Robotics Team

The Monroeville Elementary and Middle School Robotics Teams participate in robotics through the Robotics Education & Competition (REC) Foundation. The REC Foundation exists to connect students, mentors, and schools in every community to a variety of successful and engaging technology-based programs. REC Foundation's goal is to provide programs with services, solutions, and a community that allows them to flourish in a way that fosters the technical and interpersonal skills necessary for students to succeed in the 21st Century. (REC Foundation)
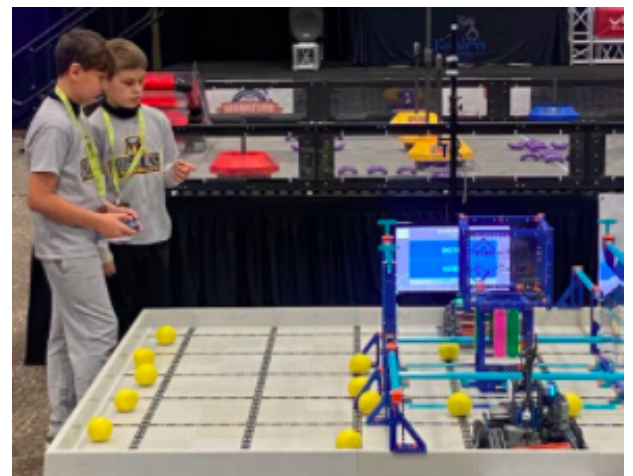
The robotics program at Monroeville is a student centered program. Students learn to design, create, program, and drive their robots all while building some much needed 21st century skills such as collaboration, communication, creativity, and critical thinking.

Robotics Tournaments

During the 2021-2022 tournament season, the Monroeville team will participate in tournaments at Norwalk Middle School (Norwalk, Ohio), Kalahari Hotel Resort (Sandusky, Ohio) , North Union Middle School (Richwood, Ohio), Brookside Intermediate School (Sheffield, Ohio), Elyria High School (Elyria, Ohio), and the state championship in Marion, Ohio.

The Monroeville Elementary and Middle School Robotics Team currently consists of 5 elementary teams and 1 middle school team. Our school's team number is 14163. Each team has a number and a letter designation. Our middle school team is 14163A, and our five elementary teams are 14163B, 14163C, 14163D, 14163E, and 14163F. As tournament season progresses, teams get ranked in each state, and the world.
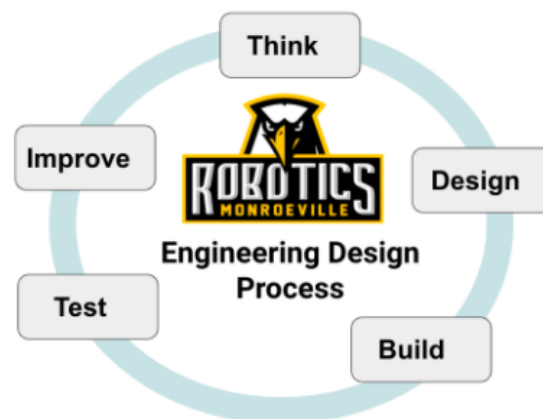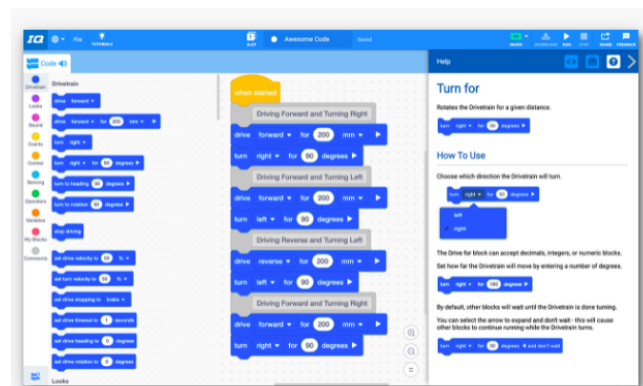
There are three competitions that students participate in during tournaments. There's the teamwork challenge, skills challenge, and design challenge.

During the teamwork challenge portion of the tournament, each team will compete 6 or 8 times throughout the day (depending on if the team makes it to finals). Each teamwork match is only 60 seconds long. During a match, two team members take turns driving, around the 30 second mark the remote gets passed from the first driver to the second. There are two teams on the field working together to get the most points scored during each 60 second match. Students quickly learn to collaborate with kids from other schools and other teams as they strategize ways to earn the most points in each match.

During the skills challenge, each team gets 60 seconds to run an autonomous program to score points. Prior to the tournament, students spend a lot of time coding a program to run their robot autonomously during this portions of the tournament.
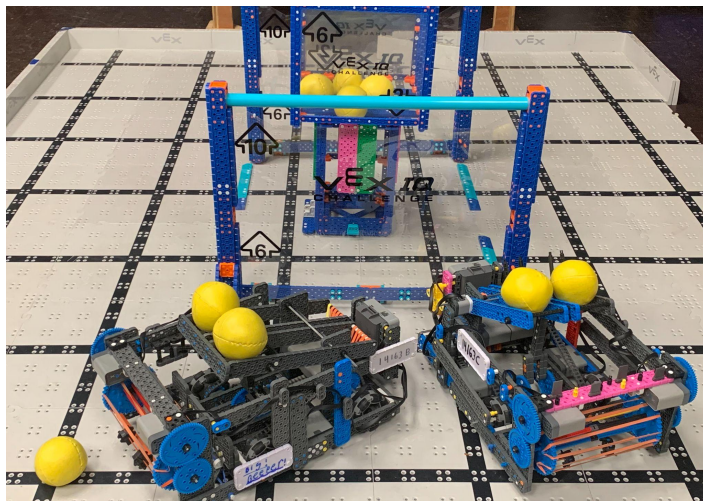
For students to compete in the design challenge, teams keep an engineering design notebook that keeps track of their robot build. Students relate what they're doing to the engineering design process in their notebook. During the tournament, students hand in their notebook at the beginning of the tournament and then the teams get interviewed by judges. The judges decide which team gets the design award.

All six Monroeville Teams qualified to attend the Ohio State Robotics Championship in Marion, Ohio. During the state competition, 2 elementary teams won 2nd place, which qualifies them to compete at the World Robotics Championship in Dallas, Texas in May 2022. In addition, 1 middle school team also qualified to compete at worlds.
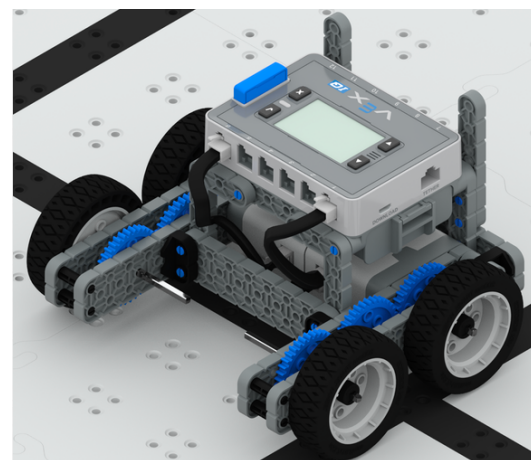
Robotics Equipment

At the Elementary and Middle School level, students participate in VEX IQ. "VEX IQ uses a snap-together robotics system, making it fast and easy to build an endless variety of robots." (VEX Robotics) After students build a robot, they then will need to program it before they can drive it. VEXcode IQ brings Robotics and Computer Science to life for students at all skill levels. Students can choose between three different coding languages - Block-based, Python, and C++." (VEX Robotics). At this point in time, the Monroeville Robotics Team focuses on teaching Block-based coding to our elementary and middle school students, but the opportunity exists to expand into teaching Python and C++.

Robotics After School Program

At the beginning of the school year, the robotics team hosts a 4-6 week after school program that's designed to introduce students in grades 3-6 to the basics of designing, building, programming, and driving robots. Space is limited due to the amount of available robotics equipment. Throughout the program, students will build their collaboration skills as they work together on small teams, they will learn about the engineering design process, and they will have the opportunity to experience STEM through hands-on robotics activities. Robotics team members will assist during the after school program, helping their classmates to build, program, and drive the standard drive base.

Robotics Sponsorships

The robotics team is currently sponsored by Berry Global, Firelands Federal Credit Union, and NASA. As the team prepares to attend the Robotics World Championship, more sponsors and donors will be needed.

Sources:

Robotics Education and Competition Foundation, https://www.robotevents.com/

World Championship, https://www.roboticseducation.org/vex-robotics-world-championship/

VEX Robotics, https://www.vexrobotics.com/