Lakeville Robotics Mission

To provide more students in Lakeville, Minnesota the opportunity to participate in FIRST programs by bringing the schools and community together to enhance student learning at all levels in a fun, real world, hands on environment.

FIRST Robotics Family of Programs

Jr FLL – Junior *FIRST* LEGO League, grade K-3

Teams of up to 6 students:
- Explore a real world scientific problem
- Build a motorized LEGO challenge model to demonstrate the team's research
- Create a Show Me poster and practice presentation skills
- Begin developing teamwork skills

Stats:
- 11,000+ Jr FLL teams in the world last season
- 124 Jr FLL teams in MN in 2017-18

FLL – *FIRST* LEGO League, grade 4-8

Teams of up to 10 students:
- Research a current scientific problem or question and create and present their own innovative solution
- Strategize, design, build, program, and test an autonomous robot using LEGO Mindstorms technology to complete missions on a 4' X 8' table in 2 ½ minutes
- Can include the use of touch sensors, color sensors, light sensors, ultrasonic sensors, gyro sensors, and sound sensors on their robot. The robot is programmed using NXT-G or EV3 graphical programming language
- Apply real world math, science, and engineering concepts in hands on learning
- Develop career and life skills such as problem solving, critical thinking, time management, collaboration, public speaking and communication

Stats:
- 32,000+ FLL teams in the world last season: 255,000+ participants across 80 countries
- 628 FLL teams in MN in 2017-18 - MN is the 2nd largest regional FLL partner in the world
- Eleven teams are registered in the Lakeville area in 2017-18. 7 advanced to Sectionals, 5 advanced to State. They are Ballistic Bots, BEESTMODE, Powerful Programming Puppies, Project Nautilus, and Uni-Gears.
- Twelve teams in the Lakeville area in 2016-17. 8 advanced to Sectionals, 2 advanced to State. At the state tournament, Beestmode won 1st place in Quality of Research, and was in the top 7 teams for Core Values. They were in consideration for the Champions award and finished among the top 7 team in the state.
- Thirteen teams in the Lakeville area in 2015-16. Eight of those teams advanced to Sectionals, four advanced to the State Tournament (#2023 Glitter Girls, #4101 Tech Crew, #16196 Innov8, and#16632 Full Charge).
- Lakeville team #2023 Glitter Girls took 3rd place in the state in 2016 and won 2nd place in Gracious Professionalism at the Arkansas Razorback Invitational in May 2016.
- Lakeville team #29 Caught in a Brainstorm took 2nd place in the state in 2015 and won 3rd place for Research Project Presentation at the 2015 FLL World Championship.

FTC – *FIRST* Tech Challenge, grade 7-12

Teams of up to 15 students:
- Design, build, and program robots that compete on a 12' X 12' playing field in an 2-on-2 alliance format
- Build 18" X 18" X 18" robots from a reusable Tetrix platform powered by Android technology and programmed using Java
- Use CAD Modelling and 3D Printing to develop customized robot parts
- Are required to employ sound engineering principles, such as rapid prototyping and design critiques
- Develop an engineering notebook to document the design, prototyping, and testing process and progress
- Develop a business plan to manage team finances and short & long term goals
- Solicit sponsorship from engineering and other companies and organizations
- Perform community outreach to develop teamwork, as well as interpersonal and communication skills
- Develop strategic problem solving, organizational, and team building skills.

Stats:
- 5,500 teams in the world last season with over 55,000 participants
- 187 FTC teams in MN in 2017-18
- LNHS team #11872 Visible Spectrum won the Motivate award at the North Super Regional Tournament in Cedar Rapids, IA and advances to the World Championship in Detroit MI on April 24-28!
- Seven teams are registered in the Lakeville area in 2017-18 - four at LNHS, three at LSHS. Four teams advanced to the MN FTC State Tournament. At State, Visible Spectrum won the Motivate award and advanced to the North Super Regional in Cedar Rapids, IA. LNHS team #11873 won the Stratasys 3D printing award and the use of a $10,000 Stratasys 3D printer for a year. LNHS junior Selina Woo of Visible Spectrum is one of 4 MN Dean's List Finalists and will advance to the World Championship for a shot at a national Dean's List title. LNHS junior Keenan Leverty of Parallax Shift was named a Stratasys 3D Scholar for his essay on 3D printing.
- Three teams registered in Lakeville in the 2016-17 season (#9617 Loose Screws, #11872 Visible Spectrum, #11873 Parallax Shift). All three advanced to state competition. Parallax Shift advanced to the North Super Regional in Cedar Rapids, IA.
- Two teams registered in Lakeville in the 2015-16 season (#9617 Loose Screws and #9132 Polar Vortex), both advanced to the State Tournament. Polar Vortex won the Connect Award at the State Tournament.
- Lakeville Team FTC #4140 Fish in the Boat is the 2013 FTC World Champion, won the PTC Robot Design Award at the 2013 World Championship, and the Connect Award at the 2014 World Championship.

FRC – *FIRST* Robotics Competition, grade 9-12

Teams of 10 students or more:
- Design and build 120 lb (approximately refrigerator-sized) robots in a six-week build season
- Program robots using either Java, LabVIEW, or C++
- Use CAD Modelling and 3D printing to develop customized robot parts
- Are required to employ sound engineering principles during a compressed production schedule
- Solicit sponsorship and perform outreach in the same manner as FTC teams
- Compete in a 3-on-3 format on a 27'x54' field
- Develop strategic problem solving, organizational, and team building skills

Stats:
- 3,357 teams in the world last season with over 83,000 participants
- 211 FRC teams in MN in 2016-17.
- One team registered in Lakeville in the 2017-18 season at LSHS - FRC #2511 Cougars. They compete at the Lake Superior Regional in Duluth on March 7-10 2018.