



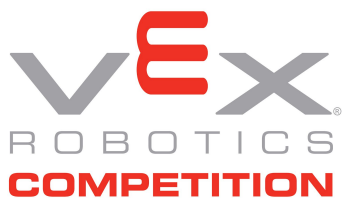
**loveland  
robotics**

**2017-2018**

**Parent/Student Handbook**



**FTC Teams 5040 & 10464**



**VEX Teams 10565 A-D**

**Loveland High School**

1 Tiger Trail, Loveland OH, 45140

<http://lovelandrobotics.com>

[stewaram@lovelandschools.org](mailto:stewaram@lovelandschools.org)

# TABLE OF CONTENTS

## PREFACE

ii

|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>TEAM HISTORY</b>                                  | <b>1</b>  |
| <b>2</b> | <b>LOVELAND ROBOTICS</b>                             | <b>1</b>  |
| 2.1      | Mission  | 1         |
| 2.2      | Vision   | 2         |
| 2.3      | Values   | 2         |
| <b>3</b> | <b>FIRST®</b>  | <b>2</b>  |
| 3.1      | About FIRST®   | 2         |
| 3.2      | A FIRST® Experience                                  | 3         |
| <b>4</b> | <b>FIRST® TECH CHALLENGE COMPETITION</b>             | <b>3</b>  |
| 4.1      | Overview   | 3         |
| 4.2      | FIRST® Tech Challenge Competition Schedule           | 4         |
| 4.3      | Participation Cost                                   | 4         |
| 4.4      | Time Commitment                                      | 5         |
| <b>5</b> | <b>LOVELAND ROBOTICS FIRST® TECH CHALLENGE TEAMS</b> | <b>5</b>  |
| 5.1      | General Expectations                                 | 5         |
| 5.2      | Team Structure                                       | 6         |
| 5.3      | Openings   | 6         |
| 5.4      | Team Member Selection                                | 6         |
| <b>6</b> | <b>ROLES AND RESPONSIBILITIES</b>                    | <b>7</b>  |
| 6.1      | Team Captain   | 7         |
| 6.2      | Programming Lead                                     | 8         |
| 6.3      | Build Team Lead                                      | 8         |
| 6.4      | Business Lead  | 9         |
| 6.5      | Robot Drive Team                                     | 9         |
| 6.6      | Sub team member roles/assignments                    | 9         |
| 6.7      | Adult Coach  | 10        |
| 6.8      | Adult Mentors  | 10        |
| 6.9      | Parent Involvement                                   | 11        |
| <b>7</b> | <b>REQUIREMENTS</b>                                  | <b>11</b> |
| 7.1      | Attendance / Meeting Rhythm                          | 11        |
| 7.2      | Grades   | 13        |
| 7.3      | Code of Conduct                                      | 13        |

|     |                              |    |
|-----|------------------------------|----|
| 7.4 | Team Travel / Transportation | 14 |
| 7.5 | Fundraising                  | 15 |
| 7.6 | Community Involvement        | 15 |
| 8   | TEAM CONTACTS/COMMUNICATION  | 15 |
| 9   | REVISION HISTORY             | 16 |

## PREFACE

---

The purpose of this handbook is to provide students and their parents' information related to the operating practices, expectations and requirements for being a member of a Loveland Robotics *FIRST*® Tech Challenge Team and/or VEX Robotics Team.

Before a prospective team member accepts a position on the team, both student and parent(s) should read the handbook and acknowledge that they will strive to meet the expected commitment.

Much of the material contained in this handbook is drawn from on-line material made available by the *FIRST*® organization (For Inspiration and Recognition of Science and Technology), VEX Robotics, and the REC Foundation (Robotics Education and Competition) as well as other publically available team handbooks. Loveland Robotics thanks them for this head start.

# 1 TEAM HISTORY

---

Loveland Robotics was established in 2011 as a channel for Loveland High School students to learn and express their interests in engineering and robotics. Starting with nine students and two coaches, this team competed as team #5040, the “Tiger Cyborgs” in the *FIRST*® Tech Challenge “Bowled Over” tournament. This rookie team overcame many barriers and applied novel solutions for their robot design. This out of the box thinking enabled them to win recognition for their engineering notebook, team spirit (motivate award) and an entry into the Ohio FTC championship tournament.

Building on the success of their rookie year, Team #5040 has since competed in the annual *FIRST*® Tech Challenge competition under the name of “Loveland Nuts and Bolts.” They have received many accolades including the prestigious Inspire Award and qualified for the Ohio State FTC competition five out of the last six years.

By 2015, huge interest had grown in the Loveland High School Robotics program. This led to the formation of a second FTC team, #10464, the “The Bionic Tigers.” This was a year of growth and success for the robotics program. With great support from mentors and parents, the team held a scrimmage event at Loveland High School and then followed this with winning performances in the qualifying rounds of the FTC Tech Challenge “RES-Q” tournament. Both teams qualified for the Ohio FTC championship tournament, with team #10464 reaching the last round of the final. Although both teams made the top 30% and achieved some notable recognition, they both came up short of a coveted spot in the Super-Regionals.

2015 was also the beginning of Loveland Robotics entrance into VEX Robotics Competitions. VEX Competitions are sponsored by VEX Robotics and the REC Foundation (Robotics Education and Competition). One VEX team entered competition in the Rookie Year. Four students entered one competition and came home with the Judges Award.

Interest in Loveland Robotics continued to grow and additional VEX teams were added. In 2016, the two FTC teams continued to compete as well as four VEX teams for a total of 39 student team members.

The 2016-2017 season was a very successful one for FTC Team 5040. The team qualified for

Super Regionals where they were the Winning Alliance Captain. This success earned them a spot at the coveted *FIRST*<sup>®</sup> World Championship in St. Louis.

Without the commitment of the students, dedications of teachers and strong involvement from parents, Loveland Robotics would not have grown to the level it is today. As this growth continues, the team continues to take on new challenges in promoting STEM.

## 2 LOVELAND ROBOTICS

---

### 2.1 MISSION

To inspire young people to pursue careers in science and technology, by engaging them in a team oriented extra-curricular program where they will develop leadership skills and learn about engineering, mathematics, programming, teamwork, and project management in a fun and creative way.

### 2.2 VISION

Loveland Robotics was built on the vision of *FIRST*<sup>®</sup> - "To transform our culture by creating a world where science and technology are celebrated and where young people dream of becoming science and technology leaders." (Dean Kamen, Founder)

### 2.3 VALUES

All Loveland Robotics teams share the values of *FIRST*<sup>®</sup>:

**Gracious Professionalism<sup>®</sup>** - To act with integrity and sensitivity. To value others, and respect individuals and the community. 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.

**Coopertition<sup>®</sup>** - To display unqualified kindness and respect in the face of fierce competition. Coopertition<sup>®</sup> involves learning from teammates and mentors while assisting and enabling others when you can.

In addition, Loveland Robotics will commit to:

**Innovation & Creativity** - To differentiate our robot designs using tools and resources

available to everyone.

**Teamwork** - To reach consensus on our team objectives, to put the best interests of the team first and to fully participate in the activities of the team.

**Excellence** - To always look for opportunities to improve oneself and the team. To give our best effort and inspire others to do the same.

**Connecting with the community** - To share our experiences with others and promote the benefits of STEM programs throughout our community.

**Having Fun** - To enjoy what we do as individuals and as a team.

## 3 **FIRST**<sup>®</sup>

---

### 3.1 ABOUT **FIRST**<sup>®</sup>

**FIRST**<sup>®</sup> (For Inspiration and Recognition of Science and Technology) was founded in 1989 by inventor Dean Kamen 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**<sup>®</sup> is a “**Sport for the Mind**”, where young, innovative, and creative minds explore science and technology, solving real-world problems and competing in exciting, hands-on robotics challenges including **FIRST**<sup>®</sup> Lego League (FLL), **FIRST**<sup>®</sup> Tech Challenge (FTC), and **FIRST**<sup>®</sup> Robotics Competition (FRC). These annual programs culminate in an international robotics competition and celebration. Through their **FIRST**<sup>®</sup> experience, participants win recognition, gain self-confidence, develop people and life skills, make new friends, and perhaps discover an unforeseen career path.

**FIRST**<sup>®</sup> is “**More Than Robots.**” **FIRST**<sup>®</sup> 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.

### 3.2 A **FIRST**<sup>®</sup> EXPERIENCE

Colleges, universities and corporations recognize the value of the **FIRST**<sup>®</sup> experience. They recognize that **FIRST**<sup>®</sup> team members are passionate about science, technology, engineering, and math, and that **FIRST**<sup>®</sup> students develop critical life skills including problem solving, time management, teamwork, and the appreciation of diversity.

Over 150 Scholarship Providers worth over \$16 million are available for students who have

participated in *FIRST*® Robotics Competitions and/or *FIRST*® Tech Challenge programs.

Scholarships vary in value from one-time awards of \$500 to full tuition for four years estimated at \$160,000. Most awards are annually renewable if an acceptable academic average is maintained.

For more information on *FIRST*®, please visit [www.firstinspires.org](http://www.firstinspires.org).

## VEX AND THE REC ORGANIZATION

---

### 4.1 ABOUT VEX

VEX Competitions, presented by the [Robotics Education & Competition Foundation](#), task teams of students with designing and building a robot to play against other teams in a game-based engineering challenge. Classroom **STEM concepts** are put to the test as students learn lifelong skills in **teamwork, leadership, communications**, and more. Tournaments are held year-round at the regional, state, and national levels and culminate at VEX Robotics World Championship each April!

### 4.2 ABOUT REC

The Robotics Education & Competition (REC) Foundation seeks to increase student interest and involvement in science, technology, engineering, and mathematics (STEM) by engaging students in hands-on sustainable and affordable curriculum-based robotics engineering programs across the U.S. and internationally.

In addition to operating and supporting competitions for some of the world's leading robotics platforms and organizations, including VEX, TSA, and BEST Robotics, the foundation also provides program support and workshops focused on technology and professional development for educators. The REC Foundation is a US-registered 501(c)(3) non-profit educational organization.

For more information, please visit REC's website at <http://www.roboticseducation.org>.

### 4.3 VEX ROBOTICS GROWTH

The VEX Robotics Competition, presented by the Robotics Education & Competition Foundation, is the largest and fastest growing middle school and high school robotics program globally with more than 16,000 teams from 40 countries playing in over 1,350 competitions worldwide. Each year, an exciting engineering challenge is presented in the form of a game. Students, with guidance from their teachers and mentors, build innovative robots and compete year-round in a variety of matches.

## 5 *FIRST*<sup>®</sup> TECH CHALLENGE AND VEX ROBOTICS COMPETITIONS

---

### 3.3 OVERVIEW

Both the *FIRST*<sup>®</sup> Tech Challenge and the VEX Robotics Competition are designed for students (grades 7-12) who want to compete head to head using an exciting sports model. Teams design, build, and program their own robots to play a 12' x 12' floor game, in an Alliance format, against other teams. Participants call it “the hardest fun you’ll ever have!” Guided by adult Coaches and Mentors, students develop STEM skills and practice engineering principles (like keeping an engineering notebook), while realizing the value of hard work, innovation, and sharing ideas. Each season concludes with state/regional Championships and an exciting World Championship.

FTC robots are built from a reusable platform, powered by Android technology and programmed using Java. VEX robots are built using VEX materials and programmed using RobotC. Teams, supported by Coaches and Mentors are required to develop a game strategy, then design and build robots based on sound engineering principles. Awards are given for performance in the competition, as well as community outreach, design, and other real-world accomplishments.

Students get to...

- Design, build, and program robots.
- Model the real-world engineering design process.
- Apply math and science concepts.
- Develop strategic problem-solving, organizational, and team-building skills.
- Build life skills while building robots and work towards participating in tournaments and World Championship.
- Compete and cooperate in Alliances at tournaments.
- Raise funds, design and market their team brand, and do community outreach.
- Qualify for scholarships..

The best part about Loveland Robotics is being part of a team. Student and adult team members are encouraged to bring any skills they already have, like programming, electronics, metalworking, graphic design, web creation, public speaking, videography, and many more. Loveland Robotics *welcomes all types of students, with or without special*



skills.

### 3.4 LOVELAND ROBOTICS COMPETITION SCHEDULE

The *FIRST*® Tech Challenge season starts in May, when team registration opens. The season kick-off is in early September when the annual robot game is announced. The VEX Robotics season starts the end of April when the new game is announced at the end of the World Championship. The design and build season runs from September to January. Tournament season runs from December to April. State and Regional Tournaments will advance teams to the World Championship towards the end of April. There are also many off-season events where teams participate, strategize, hone their skills, learn new technology, meet other teams, and *have fun!*

### 3.5 PARTICIPATION COST

The costs of fielding a robotics team varies from team to team depending on what level of participation the team chooses. In the 2016-2017 season the Loveland Robotics teams each budgeted ~\$4000 (excluding travel) to achieve a competitive level of performance that would put them in the top 10% of FTC teams in the state of Ohio. Each VEX team had a budget of ~\$1000. **Parents of the Loveland High School team members each donate \$200 per student to help defray part of the cost.** The remainder of the FTC funds came from Sponsors, Fundraisers, 501(c)(3) not-for-profit organizations and 501(c)(3) company matching gift programs. The parental contribution requested for the 2017-2018 season is not expected to change. (See also “6.9.1 Financial Support”)

Here are some basic cost parameters per team (excluding travel):

| FTC                                  |      | VEX                             |     |
|--------------------------------------|------|---------------------------------|-----|
| Registration                         | 275  | Registration                    | 150 |
| Tournament Entry Fees per event      | 100  | Tournament Entry Fees per event | 100 |
| State Entry Fee                      | 250  | State Entry Fee                 | 200 |
| Game Course (teams share)            | 600  | Game Elements (teams share)     | 350 |
| Parts and Supplies                   | 2000 | Electronics                     | 200 |
| Electronic Modules and Communication | 500  | Specialty VEX parts             | 200 |

## 4 LOVELAND ROBOTICS TEAMS

---

### 4.1 GENERAL EXPECTATIONS

- Make Loveland Robotics a priority. Attend all team meetings, working sessions and outreach events. Represent the team when invited to robotics competitions.
- Be considerate and advise the team captain and mentors of planned absences well in advance.
- Be an active participant. Take initiative when you see something you can do.
- Contribute and Value ideas of others with respect and understanding.
- Express questions, concerns openly and respectfully.
- Participate appropriately in the decision-making process.
- Support the decisions of the team.
- Fulfill your assigned responsibilities and look for opportunities to help others.
- Be accepting of direction and advice from coaches, mentors and peers.
- Be safe and responsible. Be conscientious about tools and equipment.
- Be an advocate for Loveland Robotics and demonstrate the team values.
- Show Gracious Professionalism®. Help your team members and other teams in need.
- Thoroughly read and learn the game rules for the current competition.
- Read and acknowledge the content of this Team Handbook.
- Adhere to the Loveland High School Student Handbook.
- Enjoy Yourself! “This is the hardest fun you’ll ever have.”

### 4.2 TEAM STRUCTURE

FTC teams will have approximately 10 student team members supported by a minimum of two adult mentors per team. Each team will have a student team captain, supported by a build lead, programming lead and business lead. Loveland Robotics is planning to operate two *FIRST*® tech challenge teams (#5040 and #10464) for the 2017-2018 school year. VEX teams will have 4-6 student team members per team including builders and programmers. Loveland Robotics is planning to operate 3 or 4 VEX Robotics Teams for the 2017-2018 school year.

### 4.3 OPENINGS

The number of openings within the Loveland Robotics program is a function of:

- *FTC/VEX* Guidelines
- Student interest and commitment.
- Number of seniors graduating out of the team.
- The budget to cover the annual cost of purchasing robotics parts, tools, competition fees and advertising (t-shirts, flyers etc.).
- The number of teachers and number of parent volunteers committed and able to provide mentoring at every team meeting.
- The space and resources available within the school for meetings and robot practice.

For the 2017-2018 season is anticipated that will be approximately 15 total openings for new team members.

#### **4.4 TEAM MEMBER SELECTION**

Being a member of a Loveland Robotics is a privilege. There is such strong interest in the program that there are always more applicants than spaces on the team. Positions are offered to those students who best share the team values, will benefit the team the most and can make the time commitment to Loveland Robotics. The student must also be in good academic standing.

Recruitment is done on an annual basis and if the student is successful, he/she can join the team immediately and start participating in off-season summer activities.

All skill levels are welcome and needed. Student and adult team members are encouraged to bring any skills they already have, like programming, electronics, metalworking, graphic design, web creation, public speaking, videography, and many more.

Anyone who has an interest in being a member of Loveland Robotics will first apply in writing, then attend an interview/try-out session.

If offered a position on a Loveland Robotics FTC team, a student is considered a team member when he/she acknowledges they can meet the expectations and requirements outlined in this handbook. The team coach also needs to receive concurrence from one or more parents/guardians. The team fee is due by the first week of school in August.

## **5 ROLES AND RESPONSIBILITIES**

---

There are many ways students and parents can contribute to our robotics teams. Team roles and responsibilities may include the following:

## 5.1 TEAM CAPTAIN

The team captain is the student focal point and a role model for the team. The captain will oversee the team's activities as a whole and is responsible for:

- Focusing the Team on the project.
- Setting the agenda and the tone of the meetings.
- Establishing methods for communication within and outside the team.
- Assigning a job/role for everyone on the team and never allowing a person be idle.
- Ensuring the Team has a strategy and a plan to execute the strategy.
- Ensuring everyone's ideas are heard, and works to find compromises.
- Regularly checking team goals and deadlines.
- Monitoring the quality of the Engineering Notebook and ensuring contributions are equally distributed amongst the team members.
- Gathering information from sub-groups and keeping everyone on schedule with project timelines.
- During competitions, managing the team schedule. Leading the group when talking to judges, scouts, or guests in the pit during competition.
- Promoting their team by speaking at community outreach events or team demonstrations.

## 5.2 PROGRAMMING LEAD

Leads a sub-team responsible for the robot's programming and use of sensors. The programming lead is responsible for:

- Writing well-commented programs for the autonomous part of the competition.
- Writing code for the driver control.
- Selecting sensors to improve functionality and performance.
- Scheduling time with the Build Team to test the chassis when others do not need it.
- Updating programs and code as necessary to adapt to design or strategy changes.
- Knowing the rules and regularly monitoring forums and resources for rule updates, and ensuring team compliance.
- Communicating problems and possible solutions clearly and respectfully with team members.
- Ensuring the software development process is documented in the Engineering Section of the Engineering Notebook with sufficient and descriptive detail that other team functions can understand the purpose and function of the code.
- Ensuring there is a digital and hard copy of the program available at events.
- At events, making any changes the Drive Team requests in order to be more efficient during the driver controlled portion of the match.

- Offering assistance and training to team members that are new to programming.

### **5.3 BUILD TEAM LEAD**

Leads a sub-team responsible for the design, fabrication, construction, and testing of the robot and its parts. The build team lead is responsible for:

- Ensuring all team members take safety precautions while building the robot.
- Using guidelines from team brainstorming activities to build a robot.
- Taking the robot design from concept to a working product.
- Making decisions about the mechanical design.
- Investigating different solutions to solve mechanical design challenges.
- Testing to ensure that all mechanisms on the Robot work effectively together.
- Communicating problems and possible solutions clearly and respectfully with team members.
- Achieving consensus and making changes based on input from the team.
- Scheduling adequate time for the Programming Team to conduct testing of the robot chassis and sensor operations.
- Quickly communicating any design changes to the Programming Team.
- Knowing the rules and regularly monitoring forums and resources for rule updates, and ensuring team compliance.
- Ensuring the robot design and any subsequent changes are fully documented in the Engineering Notebook with sufficient detail, including CAD drawings, that the robot could be constructed from the notes.

### **5.4 BUSINESS LEAD (FTC ONLY)**

Leads a sub-team responsible for documenting the robot design process, media and connecting with the local community. The business lead is responsible for:

- Completing the team section and business plan (and/or strategic plan and sustainability plan) for inclusion in the Engineering Notebook.
- Working with the Build and Programming teams to assure team activities, actions, failures, and successes are recorded (including photos) and documented in the Engineering Notebook.
- Communicating team activities through social media. Assuring the team web-site is kept “fresh”.
- Taking photos or video footage of the build process and events for use in marketing and outreach efforts.
- Assembling promotional materials to showcase the team capabilities.
- Coordinating, preparing and submitting “Promote” and “Compass” award entries.
- Visiting sponsors and potential sponsors.

- Regularly updating parents and sponsors about the team's plans and progress by contributing to the Loveland Robotics Newsletter.
- Contacting the local media, surrounding schools, or civic organizations to increase public awareness of the team, and to show how students benefit from the competitive robotics experience.
- Helping to establish and promote team identity and spirit.

## 5.5 ROBOT DRIVE TEAM

The drive team is responsible for driving the team robot during tournaments. The team consists of two drivers and a drive team coach. They will also participate in the robot inspection. Members must be able to memorize the rules, understand the robot mechanics, work well under pressure and communicate well within the team and with alliance partners.

Teleop (Remote Control) drivers must show an aptitude for remote control finesse, and precision. The drive team coach must be able to direct the drivers through an adaptive strategy, manage the clock and communicate the actions of other robots on the field.

Students on the drive team will be selected from the other teams and will still maintain their other team responsibilities. Since these are critical roles for tournament day, additional team members will need to train as back-ups in case of last minute absences.

## 5.6 SUB TEAM MEMBER ROLES/ASSIGNMENTS

Depending on their personal interests and skills, all team members will be assigned roles and responsibilities within the general categories of build, programming and business. However, students will be expected to flex across the sub-teams depending on the needs of the team during the season, (for example a robot programmer could also be a web-master for the business team). ALL team members will contribute to the Engineering Notebook. It is expected that everyone will get exposure to various aspects of planning, strategic thinking, leadership, design, CAD, fabrication, assembly, marketing, media and communications, public relations, web-site management, alliance scouting and most importantly fun!

## 5.7 ADULT COACH

In *FIRST*<sup>®</sup> Tech Challenge, the term coach and mentor are used interchangeably. However, for the purpose of this handbook the adult coach is defined as a teacher representative working within the Loveland School System.

The coach will:

- Monitor compliance with Loveland High School Handbook.

- Be the focal point for all activities requiring access to Loveland High School and/or resources provided by the school district.
- Be the focal point for student/teacher/parent confidential discussions including any conduct or academic related issues.
- Act as a liaison between Team members, Mentors, Parents, and Volunteers.
- ...Plus all the roles and responsibilities of an adult mentor.

## **5.8 ADULT MENTORS**

Mentors are vital to a team's success. Without them, student's ideas may not be realized. They bring their industry experience to share with the students and help teach them how to be successful. We are fortunate to have Engineers and other Professionals willing to commit a significant portion of their personal time to work side-by-side with the students.

Mentors perform many roles including:

- Helping the team set realistic goals.
- Facilitating meetings and helping the team to coordinate the work.
- Being a resource for training and education.
- Taking care of administrative responsibilities, such as tournament registration and communication.
- Relaying guidelines and rules to the team, other Coaches, Volunteers and parents.
- Facilitating team activities and discussion. Ensuring all decisions are made in the best interest of the team as a whole.
- Coordinating help.
- Maintaining equipment and purchasing supplies.
- Communicating with Sponsor organizations.
- Planning and scheduling meetings, visits, and trips.

## **5.9 PARENT INVOLVEMENT**

Parents play a vital role in our team's success and enhances students' participation in the team. Parents of student are expected to provide financial, material, physical, and spiritual (cheer) support throughout the competition season.

### **5.9.1 Financial Support**

For the 2016-17 season, a contribution of \$200 per student is expected at the start of the season. This will help defray part of the cost of registration, robot supplies, and team supplies. The remaining funds will be raised by the students from fundraisers and soliciting sponsors.

Parents must also budget for their student’s travel and living costs to participate in robotics tournaments.

### 5.9.2 Volunteering/Team Engagement

Participate as a volunteer in events sponsored by the Loveland Robotics team. Provide transportation (Refer to “**7.4 Team Travel / Transportation**”) and chaperone at competitions. Visit the team during the year and during the build season to view the progress of the robot, animation, CAD, and programming. Bring food for the team during special events and extended working hours (build season & tournament season). Suggest and/or help organize fund-raising events for the team. Help identify new avenues or business contacts for team sponsorship. Become a future mentor!

## 6 REQUIREMENTS

---

### 6.1 ATTENDANCE / MEETING RHYTHM

In order to be a productive and effective member of a *FIRST*® Tech Challenge team, students are expected to attend every team activity and remain engaged in the purpose of that activity.

A student’s attendance and behavior is considered a reflection of their level of commitment to the team. Their attendance record will influence decisions by team leaders and mentors concerning eligibility for attending *FIRST*® events and attaining future team roles. Should they expect to be absent for any reason, team members are expected to notify the respective team captain, sub-team leader and mentor(s) by email. Parents should by on copy of the email. *No shows are unacceptable.*

Mentors/Adult Volunteers meet regularly with their teams throughout the school year. Students are expected to attend all of the meetings. There will be periods when the meeting frequency will increase significantly as competition dates approach. Students are also expected to spend time engaging in fundraising and outreach events after school and on weekends.

Planned absences such as vacations should be communicated well in advance, so workarounds can be put in place. *FIRST*® Tech Challenge rules require meeting attendance to be recorded in team’s Engineering Notebook. Attendance at VEX meetings will be taken as well.

Like any sport or other after-school activity, the more time you invest, the better you will become at your task(s).



### **6.1.1 Build Season (Sept-Dec)**

The most important time period for the team is known as the build season. This is when the *FIRST*® Tech Challenge game is “revealed” and the team works on the strategy, design, construction, documentation and testing of the robot.

During the build season, students are expected to attend up to 3 meetings per week, each lasting ~2 hours. There will be weeks where the demand will be higher so the team can accomplish its goals. An example agenda is shown in “*Meeting Agenda 7.1.5*”

In addition to the regular meeting rhythm, students are required to support special weekend events such as “Kick-Off” weekend, build days, outreach events and fundraising activities. In many of these cases, the teams will look for support from parents to provide transportation and/or food for the team.

### **6.1.2 Tournament Season (December-April)**

The most demanding part of the year is tournament season. Typically, a team will enter two state qualifying events, but may elect to participate in a scrimmage for playing experience. If schedule and budget permits, the teams may also elect to compete in an out-of-state qualifying event. Qualifying events usually run Friday evening and all day Saturday.

During the tournament season the meetings will become more frequent and informal. The team will focus on preparing for competition weekends and improving the performance and reliability of the robot. Meeting schedules will revolve around the needs of each sub-team. In some instances, such as the week prior to a tournament, students may be asked to help on a daily basis after school, on holidays and on weekends.

For tournament weekends, the team captains, drive team members and mentors are required to participate. However, we also need the support of team members to scout alliance partners and cheer along all of the teams. Tournament days are a showcase opportunity for the team, recognizing the creativity and hard work they have put into their robot design projects. Students and parents alike will have a lot of fun attending the events.

### **6.1.3 Post-Tournament Season (April-May)**

Depending on the success of the team, the period after the last competitions and before the end of the school year is referred to as the post-tournament season. In this period, the team will celebrate their success, wish the seniors farewell and focus their activities on outreach and recruiting.

During the post-season, meetings will be reduced to one per week.

#### 6.1.4 Summer Break (June-July)

During the high school summer break there will be no formal robotics meetings however there will be opportunities for Outreach and Fundraising. Additionally, the teams may choose to develop/perfect different designs and host training in preparation for the upcoming season. During the summer, FTC teams will focus efforts on outreach and training while VEX teams will begin planning designs for the new season.

Those in leadership roles may also support the coaches/mentors in planning and preparing the upcoming season.

Team members and prospective teams are encouraged to participate in available STEM camps to further their learning experience.

#### 6.1.5 Meeting Agenda

During the build season, students, coaches and mentors will meet on a regular basis to work on the robot design and prepare for the upcoming tournament season. The agenda for each meeting with specific tasks and goals is coordinated between the team captains and the coach/mentors. The meetings will generally follow the format below.

|                          |  |
|--------------------------|--|
| Location                 | Loveland High School   |
| Part A - General         | Administrative Topics  |
| Led by Coach/Mentors     | Team Captain Report-Out (Summary of Team Progress/Activities)    |
| 15-45 Minutes            | Mentor Feedback  |
|                          | Event planning, including competitions, outreach and fundraisers |
|                          | Budget/Financials /New Purchases                                 |
|                          | Team Building Exercise (special)                                 |
|                          | Training/Guest Speakers (special)                                |
| Part B - Team Break-Outs | Competition Preparation & Planning                               |
| Led by Team Captains     | Design, Build and Testing  |
| 75-90 Minutes            | Engineering Notebook Updates                                     |
|                          | Media Creation / Communications                                  |
|                          | Outreach / Event Preparation                                     |
|                          | Other  |

## 6.2 GRADES

Participation in Loveland Robotics is an extracurricular activity. **GRADES ARE A PRIORITY!** Students shall put their academic grades before any team needs. Parents are strongly encouraged to understand the expectation of being a Loveland Robotics team member

before consenting to their student's participation. During the season, the parent is to communicate with the adult team coaches any academic or other concerns regarding their student.

### **6.3 CODE OF CONDUCT**

Participation on the Loveland Robotics team is considered an extracurricular activity of Loveland City Schools. All team members, parents and mentors shall conduct themselves in a manner consistent with the Loveland High School student handbook.

Some notable considerations for the robotics team are:

- Gracious Professionalism® and Respect are expected at all times.
- Do not roam the school. Be on time and head directly to your meeting point.
- Leave an area better than you found it. Always pick up after yourself, and never leave a team meeting or session without having checked your area.
- Make sure all equipment/tools are put away and the spaces are clean of debris.
- Do not play games on the computers. There is always work to be done. Ask the team captain, a sub-team leader or a mentor for something to do.
- Have consideration for anyone speaking at a meeting. Side conversations are a distraction to those listening around you as well as disrespectful to the person who is speaking.
- Be Safe! All student shall wear safety glasses, when in the proximity of building, testing or operating a robot. At competitions, safety glasses must always be worn in the pits. The drive team must wear them during matches. Do not lift or stack heavy items in an unsafe manner that could cause personal injury to yourself or others. Wear gloves, ear protection or closed toe shoes as appropriate. Store sharp objects in appropriate containers immediately after use.
- Never work alone. Ensure at least one mentor or student is with you at all times.

### **6.4 TEAM TRAVEL / TRANSPORTATION**

Parents are responsible for the travel arrangements, conduct and costs of students attending any Loveland Robotics meetings or events.

If a parent is transporting a student to a team meeting or an event, they are equally responsible for their timely pick-up as they are for drop-off. The mentors/coaches spend a significant portion of their personal time with the students, and it is only courteous to be prompt so they can share time with their own families.

Traveling to competitions is a privilege earned through hard work and commitment to the

team. We understand that circumstances may arise that creates a conflict; however, students are strongly encouraged to make every effort to earn the opportunity to travel as this is a rewarding, exciting fun experience - perhaps the best part of robotics. There will be circumstances when team members will be asked to travel outside the Cincinnati area to compete in other regions. In some of these cases, parents will need to provide for overnight accommodation. It is highly recommended that parents of travelling students also travel with the team as the limited few mentors and coaches cannot oversee their conduct and whereabouts at all times.

If parents are unable to provide transportation for their student. Adult mentors may offer to transport them in their personal vehicles. In such cases, the student is responsible for his/her own safety, well-being, and must be respectful for the parent/mentor's vehicle. Written permission (email) is required from a parent before this is allowed.

Other requirements when traveling...

- Adhere to the Loveland Schools Student Handbook Rules of Conduct.
- Demonstrate the Team Values. Respect the Loveland Robotics brand.
- Be on time.
- Be respectful of those around you. Keep noise to a minimum in hotels and restaurants.
- At competitions, be respectful of other teams and refrain from un-sportsman like conduct.
- Volunteer to clean up and help take down the competition and pit areas.

## 6.5 FUNDRAISING

The teams operate from donations from parents, business sponsorships and fundraisers. At this time, Loveland School District does not provide any financial support. Funds for the FTC teams are managed through the Loveland School accounts and any checks or donations should be made out to Loveland High School. Funds for the VEX teams are managed through the Great Oaks district and any checks should be made out to Great Oaks/Loveland Robotics. This differentiation helps to keep funds for the two programs separated.

To minimize parental contributions, FTC team members are required to solicit sponsors and conduct fundraisers throughout the year, Fundraising is an important obligation. Not only does it help the team raise money for team expenses, but also it builds important partnerships with local businesses, community and donors. Fundraising is another means of outreach, spreading awareness of the team and *FIRST*<sup>®</sup> across the community. Past activities include running concessions at a *FIRST*<sup>®</sup> Lego League Tournament, serving dinner at the Loveland Eagles, and presentations for the Loveland Chamber of Commerce.

Parents are a great source for ideas and support. If you have any ideas on potential

fundraising opportunities, please let members of the Loveland Robotics team know.

## 6.6 COMMUNITY INVOLVEMENT

*FIRST*® Tech Challenge teams must design and market their team brand, and do community outreach for which they can win awards.

Loveland Robotics will be active in the local community, as they host/attend events, perform demonstrations and support math and science-related programs for the area’s students.

## 7 TEAM CONTACTS/COMMUNICATION

---

Good communication is so important to a teams’ success. All students must stay up-to-date on team happenings and important events. The primary means of communication between coaches, mentors, parents and students is email. Communications between students may differ and this will be decided by the respective team captain. Should any questions or concerns arise, please refer to the contact list below.

|  | Contact            | Email                                | Web Address                            | Phone        |
|--|--------------------|--------------------------------------|--|--------------|
| Team 5040 Head Coach   | Mr. Phil Marchal   | marchal@lovelandschools.org          | www.lovelandschool.org                 | 513-697-3801 |
| Team 5040 Captain  | Ms. Haley Dues     | robotics5040@gmail.com               | www.lovelandrobotics.com               |              |
| Team 10464 Head Coach  | Mrs. Amy Stewart   | stewaram@lovelandschools.org         | www.loveland schools.org               | 513-697-3764 |
| Team 10464 Mentor  | Mr. John Rasmussen | jd.rasmussen@gmail.com               |  | 513-658-3904 |
| Team 10464 Captain   | TBD                | XXX                                  | www.lovelandrobotics.com               |              |
| <i>FIRST</i> ® FTC Forum   |                    | FIRSTTechChallenge@firstinspires.org | http://ftcforum.usfirst.org/forum.php/ |              |
| iSpace (Ohio affiliated partner for <i>FIRST</i> ® Tech Challenge) |                    | info@ispacescience.org               | http://ispacescience.org/              | 513-612-5786 |

## 8 REVISION HISTORY

---

| Rev No. | Reviser | Date       | Section | Description              |
|---------|---------|------------|---------|--------------------------|
| 0       | PMS     | 2016-07-04 | -       | Initial Handbook Release |

|     |     |            |                                    |   |
|-----|-----|------------|------------------------------------|---|
| 0.1 | PMS | 2016-08-16 | 7,8                                | Minor admin changes   |
| 1.0 | AMS | 2017-04-07 | addition of 4,<br>edits throughout | update for current year, addition of<br>VEX teams to handbook |