



**FIRST  
LEGO  
LEAGUE JR.**  
Ages 6-9 (Grades K-3)

**FIRST  
LEGO  
LEAGUE**  
Ages 9-16\* (Grades 4-8)

**FIRST  
TECH  
CHALLENGE**  
Ages 12-18 (Grades 7-12)

**FIRST  
ROBOTICS  
COMPETITION**  
Ages 14-18 (Grades 9-12)

## SCHOOL-BUSINESS PARTNERSHIPS OF LONG ISLAND, INC. AND CENTER MORICHES UNION FREE SCHOOL DISTRICT

### WELCOME YOU TO THE **FIRST®** TECH CHALLENGE QUALIFIER JANUARY 2016

*FIRST®* Tech Challenge is designed for students in grades 7-12 to compete head to head, using a sports model. Teams are responsible for designing, building, and programming their robots to compete in an alliance format against other teams. The robot kit is powered by Android technology, reusable from year-to-year and is programmed using Java. Teams, including Coaches, Mentors and Volunteers, are required to develop strategy and build robots based on sound engineering principles. Awards are given for the competition as well as for community outreach, design, and other real-world accomplishments.

#### **ABOUT FIRST TECH CHALLENGE**

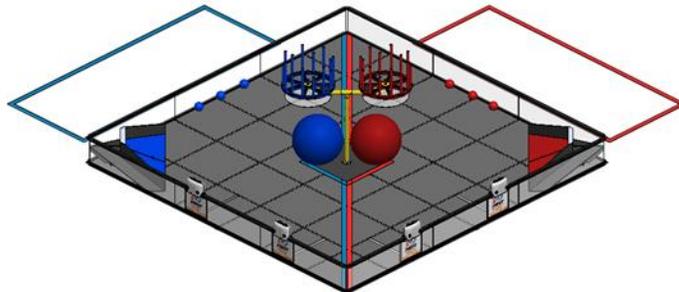
*FIRST* Tech Challenge is an exciting and fun global robotics program that ignites an enthusiasm for science, technology and discovery in young people and teaches them STEM skills and concepts, principles of leadership, and how to work as a team.

The competitions are the result of focused brainstorming, dedicated mentoring, project timelines and teamwork. Paired with technical mentors, teams learn from and play with the “pros” to experience engineering problem solving first-hand.

- Entices kids to think like scientists and engineers
- Provides a fun, creative, hands-on learning experience
- Teaches kids to experiment and overcome obstacles
- The skills they learn make math and science tangible, accessible and real
- Endorsed by the National Association of Secondary School Principals
- Teams learn to document their design ideas and discoveries
- Builds self-esteem and confidence
- 90% of participating students report learning how STEM can solve real-world problems

#### **TOURNAMENT SCHEDULE (APPROXIMATE)**

7:00 am	Team Check-in, Inspections Begin, Practice Field Opens
7:30 am	Adult Coaches' Meeting
8:00 am	Judge Interviews Begin
10:30 am	Drivers' Meeting
10:45am	Opening Ceremony
11:00 am	Qualification Matches
12:30 pm	Lunch Break
1:00 pm	Qualification Matches continue
3:45 pm	Alliance Selection
4:00 pm	Elimination and Final Rounds
5:15 pm	Closing Ceremony



# VELOCITY VORTEX<sup>SM</sup> PRESENTED BY QUALCOMM<sup>®</sup>

## GAME DESCRIPTION

### The 2016-2017 Game:

VELOCITY VORTEX<sup>SM</sup> presented by Qualcomm<sup>®</sup> is played on a 3.7m x 3.7m (12 ft. x 12 ft.) square field with approximately 0.3m (1 ft.) high walls and a soft foam mat floor. The field is divided diagonally into a “red” and a “blue” side corresponding to the two alliances. In the center of the field are two goals on a rotatable stand called the Center Vortex. Two ramps, each with a goal, called the Corner Vortex, are placed in opposite sides of the field. The Center Vortex Goals and Corner Vortexes are alliance specific. There are also four alliance neutral Beacons, two placed on each front wall next to the Corner Vortex. There are floor markings as well as Vision Targets placed on the field walls as reference points for robot navigation.

Alliance specific scoring elements for VELOCITY VORTEX<sup>SM</sup> are five small balls called Particles and one large ball called a Cap Ball per alliance. At the start of a match, each alliance has three Particles available for preloading and scoring during the Autonomous period. Each alliance can earn up to two more Particles for use during the Driver-Controlled period by claiming Beacons during the Autonomous period.

Matches have two distinct periods of play: a 30-second Autonomous period followed by a two-minute Driver-Controlled period, the last 30 seconds of the Driver-Controlled period is called the End Game which adds new scoring opportunities for robots to achieve.

### Autonomous Period:

During the Autonomous period, robots operate using only pre-programmed instructions. Alliances earn points by: claiming Beacons, moving the Cap Ball off of the Center Vortex base onto the field floor, scoring Particles into their alliance’s Center Vortex or Corner Vortex. Alliances may also gain points by parking their robot in contact with the Center Vortex base or on the Corner Vortex.

### Driver-Controlled Period:

During the Driver-Controlled period, alliances earn points by scoring Particles into their alliance’s Center Vortex or Corner Vortex. Robots may also claim Beacons for their alliance by triggering them to illuminate their alliance color. There is no limit to the number of times that a Beacon may be triggered. At the end of the Game, the color of the Beacon determines the alliance credited for claiming it.

### End Game:

The final 30 seconds of the Driver-Controlled period is called the End Game. In addition to the Driver-Controlled period tasks, alliances earn points by raising the Cap Ball off the playing field floor or by capping their Center Vortex with it.

Autonomous Period Scoring	Points
Robot Parked partially on Center Vortex base	5
Robot Parked fully on Center Vortex base	10
Robot Parked partially on Corner Vortex	5
Robot Parked fully on Corner Vortex	10
Particle scored in Center Vortex	15/Particle
Particle scored in Corner Vortex	5/Particle
Cap Ball in contact with the floor	5
Claimed Beacon (+1 extra Particle per claimed Beacon, up to 2)	30/Beacon
Driver-Controlled Period Scoring	Points
Particle scored in Center Vortex	5/Particle
Particle scored in Corner Vortex	1/Particle
End Game Scoring	Points
Claimed Beacon	10/Beacon
Cap Ball raised off floor but below 76 cm (30 in)	10
Cap Ball raised above 76 cm (30in)	20
Cap Ball scored in Center Vortex Goal	40

FIRST<sup>®</sup> Tech Challenge  
Season Presenting Sponsor



FIRST<sup>®</sup> Tech Challenge  
Official Program Sponsor



FIRST<sup>®</sup> Tech Challenge  
Official IoT, CAD and Collaboration  
Software Sponsor





## PARTICIPATING TEAMS

<u>Team</u>	<u>Team Name</u>	<u>Town</u>	<u>Team</u>	<u>Team Name</u>	<u>Town</u>
4137	IslandBots	Setauket	9501	Zero to Robo	Lynbrook
5283	LAIMO	Lynbrook	9715	Animatronics	Smithtown
6574	Task Main	Lynbrook	10169	Mineola Motors	Mineola
6939	Pandemonium 2	West Babylon	10419	Syosset Elite	Syosset
7035	Radical Robots	Bayport	10532	Shrikes	Stony Brook
7164	Falcon Bots	Locust Valley	10696	Dream Team	Syosset
8073	Quantum Chaos	Rocky Point	10738	SBS Bears	Stony Brook
8109	RISE Robotics	Dix Hills	11088	STOBOR	Syosset
8110	WiSE	Dix Hills	11401	Girl Powered Robotics (GPR)	Bay Shore
8196	CTRL ALT WIN	Lynbrook	12301	MDQ Golden Eagles	Brentwood
8325	Oyster Bot	Oyster Bay	12378	Dagaz	Dix Hills
9122	Infernobotix	Center Moriches	12428	Symbiosis	Syosset
9421	Tornadoes	Greenlawn	12464	Center Moriches MS2	Center Moriches

## MATCH PLAY AND ELIMINATION ROUNDS

During the **Qualifying Matches**, teams are randomly assigned into alliances of two teams. A team's alliance partner in one match may be their opponent in another match.

**Team Rank:** Teams will be ranked by their total Qualifying Points (QPs). If multiple teams have the same QP total, then they will be ranked by their Ranking Points (RPs). If multiple teams have the same RP total as well, then they will be ranked by their highest match score. If still tied, the next highest match score will be used until the tie is broken.

**Qualifying Points:** Teams receive 2 points for a win, 1 for a tie, and 0 points for a loss or disqualification (DQ).

**Ranking Points:** All teams in a match receive the score of the losing alliance before penalties unless they have a DQ (which gives that team 0 RP).

**Alliance selection** is held after all of the qualifying matches. Four alliance captains are selected based on team rank. These captains then pick one or two additional teams (based on event size) to be their alliance partners for the Elimination Matches.

**Elimination Matches:** Alliances get a win, loss or tie. The advancing alliance is the first one to win two matches.

## FOOD - FOOD - FOOD

Center Moriches will be selling breakfast items, beverages and snacks, as well as items for lunch to help offset the cost of hosting this event. Please support them generously!



## FIRST® TECH CHALLENGE AWARDS

### INSPIRE

**The highest award that a team can be given.**

This judged award is given to the team that truly embodied the “challenge” of the program. The team that receives this award is a strong ambassador for FIRST® programs and a role model team. This team is a top contender for many other judged awards and is a gracious competitor. The Inspire Award winner is an inspiration to other teams, acting with *Gracious Professionalism*® both on and off the Playing Field.

### ROCKWELL COLLINS INNOVATE

**Bringing great ideas from concept to reality.**

This judged award celebrates a team that not only thinks outside the box, but also has the ingenuity and inventiveness to make its designs come to life. This judged award is given to the team that has the most innovative and creative robot design solution to any or all specific field elements or components in the game.

### PTC DESIGN

**Industrial design at its best.**

This judged award recognizes design elements of the robot that are both functional and aesthetic. All successful robots have innovative design aspects; however, the PTC Design Award is presented to teams that incorporate industrial design elements into their solution.

### MOTIVATE

**Sparking others to embrace the culture of FIRST!**

This team embraces the culture of FIRST and clearly demonstrates what it means to be a team. This is a team who makes a collective effort to make FIRST known throughout their school and community, and sparks others to embrace the culture of FIRST.

### CONNECT

**Connecting the dots between community, FIRST, and the diversity of the engineering world.**

This judged award is given to the team that most connects with their local science, technology, engineering and math (STEM) community.

### THINK

**Removing engineering obstacles through creative thinking.**

This judged award is given to the team that best reflects the journey the team took as they experienced the engineering design process during the build season. The Engineering Section of the notebook is the key reference for judges to help identify the most deserving team.

### CONTROL

**Mastering robot intelligence.**

This judged award celebrates a team that uses sensors and software to enhance the robot’s functionality on the field.

### ELIMINATION TOURNAMENT AWARDS

The winning alliance and finalist alliance are both recognized for their achievement in robot game performance.

## A MESSAGE FROM SBPLI, INC.

The 2016-2017 Long Island FIRST Tech Challenge Scrimmage, Qualifiers and Championship are presented to you by School-Business Partnerships of Long Island, Inc. Founded 32 years ago by Fred Breithut, this non-profit organization forms partnerships between high schools and local businesses with the goals of providing students with practical experience and schools with curriculum development, while helping the business community develop its future workforce.

The FIRST (For Inspiration and Recognition of Science and Technology) continuum of programs inspires students from ages 6 through high school to become excited about science and technology, and, in turn, teaches amazing life lessons. For more information about SBPLI and FIRST, please visit [www.FIRSTLongIsland.org](http://www.FIRSTLongIsland.org) and [www.FIRSTinspires.org](http://www.FIRSTinspires.org).

Today’s celebration would not be possible without the support of our sponsors, the efforts of the volunteers helping to run today’s events, and the many dedicated and tireless teachers, parents and volunteer mentors who give their time and energy to engage kids in the creative process of technology. We hope you have a great day! Thank you for being part of this program that makes science and technology fun for kids. If you want to volunteer or help in other ways, don’t hesitate to contact us at [info@sbpli.org](mailto:info@sbpli.org).

## FIRST® Tech Challenge - Call for Long Island Volunteers

We need additional Volunteers for our upcoming events in Syosset on **Saturday, January 28th** and Smithtown on **Saturday, February 11th**. Please sign up in VIMS or email [Volunteers@firstlongisland.org](mailto:Volunteers@firstlongisland.org) if you can help.



## ABOUT FIRST®

FIRST® (For Inspiration and Recognition of Science and Technology) was founded in 1989 to inspire young people's interest and participation in science and technology. Based in Manchester, NH, the 501(c)(3) not-for-profit public charity designs accessible, innovative programs that motivate young people to pursue education and career opportunities in science, technology, engineering, and math, while building self-confidence, knowledge, and life skills.

FIRST is **More Than Robots**™. FIRST participation is proven to encourage students to pursue education and careers in STEM-related fields, inspire them to become leaders and innovators, and enhance their 21<sup>st</sup> century work-life skills.

## FIRST VALUES

### **Gracious Professionalism**®

Dr. Woodie Flowers, FIRST Distinguished Advisor and Pappalardo Professor Emeritus of Mechanical Engineering, Massachusetts Institute of Technology, coined the term *Gracious Professionalism*®.

*Gracious Professionalism* is part of the ethos of FIRST. It's a way of doing things that encourages high-quality work, emphasizes the value of others, and respects individuals and the community.

With *Gracious Professionalism*, fierce competition and mutual gain are not separate notions. Gracious professionals learn and compete like crazy, but treat one another with respect and kindness in the process. They avoid treating anyone like losers. No chest thumping tough talk, but no sticky-sweet platitudes either. Knowledge, competition, and empathy are comfortably blended.

In the long run, *Gracious Professionalism* is part of pursuing a meaningful life. One can add to society and enjoy the satisfaction of knowing one has acted with integrity and sensitivity.

### **Coopertition**®

*Coopertition*® produces innovation. At FIRST, *Coopertition* is displaying unqualified kindness and respect in the face of fierce competition. *Coopertition* is founded on the concept and a philosophy that teams can and should help and cooperate with each other even as they compete.

Coopertition involves learning from teammates. It is teaching teammates. It is learning from Mentors. And it is managing and being managed. Coopertition means competing always, but assisting and enabling others when you can.

## FIRST® Tech Challenge Core Values

We display GRACIOUS PROFESSIONALISM® with everyone we engage with and in everything we do.

We act with integrity. We have fun. We are a welcoming community of students, mentors and Volunteers.

What we learn is more important than what we win.

We respect each other and celebrate our diversity.

Students and adults work together to find solutions to challenges.

We honor the spirit of friendly competition.

We behave with courtesy and compassion for others at all times.

We act as ambassadors for FIRST® and FIRST® Tech Challenge.

We inspire others to adopt these values.





## **SBPLI FIRST TECH CHALLENGE DEVELOPMENT COUNCIL**

Janet Anderson   Jeffrey Bernhardt   Jack Chen   Troy Douglas   Chris Early   Patrick Foley   Steve Garfinkel  
Marin Kobin   Brian Lomasky   Caryn Meirs   Dave Meyer   Juliet Meyer   Eric Miele   Craig Mooers  
Tom Morritt   Nolan Quinn   Jason Roy   David Savage   Ian Stovall   Lisa Stovall   Matt Schildknecht  
Robert Stephenson   Stephanie Stern   Carl Williams

### **SPECIAL THANKS TO OUR HOSTS:**

#### **Center Moriches High School :**

Principal - Edward Casswell                      Assistant Principal - Jeremy Thode  
Head Custodian - Tom Kelly                      Security - Joe Townsend

**Superintendent of Schools** - Mr. Russell Stewart                      Asst. Superintendents - Raina Ingoglia and Ricardo Soto

#### **Board of Education:**

President - Joshua P. Foster                      Vice President - Darrell L. Iehle  
Loriann Patanjo, Annette Rank and Robyn Rayburn

#### **Center Moriches *FIRST* Team 4458**

### **THANK YOU TOURNAMENT VOLUNTEERS!**

Site Coordinator - Jason Roy	Event Coordinator - Janet Anderson
Head Referees - Carl Williams and Juliet Meyer	Asst. Event Coordinator - Marin Kobin
Sound Coordinator - Dave Meyer	Field Manager - Troy Douglas
<i>FIRST</i> Tech Advisor (FTA) - Robert Stephenson	Volunteer Coordinator - Brian Lomasky
Lead Scorekeeper - Dave Meyer	Lead Robot Inspector - Amanda Berg
Lead Queuer - Louise Stephenson	Judge Advisor - Matt Schildknecht

**Thank you to all other volunteers whose names did not make it into the printed program!**

### **AND THANK YOU ...**

***... to all who help make this program possible for our youth. FIRST® could not exist without the support of the many mentors, parents, teachers and volunteers who step up to provide their time and expertise to inspire our young people to get excited about science, technology, engineering and math.***