



Loveland Robotics

October 2018 Edition

A Summer filled with laughter,
learning, and STEM



What is Loveland Robotics?

Loveland Robotics is a flourishing program within Loveland Schools that enables kids of all ages to get involved and learn about STEM. There are two high school FTC robotics teams, The Bionic Tigers (Team 10464) and Nuts and Bolts (Team 5040). Both of these teams compete in an annual game held by *FIRST* Robotics. Within the past few years, Team 10464 and 5040 have succeeded in a variety of different areas. Both teams have made it to the State Championship in Ohio, and Team 5040 even has made it to the World Championship the past two years in a row. However, throughout their season they are not just building and programming robots. These teams also raise funds for their entire budget for things such as parts, electronics, and hosting outreach events for the community.

Connecting with Engineers in all Areas

During the summer, The Bionic Tigers had the opportunity to take tours of various production companies across the tri-state area. In July, 10464 and 5040 toured Toyota's largest manufacturing plant in North America at Georgetown, Kentucky. At the plant, the teams were first brought into a room where they viewed an informational video regarding the history of Toyota, the factory, and the impact of the factory on the Georgetown, Kentucky area. Once the video was over, Toyota brought the teams onto a



small trolley where they received an up-close internal view of the factory and its various pieces of machinery. Throughout the tour, the teams were able to learn about the interesting processes of developing and manufacturing automobiles. Then in August, The Bionic Tigers were given a tour of the food manufacturing company, Sugar Creek, at their packaging production facility in Cambridge City, Indiana. One of their mentors, Mr. McKenzie, lead the tour and gave an abundance of information about the plant and their processes. The team members also learned how what they were learning within robotics directly applies to mass production in industry.

In September, The Bionic Tigers received a tour from P&G at their Lima plant. P&G Lima was celebrating their 50th-year anniversary of the plant opening and was offering tours to groups. At the plant, the team got to see the numerous types of machinery that the company uses for day to day operations of manufacturing and packaging products. Also during the tour, the team saw how autonomous robots are used in mass scale production by the robots placing and retrieving various materials. On Columbus Day, The Bionic Tigers were given a tour of the West Chester P&G Innovation Labs. At the labs, the team members had the ability to see new innovations that P&G created, the processes, and reasoning behind them.



STEM Robotics Camp

This past summer, in July, Loveland Middle School hosted a STEM camp where children from all over the Cincinnati area signed up to participate in STEM robotics activities for a whole week. The camp provided VEX kits for the kids to assemble and train for the specific task that the mentors provided. After making the standard kit for the robot, the kids then received additional parts to customize the robot for the competition. These kids learned crucial robotics skills such as prototyping, robot driving, and adaptation. In addition to learning these skills, the kids were also exposed to the FTC Robotics program, hopefully influencing their extracurricular activity choices later on in their high school careers. The camp also provided a higher level program for people already familiarized with VEX for them to practice for the upcoming season. Many students from The Bionic Tigers Team 10464 decided to volunteer for this event and help the kids learn the basics of robotics. Whenever the kids had an issue or question about a certain process or concept they would come to the volunteering team members and ask for advice or help. These team members had a fantastic time working with the kids and guiding them through their learning process.



FLL Jr. Robotics: The Windy Hollow Innovators

Team 5040 reached out to a newly formed FLL Jr. team, the Windy Hollow Innovators to mentor and help them throughout this year's season. We send team members to their practices most Thursdays and help them out with their designing and ideas. Along with helping the kids to complete the FLL Jr. challenge, we also can share what FIRST is like at a higher level of competition, and encourage them to stay involved because they might be able to participate in the higher levels eventually. They also learn about how working together and coming up with ideas is crucial to the higher levels and impacts the team immensely. These kids are new to STEM and FIRST, so it's great to see them grow as they go through the learning process.

The kids also have a ton of enthusiasm, which is really great to see. At such a young age, kids don't need to be taught how to be creative: They innovate and test all on their own, thinking that it's fun. If you introduce STEM concepts to them at that age, it sets them up for a lifetime of learning and achievement.

Connecting With the Community 2018

The Bionic Tigers had a busy summer with an abundance of different outreach events. On May 15th, members from The Bionic Tigers went to the Dayton HAMvention, an amateur radio convention held at the Greene County Fairgrounds. At the event, they shared a booth with another FTC team, DRSS Enterprise from Dayton. Both of the teams were able to share with people from all across the world what *FIRST* Robotics is and provide an outlet to get involved. Then in the following month, on June 16th, the team held a water station at the Loveland Amazing Charity Race. While hosting the event, the team was able to connect with people throughout the community, even their own superintendent, running the race. Later that month, the team went to The Dayton Air Show. While at the air show, the team had a booth where they displayed their robot and discussed their season alongside other FRC and FLL teams.

Then in the following month, Loveland FTC team 5040 and 10464 were invited by the Little Miami River Chamber of Commerce to have a station at the City of Loveland 4th of July Celebration. At the festival, the two teams directly connected with the members of their community and were able to direct interested families to programs within FIRST. Later that month, 5040 and 10464 were invited by P&G to host a station at P&G's



annual Take Your Child To Work Day. The teams had a room where they had three stations, an NXT programming, robot driving, and a VEX claw-bot cone stacking game. During the day, members from both teams were able to teach many children from all around Cincinnati about what robotics is. The team also was also able to connect with many professionals and receive feedback on their designs for this upcoming season.

Ending the summer, 10464 went to Columbus for the Ohio State Fair. At the fair, the team had a booth in the Lausche building, a building that showcases STEM education for youth. Throughout the whole day, the team was able to teach youth from all across Ohio about FIRST and what the team accomplishes every season. The team won the "2018



Best Technology Exhibit" award from the Ohio Technology & Engineering Educators Association for their remarkable booth.

Richard Allen Academy

Richard Allen Academy is an elementary school in the Cincinnati area that Team 5040 has started a STEM club at. Every month, we come in after school and teach club members about a STEM concept. For example, in the first session we taught the kids all about the design process. It is a great opportunity to get kids started young on STEM concepts, and also a ton of fun for the team members who volunteer for it. Richard Allen greatly appreciates the team helping the kids. The kids love working together to create and discuss ideas and enjoy the challenge. These kids would've never been able to experience this because of lack of resources, and it gave them the opportunity to collaborate with other kids and make new friends.

Dayton Maker Fair and United States Air Force Museum

Team 5040 participated in the Dayton Maker Faire, a 2-day event from August 4th to August 5th. We had an opportunity to show FIRST to many people already interested in STEM and participate in a scrimmage put on by Team 5029, the Power Stackers. We used our robot from Relic Recovery at the scrimmage, and this was the last time it was put on a competition field; it was disassembled soon after. The team had a great time showing off our previous year's robot and meeting people.



Team 5040 also attended the United States Air Force Museum STEM day at Wright Patterson Air Force Base. It was a great opportunity to reach out to a large group of people, with the museum having an average daily attendance of around 2000 people. We brought our tile runner, omnibot, and old competition robot, which we did not run as it was non-functional at the time. We got to talk to a lot of families about possibly getting their kids involved in *FIRST*.

Symmes Library Summer Robotics Expo

Over the summer, The Bionic Tigers reached out to the Symmes Branch Public Library to see if they could possibly host a robotics expo for kids in the area to learn about STEM and *FIRST* Robotics. The team emailed the library manager and set up an in-person meeting to go over all the details and possible dates for the event. Once the meeting had ended, the team and Library had decided that they would host three different sessions over the summer; July 7th, July 14th, and August 11th from 12pm-4pm. Soon after the team began to advertise, the community started to get excited about these fun and educational experiences.

From the beginning of the idea of the event, the team knew that they wanted the event to encompass all of the aspects of robotics. So they created stations relating to different aspects of robotics. One station of the first event was lego free building. At the station, kids were challenged to build whatever they could think of, similar to the building process of creating robots. Another station at the event was the Snap Circuits. The station was meant for kids to understand the complex process of wiring in a fun simpler form. Another activity at the event was the following the line game. This activity was to show how autonomous activity works in programming. Also at the open house, there was the robot coloring activity where kids come color in their own robot and a driving station where kids could drive the team's outreach robots.

After the first library open house, The Bionic Tigers decided to change one of the stations based on the skill level of the children that attended the first open house. They kept the snap circuit station because it allowed the kids to challenge themselves



and had the ability for kids of all skill levels to enjoy. They also continued running robots and allowing the kids to build with legos because it allowed the children to use the design process. They decided to keep the robot drawing station because it allowed the younger children that attended to have a relaxing, and fun activity to complete, especially if they are too young to enjoy the complexity of the other activities. The station that changed from the first to the second open house was the 'follow the line' game to programming NXT robots to a line. The Bionic Tigers switched the activity because programming with NXT robots challenged the kids, while the 'follow the line' game seemed too easy. The events were fantastic, and The Bionic Tigers had many people return to more than one of the open house events they hosted that summer.

Loveland Robotics is excited to start their upcoming season for the 2018-2019 year. Be sure to see our next upcoming newsletters for information about fundraisers, competition dates, and much more. Our competition schedule can also be found on the Loveland Robotics website.

Loveland Robotics would also like to Thank their Sponsors!

