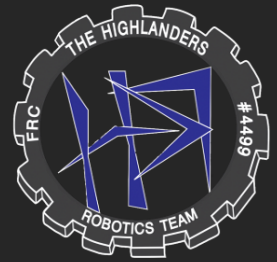


Kick-off Mayhem!

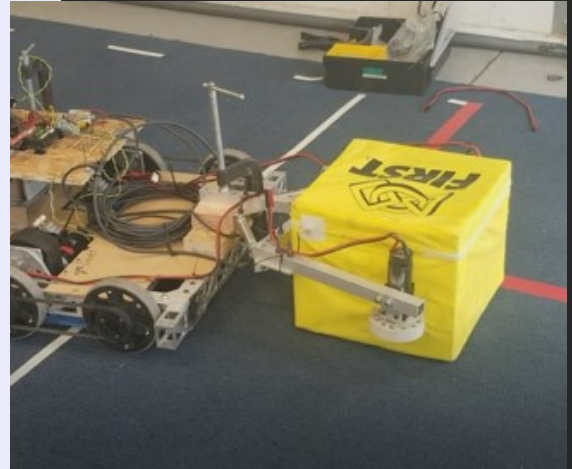
The Cyber Cycle



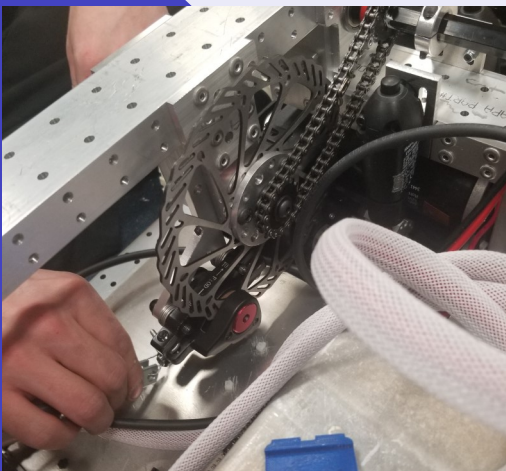
The Highlanders are hard at work preparing for their first tournament. Following kick-off, the entire team came together for a brainstorming session. Team members, alumni, and coaches pitched in ideas, ranging from strategy to speculation of what types of robots would be out on the field. After hours of deliberation, Highlanders began prototyping. One team went off to test an elevator arm while another tested a pneumatic gripping solution for the power cubes!

The team settled on creating a robot that would perform well on the switch and vault. They created an arm that could flip 180 degrees over the robot while carrying a cube. They hoped to use their speed to their advantage.

Two teams began prototyping for the cube retrieval solution, one used pneumatics to hold onto the cube while



the other used wheels to pull it in a square. The two teams decided to merge their ideas, attaching wheels to the end of the square and using pneumatics to articulate the sides. The combined solution allowed for the robot to securely hold in the cube but have leeway while grabbing the cube.



The team decided to use a bicycle break to help control the arm. Using a pneumatic cylinder, the break disengages while the arm is in motion and locks when the driver stops moving it. This allows for greater precision when grabbing power cubes and the team is loving it!



Throwback to the Off-Season

Reflecting back on the off season, the Highlanders participated in many events, pursuing their mission of spreading STEM to the youth.



Summer STEM Camps

This summer Highlanders ran a Lego and a Jr. Lego Robotics Summer Camp. Students completed different challenges every day, ranging from creating a self-driving robot (with the help from an ultrasonic sensor) to using gears as a way to power wheels. Highlanders joined small groups of kids, guiding them when they wanted help. Our CAD team leader, Andrew Price, enjoyed seeing the children's creative process.



Shepardson STEM Night

Highlanders went to Shepardson Elementary to demonstrate our 2016 robot Magnetar on Shepardson's annual STEM night. Children were fascinated by the catapult and ball retrieval mechanism. Magnetar played catch with elementary schoolers, launching the

dodgeball and pulling it back in! Members spoke with parents about opportunities in STEM and FIRST. Cooper Ward, our electronics team lead, enjoyed the experience and looks forward to coming back next year, as he had a fun time.





FLL Mentoring

Highlanders are active in their communities and mentoring FLL teams is a way many members give back. Nela Mohan mentors a team at our local Boys and Girls club. She loves to work with these children because of their wonder and devotion to STEM. She finds every child has their own unique story and has developed a new perspective on youth in her community.

Jocelyn Holman mentors two FLL teams at her former elementary school. She has fun guiding them throughout the season and seeing them grow, not only as engineers but as individuals.



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