RoboVikes Robotics Club—LaBrae Local Schools

THE

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!!!2018 NEOREP Champions!!!

LaBrae High School — Back to Back to Back Champions!

This year marked the twenty-first annual Northeast Ohio Robotics Education Program (NEOREP) competition and featured twenty nine teams represented by eighteen schools. This year, our middle school team was led by 8th graders Riley and Sam while the remaining five students were rookie 7th graders that all plan to return for the 2018-2019 season. We had twenty students on the high school squad this year, so the decision was made to divide the team up evenly into two separate teams, designated LaBrae Red and LaBrae Gray.

The theme this year was *Mission to Mars* and featured five events; Vehicle Design, a Technical Journal, Team Presentations, and two floor games. Game 1 consisted of the robot beginning in the Start Zone and traveling through a maze, ending in the Mars Landing Zone, Game 2 dictated that robots had to deliver a flag to the Mars Landing Zone then pick up and deliver a rock to the Mars Lab Zone, and finally Game 3 delivered the same flag to the Mars Landing Zone followed by the robots then firing six ping pong balls through a 12" hoop on the opposite side of the game board. Middle School teams were assigned Games 1 & 2, the high school competed in Games 2 & 3.

This was by and far the most challenging NEOREP competition we've been to in our four year tenure. Looking back, I realize many of the difficulties we had on the high school teams were related to programming issues. The inconsistencies in sensor readings plagued our team once again this year, leading us to pursue an alternate programming software to be used in the 2018-2019 season.

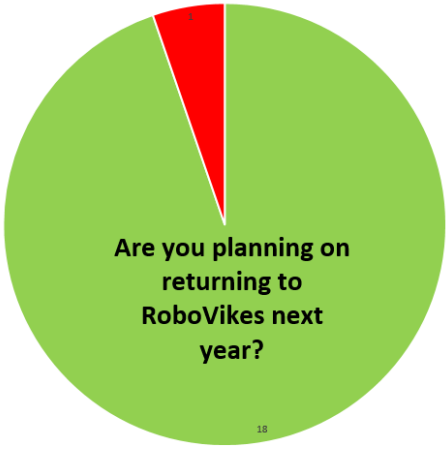
While the competition presented its own set of challenges, outside factors like team members not being able to attend practice due to other commitments also caused a few headaches for the teams. Coach Farone and I have spoken extensively about these topics and feel that our proposed solutions will be far more beneficial for the RoboVikes as the program continues to thrive.

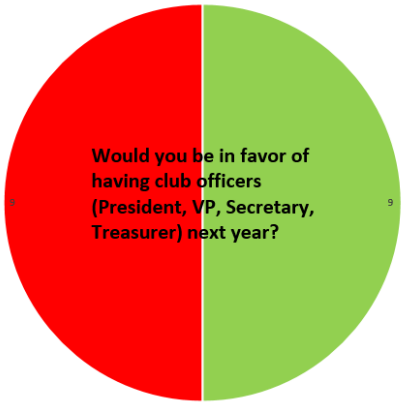
I am extremely proud to announce that of the sixteen high school teams competing, LaBrae earned 1st and 2nd places overall! Below are the complete results from the competition.

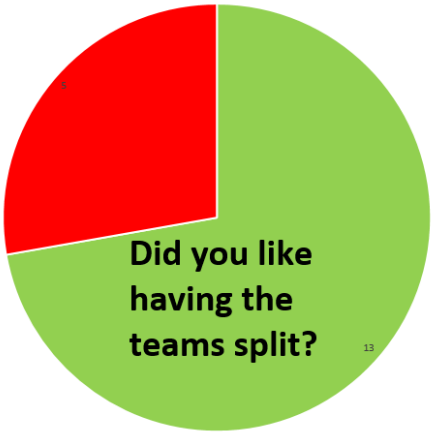
LaBrae Middle School
Best Robot Design — 1st place

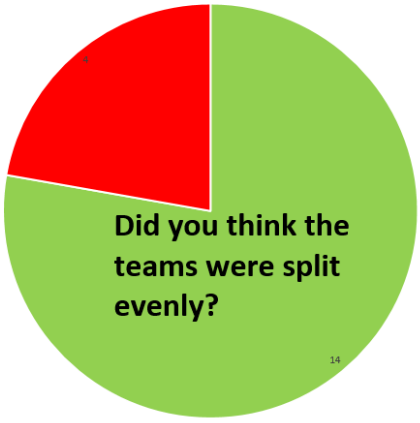
LaBrae HS Gray Team
Best Technical Journal – 1st place
Best Robot Design – 3rd place
Game #2 – 2nd place
Game #3 – 2nd place
Overall Team Score – 1st place

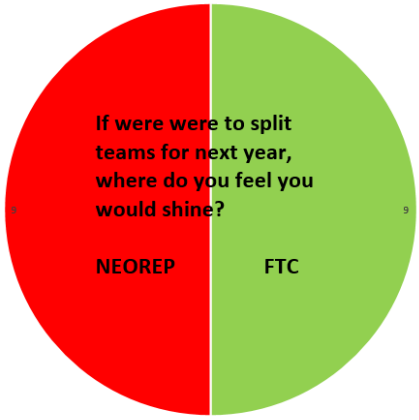
LaBrae HS Red Team
Best Technical Journal – 3rd place
Best Presentation – 3rd place
Game #2 – 3rd place
Game #3 – 3rd place
Overall Team Score – 2nd place

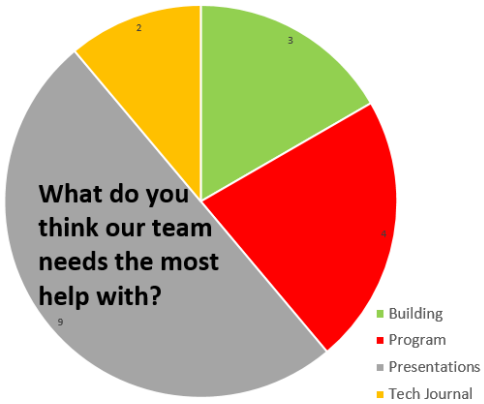


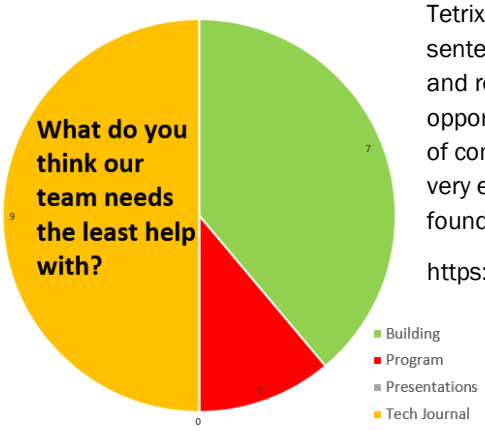












Following the NEOREP competition, we like to survey the students to not only help plan for the next season, but to find out what the team members thought of their performance individually and as a group.

To the left are some of the results we found interesting. It should be noted that only nineteen of the twenty team members were polled (one young man was absent) and that if a student selected that they would not be returning the next year, that was the end of their survey. We were very excited to see that nearly all students are returning next year!

We were unsure about having two teams competing at the same competition this year. While it paid off for us, a few of the students did not like the idea of being split. We believe the NEOREP completion is a great introduction for students to see what robotic competitions entail and is a perfect choice for our program. Our plans for the future are to continue taking the junior high team to this competition as well as a high school team. Our HS NEOREP team will be comprised of leaders among those that feel their skills are best utilized using the Lego building solution to solve challenges. Those selected for the NEOREP team will be expected to be role models to not only their peers but to the MS team as well.

High school students that feel they are ready to advance to the next level of building and programming will be invited to apply to be on the FIRST Tech Challenge (FTC) team. These students will be leaders among leaders and will compete using text-based programming and the aluminum Tetrix Max kits to solve challenges as presented by FIRST. Scoring well at the local and regional events allows students the opportunity to advance to a national level of competition. These competitions are very exciting! More information can be found at:

https://www.firstinspires.org/robotics/ftc

FIRST TECH CHALLENGE

Below are student responses to some student responses to the questions from the end of the season survey.

I think the best part of the competition this year was the experience of working together and learning how to solve complex problems in the Mars Mission challenge with small simple machines combined into a programmable robot. The downside was having to simplify down a lot due to not enough resources (Lego bricks, sensors, and motors). Even though the challenge was amped up this year, I feel like we are hitting a plateau. We've won NEOREP the last three years in a row and I feel like that particular competition might be getting less interesting. I am excited to have the opportunity to be one of the first on the team that is moving forward with the new competition next year.
-Troy B., 10th grade

If someone wanted to join RoboVikes, I would say to them "Not only do we play with Legos, but we also learn how to program a robot and compete. We would love to have join us!"

-Mallory C., 9th grade

While preparing for the competition, I was ecstatic to see how much my wealth of knowledge flourished. I couldn't believe how much I had learned and how much it would help me in my future career. Instead of dreading going to my classes, I began entering with an eager attitude, realizing how much it would help me in RoboVikes. There is no other club like RoboVikes in our school, and I am proud to be a member of it.

-Noah J., 10th grade

The experience of creating something to solve a problem is great. Solving a problem with your own hands and with the help of close friends is one of the best experiences I've had and I would recommend it to everyone. I enjoy RoboVikes and I had a great time developing our robot and refining our technical journal.

-Brandon F., 9th grade

If my friends wanted to join RoboVikes, I'd tell them to come and try it out. The competitions are a lot of fun and once you learn the basics of programming and building with Legos, it's even better. Come channel your inner kid and try it out.! *-Johnell D., 10th grade*

I wish that there were two competitions throughout the year, that way we could have the chance to learn more. The knowledge that i have gained from the one has helped me to think more critically about how I act and consider solutions to problems. *–Colin P., 9th grade*

This year's NEOREP competition seemed to contain the most challenging games in recent memory. The challenge of programming for the games this year was the toughest yet. The morning was spent in anxiety of whether or not our robot would successfully complete the games. Our first game failed at about the halfway mark by not picking up the rock, which was, by all accounts, the hardest part.

Game 3: Defend Your Post was the one I ran, so I felt the extra pressure as well. I watched from a perfect angle as the Asteria II launched all six balls through the target! Later we were awarded trophies for a third pace design, first place journal, second place in both games and first overall and I was ecstatic. All our hard work had paid off.

If I were convincing a friend to join the team, I would say that RoboVikes is a blast to do. You get to work with great people, solve challenging tasks, and overall have a great time. The competition is by far my favorite school day, and you get to play with Legos in a club. What's there not to love?
-Nathan S., 10th grade

I was really glad when we won the 1st place trophy for design and kind of disappointed when the robot didn't work during the games. The best part of the competition was when the entire robotics team won so many trophies!
-Luke M., 7th grade

RoboVikes—LaBrae Robotics

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Our Mission

LaBrae Robotics strives to strengthen student's engineering and computational thinking background through RoboVikes, our after school club, as well as through course offerings during the school day. This model has proven successful in building strong critical thinkers who are well-prepared for what lies beyond their high school career.

We cannot emphasize enough that competition is simply one of the many means to motivate and excite students. **In that context, "winning" is just a byproduct of excellent preparation, execution, collaboration, and a dynamic knowledge base.** To achieve those goals, we focus on self-discipline within the engineering design process, along with education, commitment, and collaboration.

Focusing exclusively on winning competitions not only greatly limits a person's dynamic growth but also is counterproductive. At RoboVikes, we compete with careful moderation and focus on developing and strengthening each child's innate motivation and creativity as well as an appreciation of hard work and enjoyment of the journey.

ROBOVIKES
LABRAE ROBOTICS

The Future of The RoboVikes

On our website (as well as printed above), you will find our new mission statement. After watching some of our team members react to the stresses and obstacles that presented themselves during weekly practices as well as at the tournament , I decided some things needed to change.

Any coach will tell you that without a solid foundation and understanding of the game, sacrifices made to practice skills and drills, and having a wide range of athletes with varying skills and specialties, sports teams cannot be regarded as highly successful. The same mentality can be (and will be) applied to our robotics program here at LaBrae.

Our renewed focus, at the request of many of our team members, will be on developing the building and programming skills. As part of the program, students will be immersed in building activities that will teach students the fundamentals of structural design initially using the Lego pieces as a medium, but then incorporating things like cardboard and Play Doh and even our new aluminum Tetrix kits to engineer solutions to design challenges. Additionally, students will be learning how to code using Python, one of the world's most popular programming languages. They will create things like games and applications on their computers in addition to learning how to use this programming language to make their robots move. To help prepare students for their existence in an increasingly digital world, all MS and HS team members will be expected to learn and use Python to control their robots.

The addition of the Robotic Engineering course to be offered during the school day for all students at LaBrae High School shows us that our Board of Education believes in our commitment to providing the very best educational opportunities to our students. As of this writing, the course has been filled and my understanding is that very few of the students signed up for the class are members of the robotics club, allowing me to share with a more diverse group of students the amazing things the RoboVikes get to do! Students in this class will also be using the Python programming language.

It's no secret that we have experienced some tremendous success at the NEOREP competition these last four years. From a coaching/mentoring role, we've decided to expand our horizons and explore competitions outside of NEOREP and dabble in the world of FIRST Tech Challenge. These competitions are very similar in format, but require more advanced programming and robotic solutions for each challenge (and unfortunately have higher entry fees and equipment costs). The team is pretty even as to who wants to partake in the new challenge and who feels their skills are best utilized at NEOREP. This foray into FTC may not initially lead us to the same sort of success like we're used to, but as indicated in our mission statement, winning is just simply a byproduct of excellent preparation and a dynamic knowledge base. As we venture down this new, yet familiar road, we will continue to keep our benefactors informed about the amazing things happening within our organization and ask for their continued support.

Joe Slifka