonomous and remote manual control modes to collect PVC batons within a 12x12 foot arena. These must be delivered into specialized target areas for points within 2.5 minutes. See website below for more information.



<http://www.usfirst.org/roboticsprograms/ftc/>

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UNTITLED-8

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<http://untitled8.org/>

FTC— FIRST Tech Challenge
Advanced Robotics Team



FTC
FIRST Tech Challenge



Lakeridge High school
Lake Oswego, OR

WHAT WE'RE LEARNING

1. C-code programming
2. Friendship
3. Knowledge
4. Team work
5. Leadership
6. Experience
7. Hands-on construction
8. Shop tool usage
9. Proficient Brainstorming
10. Research and testing skills
11. Communication
12. Community Sharing
13. Mechanical Engineering
14. Problem Solving
15. Cooperation
16. Sportsmanship
17. Gracious Professionalism
18. Tool safety
19. Marketing
20. Time and Money Management

COLLABORATION WITH OTHER TEAMS

Throughout the season, we collaborated with several teams including the Flaming Chickens, the Lake Monsters (both FRC teams), and an FTC team from Shanghai. The FRC challenge includes having a separate TETRIX robot do a task, so we consulted with the FRC teams and donated extra parts to them. To the Shanghai team, we gave lots of technical advice.



ROBOT OVERVIEW

Our robot is designed with a robust chassis with four high-torque DC motors geared for speed to deliver maximum field performance. The steering technique circumvents typical skid steer problems by placement of the drive wheels near the center of gravity of the robot. It can turn a full 360 degrees in the same spot. Multiple other wheels are implemented to ensure balance and support. To meet the challenging **Get Over It!** game requirements, our robot is composed of three main parts. The first stage can efficiently capture multiple batons with a specialized rotating belt. The second stage stores the batons in a straw dispenser-like bin. Gravity feed delivers the batons to the third stage, the baton scoring ramp. This is composed of aluminum sheeting that telescopes out for efficient baton delivery. This is accompanied with an aiming mechanism at the end of the ramp, which guides the batons into the tubes of the moving goal. Servo motors are leveraged to move the ramp to line up with the position of the moving goal.



TEAM GOALS

Engineering:

We decided to join the FTC (First Tech Challenge) competition to learn more about advanced robotics, develop hands-on mechanical construction and engineering skills. It also allowed us to learn project and time management.

Local Community:

While we have always adopted a “EE” philosophy (Encourage & Educate) to make a difference in our community, but this year we connected with our community in a way that will leave a legacy and a lasting impression for years to come. Our goal this year was to raise funds for an underprivileged elementary school so that kids who would normally not have a chance would be able to experience the fun of science and technology. We organized fundraiser events in our local community in order to aid our efforts.

FTC Community:

In the spirit of gracious professionalism, we would like to help other teams with any technical issues that they may have. Our goal was to enrich the FTC experience for other teams.

Core Values:

Our goals are to implement the FIRST core values into our everyday lives.

- We are a team
- We honor the spirit of friendly competition
- We share our experiences with others