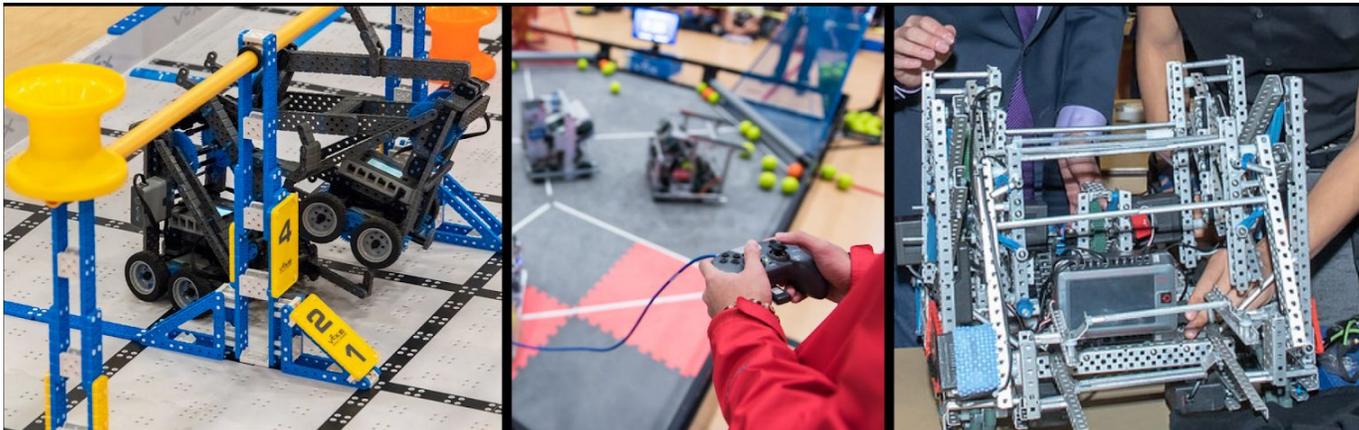


Tustin Unified School District Robotics Handbook



TUSD Robotics



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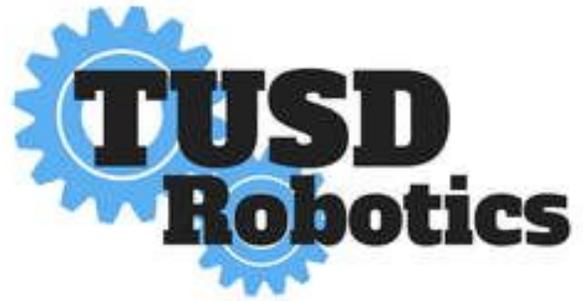
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Program Introduction

Welcome to the TUSD Robotics Program! This handbook provides the key policies and goals about the Tustin Unified School District's VEX Robotics programs, expectations from the student and adult members, and essential information about the program.



The success of the various TUSD Robotics Programs are due to the dedication of our members. Every member's commitment, persistence, and self-motivation allows our program to run smoothly and achieve the program's ultimate goal to prepare our students with life skills essential for success in life and their future career.

Mission and Vision

The mission of TUSD Robotics is to inspire students to pursue education and career pathways in STEM fields through engaging them in exciting, project-based engineering design challenges. While participating in our mentor-based robotics programs, students naturally build skills in science, technology, engineering, and mathematics that foster innovation, creativity, critical thinking, communication, self-confidence, and leadership. Students are prepared to become future innovators in STEM career fields who know how to work collaboratively, meet deadlines, and solve real-world engineering problems.

It is the vision of TUSD Robotics to develop students who have the confidence, skills, and desire to become the next generation of leaders in STEM career fields who will positively impact American culture and become well-rounded contributors to society.

Program History

TUSD Robotics was founded in the summer of 2014 during the Tustin Public Schools Foundation (TPSF) Summer Academy program. Four students from each of our six middle schools were chosen to create the first TUSD Robotics competitive teams. Soon after, more teams were added as seen in the timeline below.

Year	Number of Teams	Number of Students	Number of Events
2014 TPSF Summer Academy	6 Middle School	24	1 Showcase Scrimmage
2014-2015 School Year	12 Middle School	60	3 Unofficial Tournaments
2015 TPSF Summer Academy	6 Middle School	24 & 12 High School Mentors	1 Showcase Scrimmage
2015-2016 School Year	66 Elementary School 16 Middle School 9 High School	418	2 Unofficial Tournaments 2 Official Tournaments
2016 TPSF Summer Academy	6 Middle School	24 & 16 High School Mentors	1 Showcase Scrimmage
2016-2017 School Year	74 Elementary School 17 Middle School 10 High School	476	2 Unofficial Tournaments 3 Official Tournaments
2017 TPSF Summer Academy	6 Middle School	24 & 16 High School Mentors	1 Showcase Scrimmage
2017-2018 School Year	79 Elementary School 22 Middle School 11 High School	536	3 Unofficial Tournaments 5 Official Tournaments
2018 TPSF Summer Academy	6 Middle School	24 & 16 High School Mentors	1 Showcase Scrimmage
2018-2019 School Year	86 Elementary School 24 Middle School 12 High School	548	2 Unofficial Tournaments 5 Official Tournaments
2019 TPSF Summer Academy	6 Middle School	24 & 20 High School Mentors	1 Showcase Scrimmage
2019-2020 School Year	TBD	TBD	2 Unofficial Tournaments 6 Official Tournaments

We currently serve over 500 students each school year through after-school robotics programs and the TPSF Summer Academy program. Students have the opportunity to enter TUSD Robotics in 3rd grade and may continue through to their senior year in high school.

As the TUSD Robotics program grew, we began to find great success in the VEX and VEX IQ competitive community. Several of our programs are well known across the nation, winning a plethora of awards and attending many events. Some of our most notable accomplishments include:

- ★ 2015 - 2016: 2 teams qualified for State, 0 teams qualified for World Championships
- ★ 2016 - 2017: 15 teams qualified for State, 5 teams qualified for World Championships, 4 World Titles
 - VEX IQ Create Award
 - VEX EDR 3rd Place Robot Skills
 - VEX EDR Tournament Finalist
 - VEX EDR Judges Award
- ★ 2017-2018: 15 teams qualified for State, 9 teams qualified for World Championships, 3 World Titles
 - VEX EDR Build Award
 - VEX EDR Division Champion
 - VEX EDR World Championship Finalist
- ★ 2018-2019: 23 teams qualified for State, 11 teams qualified for World Championships, 5 World Titles
 - VEX IQ Innovate Award
 - VEX EDR Design Award
 - VEX EDR CAD Engineering Online Challenge Winner
 - VEX EDR 3rd Place Girl Powered Online Challenge Winner
 - VEX EDR Division Champion

What We Do

TUSD Robotics provides a variety of different programs for students to build their robotics knowledge throughout the entire year as described below.

VEX EDR

The VEX Robotics Competition is an educational and competitive robotics program for middle and high school in which teams of students design, program, and build robots to compete in an official game that changes every year. Throughout the school year, teams work together to prototype, test, and practice to compete in various TUSD-hosted and outside tournaments. Each middle school and high school in TUSD provides opportunities for students to join robotics teams either through in-class or after-school programs. All programs are run by certificated teachers who act as coaches.

VEX IQ

The VEX IQ Robotics Competition is an educational and competitive robotics program for elementary schools in which teams of students design, program, and build robots to compete in an official game that changes every year. Throughout the school year, teams work together to prototype, test, and

practice to compete in various TUSD-hosted and outside tournaments. Each elementary school in TUSD provides after-school opportunities for students to join robotics teams beginning in 3rd or 4th grade. All programs are run by certificated teachers who act as coaches for the teams.

PLTW Programs

Each TUSD middle school offers Project Lead the Way (PLTW) elective classes that lead to our 15 Career and Technical Education (CTE) pathways in high school. Several of these CTE high school courses include engineering and computer science and are interwoven into a student's school day. These courses provide opportunities for students to engage with engineering notebook documentation, the engineering design process, effective teamwork and communication, as well as other life skills essential in a CTE or STEAM-related careers.

TPSF Summer Academy

Alongside the competitive robotics programs provided throughout the school year, TUSD Robotics also provides classes at the Tustin Public School Foundation's (TPSF) Summer Academy. Hosted at Orchard Hills Middle School, robotics classes are provided for elementary students in the VEX IQ program in the Robotics 1.0 Class, students transitioning from VEX IQ to VEX EDR in the Robotics 1.5 Class, and middle school students being introduced to competitive VEX EDR in the Robotics 2.0 Class. Students may be enrolled in these classes through the [tpsf.net](https://www.tpsf.net) website, however Robotics 2.0 is an invitation only class and registration is not available to the public online. Robotics 2.0 students are selected and invited by the middle school site coaches. Check out the TPSF website for other STEM classes such as Drones that students may enroll in!

Mentoring and Volunteering Opportunities

The TUSD Robotics program advocates for a community-centered program, in which members across all of our schools work together to create an encouraging robotics community. Therefore, TUSD Robotics provides high school students an opportunity to become leaders by mentoring elementary and middle school robotics teams during TPSF's Summer Academy after completing the Mentorship Certificate Program.

TUSD Robotics tournaments are fully run by volunteers. All of the set up, break down, and field resetting is done by TUSD Robotics and Orchard Hills ASB Leadership students. Alongside these student volunteers, many community members and volunteers from companies and organizations such

as Panasonic Avionics, University of California Irvine, and California State University Fullerton volunteer as referees and judges at our VEX IQ and VEX EDR Robotics Competitions. We are always in need of volunteers to help run successful tournaments. Please go to or share <http://www.tusdrobotics.com/volunteer-information.html> to sign up and recruit volunteers.

Joining the Program

TUSD Robotics contains competitive robotics programs at each of its 18 elementary schools, 6 middle schools, and 3 high schools. Each TUSD school site runs their robotics program and application process a bit differently. To apply to become a TUSD Robotics member, please contact the robotics coach at your designated school site.

Code of Conduct

All TUSD VEX and VEX IQ Robotics tournaments are official event partners with the Robotics Education & Competition (REC) Foundation. The REC Foundation believes strongly that tournaments should be a positive experience for all who attend. The REC Foundation states:

“The Robotics Education & Competition Foundation considers the positive, respectful, and ethical conduct of all students, teachers, mentors, parents, and other event attendees an important and essential component of all VEX IQ Challenge, VEX Robotics Competition, and VEX U events. We expect the following behavior and ethical standards at all REC Foundationsanctioned events:

- Act with integrity, honesty, and reliability
- Behave in a respectful and professional manner with event staff, volunteers, and fellow competitors
- Exhibit maturity and class when dealing with difficult and stressful situations
- Respect individual differences
- Follow all rules as listed in the current game manual(s)
- Student-centered teams with limited adult assistance
- Safety as a top priority
- Good sportsmanship, which includes supporting your alliance partners

These expectations apply to all team members and all adults associated with a team including, but not limited to, teachers, mentors and parents. This Code may also apply to behavior outside of REC Foundation-sanctioned events where inappropriate actions are related to an event or participating individuals.

Judges will consider team conduct and ethics when determining awards. Repeated or egregious violations of the expectations in this Code may result in consequences up to the disqualification of the team or organization from the current event and/or future events, and potentially removal from the program after review by the REC Foundation.”

Additional TUSD Robotics Member Obligations

Robotics practices and competitions often induce intense, high stress situations. These are good opportunities to model and/or gain experience in handling these situations in a positive and productive manner. It is important that we all exhibit maturity and class when dealing with any difficult situations that may present themselves in both school site practices, scrimmages, tournaments, and our lives in general.

In addition to the REC Foundation Code of Conduct, all TUSD Robotics team members must:

- **Abide by rule <G1>** Treat everyone with respect. All Teams are expected to conduct themselves in a respectful and professional manner while competing in VEX Robotics Competition events. If a Team or any of its members (Students or any adults associated with the Team) are disrespectful or uncivil to event staff, volunteers, or fellow competitors, they may be Disqualified from a current or upcoming Match. Team conduct pertaining to may also impact a Team’s eligibility for judged awards. Repeated or extreme violations of could result in a Team being Disqualified from an entire event, depending on the severity of the situation.
- **Abide by rule <G2>** VRC is a student-centered program. Adults may assist Students in urgent situations, but adults should never work on or program a Robot without Students on that Team being present and actively participating. Students should be prepared to demonstrate an active understanding of their Robot’s construction and programming to judges or event staff.
- Allow for fair play and time limits on the practice fields at tournaments
- Speak to others in a calm and positive manner
- Congratulate and shake hands with all alliance and opponent members at the end of each match
- Never argue with a referee or coach, present your complaints in the proper manner to a head referee or TUSD Robotics lead representative
- Keep your work area tidy and clean up your entire area at the end of an event or practice

- Treat all equipment and supplies with respect and immediately inform your coach if any equipment is dropped, broken, or damaged. In some cases of negligent behavior, you may be responsible for replacing broken or damaged equipment.

Participation in Vex Forums

TUSD Robotics expects all of its students to behave just as respectfully and responsibly online as they do in person. Communication with robotics members from all around the world through the online VEX Forums provides for an opportunity to exchange robotics knowledge that benefits the entire robotics community. We expect our TUSD members to be kind, encouraging, and thoughtful with every post on any online communication platform. Please note that the VEX Forums are monitored and viewed by many in the VEX community. It is an expectation that all TUSD Robotics students participate in the VEX forum in a way that positively represents each individual, our teams, and our district program and provides positive contributions to the community.

Adult Roles and Participation

The TUSD Robotics Program seeks to develop student passion for and involvement in science, technology, engineering, arts, and mathematics (STEAM) through the competitive VEX Robotics Competitions.

Teachers/Parents/Coaches are allowed to provide guidance to help students fix, program, and design their robots. However, adults are not to engage in the process of building, programming or designing the robots. Adults doing the majority of the work on the robot is not acceptable, for it evidently limits student learning and ownership in that particular situation.

Teacher/Coach Roles

The certificated teachers who act as coaches for the TUSD Robotics program are adult mentors and robotics leaders at their school sites. Teachers/Coaches are expected to:

- provide the structure and resources necessary to support students in designing, building and programming robots
- facilitate teams in creating a timeline or calendar to help reach their goals for tournaments (including drive practice and autonomous programming)
- sign teams up for tournaments and support teams at events
- communicate with parents and facilitate necessary paperwork such as permission slips and release forms

- organize the design and purchase of team t-shirts or spirit wear
- communicate all needs for support with the TUSD Robotics lead and response to emails
- communicate and collaborate with site administrators, ASB leaders, PTO, and/or booster clubs to help support fundraising efforts and/or facilitate the purchasing of equipment and supplies

Parent Volunteer Opportunities

Parents play a vital role in the TUSD Robotics program in that they help support students attending practice, provide transportation to and from tournaments, and other volunteer opportunities. Parents must understand that the teachers/coaches are the adults responsible for their school's robotics teams. Therefore, if there are any robotics parts that the students lack, please allow the teachers to fundraise and purchase parts for the teams. Please do not buy and provide parts for just your robotics student and their team, because that provides unequal opportunities for the other robotics team that are a part of the program.

There are many ways parents can be involved in support school site robotics teams including:

- Helping to organizing snacks for practice
- Helping transport robots and equipment to and from tournaments
- Helping organize school site tournaments or run snack bars at tournaments
- Helping to find volunteers for tournaments
- Providing supervision at tournaments and/or practice
- Helping clean up after tournaments
- For more volunteer opportunities at tournaments, please go to <http://www.tusdrobotics.com/volunteer-information.html>

Communication

Communication is one of the most important skills to have regardless of an individual's field of work. However, on a robotics team, it is especially essential because you are working **as a team** to achieve the ultimate goal to make a complicated robot. It is essential that **every** student on the team is always aware of decisions being made on their robot and what is occurring on their team. Alongside informing their team, students must also always inform their teacher or coach about big decisions such as dismantling a robot or major changes to a subsystem of the robot. This also includes any new materials a team would like to order, any events a team

would like to attend, and any metal or parts a team would like to cut or modify (especially for middle school teams).

TUSD Robotics Mentors

TUSD Robotics provides high school and middle school robotics students the opportunity to mentor middle or elementary school teams. All mentors must be TUSD Robotics members and first complete the Mentoring Certificate Program which includes watching a series of videos with reflection questions that follow. Mentors will then be assigned to a school site and a visitation calendar will be created. Please visit the TUSD Robotics Website for more information or to apply to be a robotics mentor found at <http://www.tusdrobotics.com/mentors.html>.

It is important that all mentors communicate with the TUSD Robotics Lead in order to be signed up to mentor at a school site. The TUSD Robotics lead will set up mentors with the coach and administrators at the school site. It is important that mentors regularly communicate with the TUSD Robotics lead with questions or concerns and to prevent any discrepancies in the advice being given to the students. Signing up and spreading out the mentors among the school sites will also help provide support to as many schools as possible during the competition season. It is also essential for TUSD Robotics Mentors to maintain proper communication with their mentee teams and the school site coach about practice schedules, goals, deadlines, and absences.

What to Expect at a Tournament

Vex Robotics tournaments can create very high stress situations. It is important that your team is fully prepared to participate in the tournament and to not panic when things go wrong. Always expect the unexpected! Your robot will most likely break, disconnect, or run a strange code at various times at the tournament. Something will happen out of your control. Don't worry, that is normal in the world of robotics! Most important is that you don't stress out too much. There will always be someone willing to help and chances are that one of them will know what's wrong. Keeping a positive attitude and working well with your team is imperative to having a successful day. Most of all, don't be afraid to reach out for help!

Before the Tournament:

- ❑ Before you begin building a robot, review the Design Award Rubric updated for your current season and set up your engineering notebook for documentation of the designing, building, improving, and programming of your robot throughout the entire season.
- ❑ Make sure your robot is finished and functions on the field before you arrive at a tournament. It is better to keep a robot simple and reliable than trying to cram once last complicated feature into your robot that may not work as designed.
- ❑ Test your autonomous code and practice driving. You can never finish your robot too early. Drive practice is very important.
- ❑ Pack all tools, equipment, safety glasses, surge protectors, extension cords, charging cables, engineering notebooks, computers and other items that you will need at the tournament. Bring back ups of batteries, gears, chain, and other things that may break or need replacing. Label as much as possible with your team number.
- ❑ Fully charge all batteries and joysticks! Label them with your team number in case they are misplaced.
- ❑ Read and understand all game rules and expectations. The referee training videos provided by the REC Foundation are a great resource.
- ❑ Use the inspection checklist updated for your current season and make sure your robot is ready for inspection and is fully within size constraints. It is better to build a robot that is 1” smaller than the max size to ensure that the robot will pass inspection.
- ❑ Practice your interviews and have mentor run a mock judging session. Each person should know the whole story of your team and your robot. Try not to talk over each other and make sure everyone speaks in the interview.
- ❑ Complete and sign all necessary paperwork including TUSD permission slips, REC Foundation release forms and any other paperwork required by the tournament host.

At the Tournament:

- ❑ Coaches must check teams in at the Check-in table when you first arrive and turn in all required paperwork.
- ❑ Set up a neat and organized pit area.
- ❑ Decorate your pit area and market your team! Some teams give away buttons or bracelets, some dress up in costumes, and some hang banners. Be enthusiastic and make sure other teams know who you are so that you have a better chance of being known during alliance selection!

- ❑ Set up a charging station and assign the role of “Battery Manager” to a team member to help keep batteries charging all day.
- ❑ Highlight or circle your match times once the match schedule is delivered. Assign a “Match Schedule Manager” to a team member to help your drive team arrive with their robot, battery and safety goggles on time to the Queuing table.
- ❑ All team members must attend the Team Meeting before the qualifying matches begin.
- ❑ Safety first! Follow safe procedures and wear your safety glasses for every match and when needed in the pit area.
- ❑ Use the practice field to help your drivers and programmers get in any last practice or changes to code. Be considerate of others and do not take more than your fair share of time on the practice field.
- ❑ Arrive to the Queuing tables approximately two matches before your match time.
- ❑ Look at your match schedule and sign up early for an interview time with judges or make your team available when judges are interviewing in the pit area.
- ❑ Get your Robot Skills attempts in early between matches. Many teams wait too long and the Robot Skills fields may shut down early or the line gets too long after lunch to get your final attempts completed.
- ❑ Keep the same drive team for every match who practiced together before the tournament. Drivers should have a plan for each match and stay with the plan as long as possible.
- ❑ Make sure you talk to your alliance partners and coordinate a strategy before each match.
- ❑ Assign one or more team members the role of “Scouts” who observe and take notes on the other teams’ skills and strategies on the field during matches. This helps with alliance selection and helps the Drive Team determine a strategy for upcoming matches.
- ❑ When talking to judges, give them your full attention and be enthusiastic and coherent.
- ❑ When talking to referees, give them your full respect and speak in a calm manner. If you think a score has been added up incorrectly or a ruling is unfair, make sure to speak to the referees before picking your robot off the field. Accept all head referee rulings as final.
- ❑ Be prepared for alliance selection!
- ❑ Clean up your entire pit area and do not leave anything behind. Make sure all trash is thrown away and no food is left out on tables.

Dress Code at Tournaments

Every team in the TUSD Robotics program has their own set of robotics attire that they are encouraged to wear at robotics competitions. School site robotics attire allows programs to create a sense of team spirit and identity so that others can recognize their teams.

The following dress code standards are universal throughout the TUSD Robotics program:

- All team members must wear closed-toed shoes during robotics tournaments
- Safety Goggles must be worn at all times by students on the drive team during matches
- Safety Goggles must be worn at all times when cutting or modifying metal or VEX Robotics parts
- Please do not wear shoes on top of the foam tiles on the playing fields
- Please do not wear anything that would be inappropriate at a school event

Photography and Media

TUSD Robotics loves to share the amazing work of our school programs as well as our hosted competitions throughout many platforms of social media and photography. A photo release form is given to each student who is a part of the program and may be filled out to accept or decline permission for photography or videography. The video release will be completed once each school year.

To view photos courtesy of John Garrett, please go to the TPSF Smug Mug Robotics website at <https://tpsf.smugmug.com/Robotics-Program>

TUSD Robotics Tournament Schedule (Vex)

7:30 am: Registration Table Opens/ Teams Arrive/ Robot Check-In/Turn in Notebooks

7:45 am: Robot Inspections Begin

8:45 am: Drive Team Meeting

9:00 am: Opening Ceremony

9:15 am: Qualifying Matches Begin

12:00 pm: Lunch

12:30 pm: Qualifying Matches Resume

2:00 pm: Qualifying Matches End/ Alliance Selection Begins

2:30 pm: Finals Matches Begin

4:00 pm: Closing Ceremonies and Awards
4:30 pm: Event Ends
4:30 -5:30pm: Clean Up

TUSD Robotics Tournament Schedule (Vex IQ)

7:30 am: Registration Table Opens/ Teams Arrive/ Robot Check-In/Turn in Notebooks
7:45 am: Robot Inspections Begin
8:45 am: Drive Team Meeting
9:00 am: Opening Ceremony
9:15 am: Qualifying Matches Begin
11:30 am: Lunch
12:00 pm: Qualifying Matches Resume
2:00 pm: Qualifying Matches End
2:15 pm: Finals Matches Begin
3:00 pm: Closing Ceremonies and Awards
3:15 pm: Event Ends
3:15 - 4:00 pm: Clean Up

Events may run up to an hour longer depending on how long teams take to check in and set up at the game field and the number of timeouts requested. Teams should do their best to keep the tournament on schedule.

Engineering Notebooks

Engineering notebooks play an integral role in designing, building, and improving robots during the competition season. Notebooks are evaluated by judges using the Design Rubric at tournaments to help determine the teams who will receive the Design Award and Excellence Award.

Notebooks will vary between teams within the same robotics program and there is freedom in how the documentation of the engineering design process occurs. Below are some guidelines that might help your documentation process.

Headings are very important so the judges can find the information they are looking for at a glance. The headings should match the topics in the table of contents. Headings may include but are not limited to:

- Team Introduction
- Define the Challenge
- Brainstorming and Research
- Select the Best Approach
- Building
- Testing
- Programming
- Driving Strategy

Headings may alternate as students might go back and forth between building or testing during the iterative engineering design process. Students may also work on more than one problem at a time such as programming while other team members are building. It is expected that all progress is documented at each team meeting.

Common Rules for Engineering Design Notebooks:

- **Use a bound notebook**- three ring binders do not work. The process needs to be documented as it happens. Three ring binders have the ability to remove or add papers. This is against engineering notebook rules.
- **Label Page Numbers**
- **Use Ink** (we will accept pencil, but the official rules are ink)
- **Initial each page** when finished
- **Do not leave white space**, cross out extra white space when finished with a page using clean cross marks
- **Label Drawings**
- **Paste or tape in sketches or printouts**

Engineering Notebook Checklist

Table of contents

- Column for page numbers
- Column for Topics (Define the Challenge, Brainstorming and Research, Select the Best Approach, Building, Testing, Programming)

Team Introduction

- Team Bio (grade levels, school, team name, description of team)
- Team Pics (student pictures and names)

Define the Challenge

- Description of the Game (How do you score points? What does the game look like?)
- Criteria and Constraints of Game
- Criteria and Constraints of Robot (Size limit of robot, # of motors allowed, ect.)
- Explain the Engineering Design Process (Print out or draw)

Brainstorm, Research, & Develop Ideas

- What designs did you find online (print out or sketch, provide team # or URL where you got your ideas)
- Every student** sketches their own ideas from the research (chassis, lift, object manipulator; can be drawn together or separately.)

Select the Best Idea

- Sketch the final idea that students decide they want to build
- Provide reasoning why they chose this idea

Building

- Logs should be entered every time students meet and build
 - Include a date
 - What goals do you have for today?
 - Summary of progress towards goals and problems/solutions encountered along the way
 - Sketches with labels

Testing

- Logs should be entered every time the robot is tested
- Data can be observations or data tables with number of rings picked up in an amount of time

Programming

- Define the strategy of the program (ex- go to peg and lift up three green rings and go to vertical center pole to place green rings)
- Name of Program File
- Progress
- Goals
- Screenshot of Code

Driving Strategy

- Sketch the game field and elements
- Describe the team's driving strategy

Strategy & Scouting

At a tournament, you should expect constant interaction between teams and schools as they develop strategies with their alliances and against their opponents. Scouting is essential for top teams to be able to choose an alliance partner most suitable for them and their strategy to win the game. Scouting and strategizing can occur in the form of questionnaires that team members fill out as they talk to other teams or observations of a team through matches, practices, and robot skills.

What to Expect in a Judges Interview

Judges interview robotics teams to gain an understanding of the team's dynamics and how the entire team used the engineering design process to achieve the robot design that they built. Judges are often paired so that they can collaborate in their decisions. Judges ask questions about the robot design, team dynamics, team outreach, programming, the team engineering notebook, and the teams performance in current and their previous tournaments.

Judges expect every student present on the team to talk during the interview to display teamwork. They expect professionalism, projection of the student's voice, and answers that reflect what the students learned during their process of building the robot.

Awards Overview

Each tournament Event Partner decides which awards will be given out through the official judging process. The Robotics Education and Competition Foundation (REC Foundation) decides on the types and number of awards that will be qualifying awards for a State Tournament. This is not decided by the Event Partner. At TUSD Robotics hosted tournaments, the following awards will be provided:

Excellence Award

The Excellence Award is the highest presented award in the VEX Robotics Competition. Excellence Award winners exemplify an in-depth and professional engineering design notebook, a Tournament Qualification Matches ranking, a Robot Skills Challenge ranking, a stellar interview, and a high quality VEX Robotics Program.

Design Award

The Design Award is presented to the team that demonstrates an organized and professional approach to the design process, project and time management and team organization. This award is judged off of a teams' engineering design notebook as well as a team interview conducted by the judges.

Judges Award

The Judges Award is presented to a team that the Judges perceive as a team that deserves special recognition. The criteria for this award is solely based upon the Judges, and can include a team that displays unique attributes, exemplary effort or determination at the event, or team accomplishments that may not be fitting for any other award criteria yet still deserve recognition.

Sportsmanship Award

The Sportsmanship Award is presented to the team that has displayed exemplary kindness and support for their fellow teams and has earned the respect and admiration of the volunteers, judges, referees, and coordinators at the event. The Sportsmanship Award is an award that grants major respect for the team that has asserted courtesy, helpfulness, and respect to everyone around them in an atmosphere of high stress, anxiety, and competitiveness.

Qualifying for States and Worlds

Teams who become tournament champions at a qualifying season event will receive an invitation to the State Championship. Teams who become tournament champions at a State Championship will receive an invitation to the World Championships. Often the Design Award and Excellence Award are State and World Championship qualifying awards as well. Other awards that might qualify will be displayed on the Robot Event website for the tournament under the awards tab.

Travel and Competition Fees

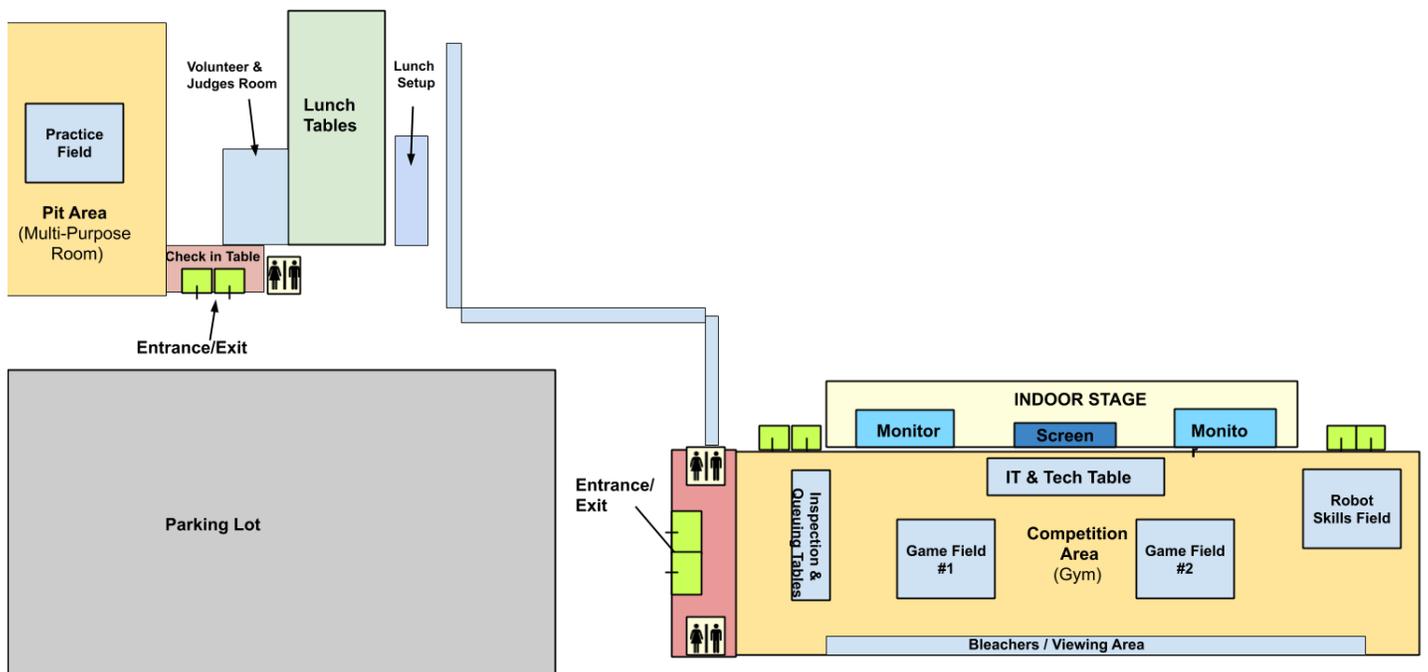
There are many tournaments hosted throughout Southern California and beyond that will require travel and transportation. It is the responsibility of the parent to coordinate the transportation of their child to and from the tournament. A TUSD permission slip is required for students to attend the event, but TUSD does not provide

transportation for students. Parents are also held responsible for all travel fees associated with an event including mileage, hotels, or booking of flights. Coaches will often host a parent meeting or communicate with parents to facilitate the parent coordination of travel arrangements.

TUSD Tournaments

TUSD Robotics hosts several tournaments at a discounted rate for TUSD Robotics teams. All TUSD tournaments are held at Orchard Hills Middle School in Irvine, California. The competition area is hosted in the Gym and the pit area is hosted in the Multi-Purpose Room. There is a short walk between the two buildings and it is important to bring umbrellas if there is a chance of rain. The address of the event is 11555 Culver. Dr, Irvine Ca 92602.

Below is the layout of the TUSD tournaments hosted at Orchard Hills School:



Outside TUSD Tournaments

Teams and coaches are encouraged to attend tournaments outside of TUSD. Teams who participate in multiple tournaments within a season tend to create and reach deadlines more quickly and iterate their robot design more often. Participating in multiple tournaments also increases the chance of earning a

ticket to the State Championships. Tournaments are all listed on the RobotEvents.com website found at <https://www.robotevents.com/>

The average fee for registering for an official VEX qualifying tournament is \$150 per team.

State and World Championships

If a team qualifies for the State or World Championships, it is expected that funds will need to be raised to help cover the costs of registration and other expenses that may occur in traveling to the event including the packing and transportation of the robot and equipment.

Coaches need to register teams for State and World Championships before the deadline once qualified. Championship tournaments fill up quickly and teams may not have their first pick of location for a championship event if teams are not registered soon after receiving their invitation.

The current fee for registering for a California State Championship is \$275 per team.

The current fee for registering for the World Championships is \$975 per team.

Supporting TUSD Robotics

TUSD Robotics is very appreciative of all who have volunteered their time and energy to help build our district-wide program. Special recognition must be given to the coaches and team members who spend countless hours and dedication to help provide such an extraordinary experience. The Tustin Public Schools Foundation (TPSF) and the Tustin Unified School District (TUSD) have worked together to proudly sponsor TUSD Robotics the startup and sustainability costs associated with this program.

Hosting TUSD Robotics Tournaments

TPSF plays an integral role in the funding and sustainability of the TUSD Robotics Program through support of TUSD Robotics hosted tournaments. Our main source of funding is raised through hosting tournaments for teams from around the Southern California area. Hosting tournaments is a community effort and would not be possible without the hundreds of volunteers who have helped out since 2014. The proceeds from these events goes directly to the Tustin Public Schools Foundation and is used to pay for yearly team registration fees, equipment, game field elements, volunteer food for tournaments and much more.

Donations

TUSD Robotics accepts donations from individuals, organizations, or companies through the Tustin Public Schools Foundation. Please contact Executive Director Carol Burby Garret at carol@tpsf.net if you would like to donate to our program.

Resources

[TUSD Robotics Website](#): Provides tournament dates and information about TUSD Robotics

[TPSF Website](#): Provides a calendar of events and information about TPSF

[VEX Forum](#): Provides an online space for VEX and VEX IQ team members to ask and answer questions about all things related to robotics and the competition season.

[VRC Judges Guide 2019-2020](#)- Current guide for judges for the 2019-2020 season with rubrics for awards.

[TUSD Robotics Youtube](#)- New TUSD Robotics YouTube Videos will be posted on this channel. Check out the first one on notebooking.