Makers OF THE FUTURE

Team Handbook

2025 - 2026 Season

Microchips & Queso

Gigabytes of Guac

The mission of Makers of the Future is to provide opportunities for students to learn engineering and business skills through competitive robotics in a professional and positive environment.

FIRST TECH CHALLENGE

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1. Welcome

Welcome to the Makers of the Future community! For the families who have been with us in the past and those now joining us for their first year, we want to celebrate the growing community that we are so fortunate to be a part of and to welcome you to it! It is because of each and every one of you that we are able to bring FIRST to more kids in the San Antonio community. In 2025, we rebranded our 501c3 from San Antonio Homeschool Robotics to become Makers of the Future, because we expanded our team to include students from any school and our goal is to offer more engineering opportunities. We are so excited to have you with us this season!

FTC caters to a variety of interests: computer science, engineering, physics, math, graphic/video artistry, business, communications, and writing. No matter where your interests are, there is something waiting for you on our team!

In this Team Handbook we will describe team essentials, the essence of Makers of the Future (MOTF) and FIRST culture, information, the expectations we have for students and parents as well as policies that everyone needs to be familiar with.

Team members and their parents are asked to read all sections to become familiar with the team's policies. At the end, in addition to signing a ridiculous number of waivers, you will be asked to sign and return an acknowledgment that you have read and understand the information, including policies on safety rules, time commitments and student behavior expectations.

This handbook is similar to a field guide in that it contains enough information to get everyone started on their journey ahead. Though there may be updates throughout the year, this is a good document to keep in a safe (and easy to remember) place to reference later. So, jump right in and get to know our culture and vision for our teams!

Daniel Espinoza
Head Coach

2. About FIRST and FTC

About FIRST

FIRST (For Inspiration and Recognition of Science and Technology) was founded in 1989. 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 (STEM), while building self-confidence, knowledge, and life skills. The intent is to inspire an appreciation for the real-life rewards and career opportunities in these fields by challenging students and their adult mentors to solve an intense engineering design problem.

FIRST Origins

FIRST was started by inventor Dean Kamen, who saw a culture based solely around athletics and celebrity gossip. Kamen realized that there is more need for people in science and technology careers than there are sports and entertainment. He partnered with Woodie Flowers, an MIT professor, to create FIRST.

FIRST redefines “Winning”

FIRST is More Than Robots. Teams are rewarded for excellence in design, demonstrated team spirit, Gracious Professionalism®, maturity, and ability to overcome obstacles. Scoring the most points is a secondary goal. “Winning” means learning, being inspired, and building partnerships that last.

What is FTC?

FIRST Tech Challenge (FTC) combines the excitement of sports with the rigors of science and technology. Participants call it “the hardest fun you’ll ever have.” Under strict rules, FTC teams are challenged to design, build, program, and operate robots to compete in a head-to-head challenge in an alliance format. Guided by adult mentors, students develop STEM skills and practice engineering principles while realizing the value of hard work, teamwork, innovation, and sharing ideas. Teams also must raise funds, design and market their team brand, create a 15-page engineering portfolio, and do community outreach for which they can win judged awards.

FIRST Impact

Colleges and employers recognize the crucible FIRST participants have been through, value their experience and expertise and actively recruit such students. Participants have access to over $80 million in scholarship money exclusively for students who participate in FIRST Robotics. Students who have graduated from FTC teams have gone on to attend some of the nation's top engineering schools and work with some of the world's biggest technology companies.

Skills Learned in FIRST

Students are inspired to become leaders and innovators, and enhance their 21st century skills. They are learning from adult mentors who are Engineers, Business and Marketing professionals, Scientists, and Leaders in their industry and profession. These mentors will share their knowledge and skills with students, including:

- Writing (technical, business, and creative)
- Public speaking, technical communication, and debate
- Advanced math and engineering skills
- The engineering design process and scientific method
- Computer programming and Computer Aided Design (CAD)
- 3D Printing
- Advanced machining skills using industrial-grade tools
- Graphic design, video production and photography
- Business planning, fundraising, project management, leadership, and teamwork

3. Team Overview

There is no prior experience necessary to become a member of a Makers of the Future team. However, team members are expected to be dedicated and hardworking. Our three requirements for students are: maturity, engagement, and commitment. This is a demanding program on par with any varsity level sport, but it is also one of the most rewarding things a student can do in their teenage years.

What do we do?

We design and build a really cool robot and compete against other robots in a game that's different each year! But it's more than just building a robot – our team operates like a small business and feels like a family. We have different "sub-team" groups that handle everything from marketing and fundraising to programming and electrical work. Even if you have no idea how to hold a wrench, there's something for you here, and we'll teach you how! FIRST is not just about robots; it's about ideas and people, too.

Why do we do it?

Because it's fun! FIRST is all about having fun while learning, and so are we! Along the way, you can learn technical skills in mechanical work, electrical work and computer programming, but you'll also learn about teamwork, leadership, respect, and integrity. You'll get hands-on learning from engineers and other professionals working in industry.

Who is this team for?

We are a community team mostly made up of homeschool students. However, charter, private, and public school students will be considered on a case-by-case basis.

Makers of the Future teams are ideally suited for teens ages 13-18, because the FIRST Tech Challenge competition requires sustained-focus, perseverance, and self-motivation for a successful season.

We require students to be taking a math level that is Algebra 1 or higher.

Where do we meet?
The teams meet in the coach's home and makerspace/garage in north central San Antonio.

How is the team run?
On the MOTF teams, mentors and coaches actively share their knowledge and experiences with the team to help foster intellectual growth. The mentors and students become united through a partnership. Each works collaboratively toward a mutual and beneficial goal. Mentors provide students with opportunities to make choices, both good and bad. Mentors demonstrate the value of success encountered during their career path and use these skills and successes to share knowledge and values with team members.

Team decisions are a collaborative effort between students and mentors. All opinions will be heard and considered. ***The teams should understand that in the end, responsibility lies with the coaches and mentors to ensure the success of the team and from time to time the coaches and mentors may steer and/or override a decision for the overall benefit of the team***.

4. Who are the coaches/mentors?

Head Coach / Software Mentor
Daniel Espinoza, the Head Coach, is the primary adult contact for the team, and has overall responsibility for team actions, decisions, and oversight of all mentors and student members. During meetings Daniel tries to check in with every student and see how they are doing, and encourages every student to "have a voice" through team discussions during meetings as well as in Slack team chats.

He likes to have fun and joke around, but when there's work to be done he expects everyone to give 100% and coordinates the mentors to assist when needed. Coach Daniel expects respectfulness, attentiveness and cooperation when it's Robotics Time, whether at meetings, build sessions, demos, fundraisers, traveling together or competitions. Coach Daniel looks for maturity, reliability, and enthusiasm as signs that a student is ready for more responsibility and leadership.

Assistant Coach / Business Coach
Amanda Espinoza assists Daniel in organizing the team and communicating with students. Coach Amanda coaches the teams to build team pits, engineering portfolio, posters, and presentations. She also assists with outreaches and administration needs.

Mentors

Mentors are adult volunteers, vetted by the Coaches and FIRST/MOTF (including background checks), who provide technical and business expertise to the team. They fall into three categories:

- **Core Mentors** actively guide robot development and team direction, often leading subsystems.
- **Non-Core Mentors** periodically support subsystems with the engineering process or business processes, deferring to core mentors as needed.
- **Rising Mentors** are recent high school graduates who support the teams while remaining acutely aware to not be viewed as a veteran student. Rising mentors are not given access to the mentor slack channel and may, periodically, not be allowed to participate in mentor meetings; primarily to avoid placing a rising mentor in a challenging situation where they feel an obligation to share private information with their former teammates.

Marcus Kety / Mechanical Engineer / Core Mentor
Mr. Marcus provides extensive training in CAD and mechanical engineering and instructs the teams with engineering best practices. Mr. Marcus is a Director of Mechanical Engineering at ITM, a local industrial automation company.

Non-Core Mentor Positions
Mrs. Sarah Curtis assists with fundraising training.

5. MOTF Core Values

Our core values guide all team decisions and ensure that we are operating with high integrity and within the values of the FIRST program.

1. **Positive Mindset** - Whether it's an off-season meeting or an important match, go into each situation with a positive attitude. If you go into a situation with a grumpy or bad attitude, you'll probably not have a good experience or be a good teammate.

2. **Empathy** - Empathy involves recognizing and appreciating different ways to solve problems and being mindful of how your words and actions affect others' feelings and experiences.

3. **Collaborative Teamwork** - Collaboration means asking "How can I help?" We're friendly, open, and curious, aiming to partner with others. This is a team effort. The team's overall accomplishments are more significant than individual contributions. Our wins, losses, and successes and failures are shared. We expect everyone to prioritize the team's needs over personal team goals.

4. **Gracious Professionalism** - Gracious Professionalism, a FIRST concept, promotes excellent teamwork, valuing others, and respecting everyone. It means competing fiercely while treating each other with kindness and respect.

5. **Coopertition** - Coopertition, a core FIRST philosophy, means teams should help and cooperate even while competing. It's about always competing but also assisting others whenever possible. Cheating, rudeness, and sabotage are never allowed.

6. **Resilience** - Iteration is crucial for robotics success, both for the team and individuals. We often try solutions many times. Even with persistent problems, the ability to overcome frustration and keep working towards a solution is a key FIRST lesson. We all share the same goal.

7. **Always Keep Improving** - Never assume you know everything. Always look for ways to improve yourself and the team. Every day is an opportunity to learn and improve. Try something new, work in a new sub-team, practice an old skill, etc. Be proud of what you've accomplished in the past, but don't use it as an excuse to stop improving.

8. **Invest in Yourself** - Your effort directly determines your rewarding experience on this team, where commitment and hard work earn opportunities over seniority. No adult mentor or student leader will 'make' a student do something. Robotics is a self-motivated elective. If you want to learn, ask a mentor or coach. If you want to work, pick up a tool or ask a mentor/coach (that is why they are there.) We will make every effort to encourage involvement by all team members, but in the end it's up to you. If you are not sure where you fit in, or aren't sure of what to do, please ask in Slack or talk to a mentor or coach as soon as possible.

6. Commitments

Being a member of the MOTF teams is a big commitment on many levels. This is an intensive varsity-level sport for Microchips & Queso and competitive junior-varsity level for Gigabytes of Guac. While we do allow members to occasionally miss meetings, they are expected to make a full commitment to the team.

Joining the MOTF teams requires a significant commitment of time, money (dues, fundraising, travel), and consistent daily communication via Slack for both students and parents. Members must adhere to team rules and expectations to maintain a positive environment.

6.1 Time Commitment

Being a member of the MOTF teams is a large time commitment for the team members and their families, especially from September to January when the robot is being built and we are preparing for the League Tournament.

FIRST Tech Challenge (FTC) is a year-round activity. The expectation is that team members will attend scheduled meetings, events, and competitions that take place throughout the year. While family and academic obligations come first, meeting your obligations to the team may mean rearranging your schedule to be able to participate in team activities.

- **Students are expected to be reliable, on-time, prepared to work, and arrive with physical energy and a positive attitude.**

To get the most out of what FIRST has to offer and to be a team member that others can count on, every team member needs to commit to making full participation in team activities a priority. Participation in other extracurricular activities such as jobs or sports should be carefully taken into consideration prior to joining the team.

We expect our team members to give the same commitment as they would to Band, Athletics, Choir, Theater, Speech & Debate, or any other heavily time-consuming activities. In order for the teams to be successful, each member of the team must be a contributing member. Students that treat robotics as a low priority or a "drop in when convenient" activity will be dismissed from the program. As a reminder, there is no refund of the participation fee if a student is dismissed or quits.

As a team, we understand scheduling conflicts and do allow members to occasionally miss meetings; but they are expected to make a full commitment to the team. When scheduling conflicts occur, we expect the student to inform their teammates, particularly the Head and/or Assistant Coaches, as soon as possible, preferably in writing through Slack or an email.

MOTF has room for different levels of student commitment. However, it is important for each team member to understand upfront that regular attendance often directly translates into more responsibility and voice in decision-making.

- **Team decisions are made by those who show up.**

While MOTF can sometimes work with a student to coordinate the MOTF schedule with their own personal schedule, forward progress for the team as a whole cannot wait for an individual team member. Decisions and completion of tasks may occur during a team member's absence, and such a decision is at the discretion of the team members, mentors and coaches present at the time. Partly due to the intense time commitment required by MOTF, the ideal age to join the team is 13 years old by Kick-off Day.

6.2 Supporting the Team: Dues and Fundraising

Participating in a FIRST Tech Challenge is an expensive undertaking. The annual budget for each team is around $20,000. MOTF relies heavily upon the support of our community through sponsorships, grants, and corporate donations. The remainder comes from team fundraising, individual donations and student dues.

Registration Dues

- **The registration fee is $900 per student for Microchips & Queso. Additional students on Microchips & Queso from the same family are $700 per student.**

- **The registration fee is $700 per student for Gigabytes of Guac. Additional students on Gigabytes of Guac from the same family are $650 per student.**

- **Team registration dues are required of all participants by July 1, 2025.** Payment can be made via check made out to "Makers of the Future."

Registration dues are an important part of our annual budget and help cover the costs of things like team registration fees and robot parts. **Registration dues are not refundable.**

Team Uniform: Students will be required to purchase a team t-shirt and khaki or black pants. Team hoodies will be available, but are optional.

Reimbursement & Fundraising

- **Students have the opportunity to fundraise and receive reimbursement for the registration fee once they raise an amount equal to or exceeding the amount paid. Reimbursement is available until Nov. 30, 2025.**

All students are expected to actively participate in fundraising. This participation takes many forms including our fundraising training, letter writing to friends and family, visiting potential corporate donors, assisting with grant applications, staffing our table at fundraising events, and writing thank you letters to donors and more.

MOTF teams may travel to two or three official competitions held during February, March, and April. We may attend FIRST World Championship competition (Houston) in April to be a competitor, volunteer, or spectator. Attending is optional. Each student and mentor must pay their own way (hotel rooms, meals, transportation, etc.) for each of these competitions (travel is not covered by dues). Families who think they may need financial help to travel must notify the Head Coach as soon as possible. Depending on the team's financial situation, there may be a partial scholarship available for travel.

MOTF does not want to exclude any interested student due to financial constraints. Please speak privately with the Head Coach if this is an issue for you. Hardship scholarship requests must be brought to the Head Coach well in advance of any payment deadlines for financial planning purposes.

6.4 Team Communications

Clear and consistent communication within the team is vital to our success and is an integral part of the teams. We use Slack for communication for both students and parents. Each student will get access to Notion. A team calendar subscription will be required for all team members and parents to receive up-to-date information.

Students and parents will be given a team Slack account.

Slack profile photos should be professional and align with the rules of the team. Member profile photos may be photos of themselves or an animal. No words should be on a profile photo.

Our primary method of communication is Slack, an online chat tool with both web and mobile apps. Students are required to check Slack regularly. This means at least daily during busy seasons, as well as making sure their phone is charged and battery is conserved during competitions.

We aim to prioritize personal growth and responsibility alongside technical skills. We encourage students to communicate directly with the team and mentors in person and in Slack channels.

7. Team Behavior and Rules

Each team member is ultimately responsible for his/her own behavior. However, team members' behavior will reflect on the team and the sponsors. You are expected, at all times, to be polite and respectful of everyone. We are all role models and our goal is to present an image that is positive and in the spirit of team building – not a phony image, but an authentic attitude of appreciation and professionalism.

Be Respectful: Team members are expected to be respectful at all times. This includes not talking over your teammates or holding side conversations when others are talking, refraining from the use of inappropriate, offensive, or foul language, and being respectful of everybody's ideas and opinions. No bullying will be tolerated, whether physically, verbally, emotionally, or on social media or Discord.

Cell Phone Use: During meetings, cell phone use in the service of the team is encouraged. Cell phones that distract from the discussion or work at hand will be asked to be put away. Additionally, team members will not be permitted to play video games during meetings or times when they could be more productive. Recreational cell phone use should be saved for after practice.

Attendance: All team members are expected to attend as many meetings as possible. Be prompt at all meetings and bring all required materials. Attending at least one outreach event is highly encouraged!

Tool Safety: We take tool safety very seriously and make it clear that mentors and coaches have the absolute say in when it is or is not appropriate for a student to use a tool. No student is allowed to use a power tool without first being trained on how to safely use it. A safety addendum is available at the end of the handbook with specific safety rules.

Injuries: Safety is our utmost concern. If you are injured, you MUST report it to a mentor.

Workshop Cleanliness: No cups are allowed in the workshop, only closed-lidded bottles.
Clean up after yourselves. This includes breaking down the field, putting away tools and materials, and sweeping the floor and wiping work tables after working in the shop. (Do this even if you're not the last to leave!)

Dress Code: Team members must adhere to the dress code in the addendum at back of the handbook. For safety, closed-toe shoes and safety glasses are always worn in the workshop.

Dating: Dating within the team is not allowed. Dating creates awkward situations both during the relationship and when it ends. This is to protect the best interests of the team and prevent awkward or uncomfortable situations for other students on the team.

There are certain behaviors that are unacceptable as MOTF team members. Though we don't expect that these behaviors will occur, we feel it is necessary to be very clear about them:

- Students will not display violent, harmful, or abusive behavior, whether it is directed at other students, mentors, coaches, the public, the facilities or themselves.

- Students will not use or bring tobacco, alcohol, vapes, or illegal drugs. They will use prescription drugs or over-the-counter drugs only in ways prescribed and will communicate with the mentors and coaches when doing so.

- Students may not have weapons or dangerous items, including pocket knives and 3D printed weapons during any MOTF activities.

- Students will listen to and respect the "mentor override" of mentors and coaches and follow it. If students are unable to do this, it puts them and others at risk.

8. Dress Code

Workshop Dress Code: The Workshop Dress Code is important for physical safety while working in robot construction areas. It applies to everyone in the shop and work area – parents included. Students who are not dressed appropriately for participation will be asked to return home to change before they can participate.

- Eye Protection – Safety glasses must be worn at all times while working with a robot or power tools. The team provides safety glasses, though you may want your own personal pair.
- Closed Toe Shoes – Tennis shoes or boots preferred. No crocs or sandals.
- Long Hair Pulled Back and Secured – Long hair can easily be caught in spinning power tools. Nobody wants to be scalped!
- Additional Protection as Required – Team members may be required to wear gloves, face masks, or ear protection during certain tasks. These will all be provided by the team.
- Family Friendly Attire – Clothes must not have profanity, vulgar, political, or divisive, statements.

Public Event Dress Code: Public events include fundraisers, demonstrations, recruiting and outreach activities, and competitions. When we are at these public events we wear:

- Team Shirt – this will be purchased by parents and may not be modified.
- Long Pants - Jeans or khaki pants (shorts may be allowed at summer events at the discretion of the coaches).
- Closed-toe shoes – Tennis shoes or boots.
- Hygiene - have a clean appearance.
- Other items as deemed necessary or appropriate by the coaches or mentors.

9. Safety Rules

Please be aware of these safety rules:

- Act in a responsible manner at all times in the building and construction areas. Each student must consider it their duty to protect themselves and their peers from accidents and unsafe behavior. **Horseplay and goofing around are not tolerated.**
- Wear eye protection at all times when working with hand or power tools or working anywhere near someone who is using hand or power tools.
- Tie back long hair, remove dangling jewelry, secure loose clothing, and wear shoes with closed toes.
- Never use a power tool without direct coach, mentor, or approved staff supervision.
- Students will be respectful of the coaches and mentors and adhere to any reasonable requests they make.
- Parts being machined need to be well-secured with a vise or clamps.
- No student should ever operate a machine when another student is standing too close.

- Do not distract or startle the operator of any machine. Wait until they are finished using the equipment.
- Always use the correct tool for the job being done.
- Batteries on the robot should always be disconnected during maintenance or repair.
- When the robot is running, everyone in the area should have an elevated sense of caution and someone must be ready to power off the robot, especially when testing autonomous modes. The magic words to stop the robot are “STOP STOP STOP!” or “HOLD HOLD HOLD!”
- All tools are to be treated with care.
- Know where a first aid kit is located and what should be done in an emergency. Report all injuries to the coach or a mentor.
- Immediately report any unsafe condition or activity to a coach and/or mentor. If a power tool malfunctions or breaks, report it to a mentor immediately.
- Electrical devices must never be powered by daisy-chaining cords or power strips.
- Students are strongly encouraged to be current on their tetanus vaccination.
- Any and all unsafe behavior will receive one warning. After one warning, if the behavior continues, appropriate disciplinary measures will be taken.
- All team members will be working on the robot. This necessitates a working knowledge of tools that are used in the shop. Regardless of how a particular student participates on the team, they must be familiar with and know how to use all of the tools and machinery in the shop.

10. Discipline and Dismissal Policy

If students don't follow the behavior rules, mentors and coaches will determine what discipline option best fits the circumstance. The following is a list of ***possible*** options that mentors and coaches will use. The first two options will always be incorporated-- ranging from a gentle reminder like a hand on a shoulder, to a heart-to-heart conversation, or, if needed for safety, mentors and coaches may need to simply say, “Stop!”

Mentors and coaches commonly strive to co-create solutions with students, but in some unusual cases (when physical and/or emotional safety is at risk) a decision may not be open to negotiation (though we will be willing to hear the student's perspective afterward). Respect, understanding, and communication will be priorities in all situations.

Mentor/Coach responses to student behavior when a rule is broken:
(listed from gentlest to most severe)

1. Remind the student of the rules.
2. Support the student in shifting their behavior.
3. Ask the student to step out of the makerspace and take a moment to calm down.
4. Contact the student’s parents after the meeting. (Parents often can help mentors/coaches and students understand each other more fully.)

If needed for safety or to maintain a healthy learning environment for all, MOTF reserves the right to:

1. Call the parent during the meeting to pick up their student.
2. Ask the parent (non-mentor) to attend meetings with their student.
3. Ask a student to “take a week off”.
4. Dismiss the student from the team. – This would occur only if the previous steps are not effective or if a serious infraction occurs.

A student may be dismissed from the team for a lack of enthusiasm or commitment. Parents will be informed, and if the student's mindset or attitude doesn't change, the student may be released from the team to explore other interests.

11. Conflict Resolution

When any group of people gathers around a goal, there may be some disagreements and awkward moments. Many of these can be properly resolved by overlooking small offenses and forgiving the person who caused the offense. Because of this, we ask that you take time to reflect about the issue to decide if it is important enough to address. If, after reflection, you have the peace to dismiss the issue, then it is passed and forgotten. The goal is positive progress, forgiveness, and friendship. If, however, you feel the offense must be addressed, the following guidelines have been established:

1. The offended should seek to resolve the conflict between only the individuals involved. This means to admit what parts of the conflict are caused by each party, apologize and seek forgiveness. Real forgiveness is when you promise those involved to think charitably about them, to not bring up the matter again to be hurtful, to not gossip about them, and to resume the friendship enthusiastically. This should be done in a timely manner, preferably within 24 hours.

2. Should the offended party feel threatened or unable to personally address the issue, they may seek the assistance of a mentor or coach to mediate between the individuals. Parents of student members involved may also be asked to help with the mediation.

When working through conflict, we are always mindful of the MOTF Core Values and Guidelines as presented earlier in the handbook.

The coaches and mentors seek transparency and to the best of our judgment, inclusiveness in deliberations. Confidentiality sometimes trumps transparency. Time sometimes stumps our efforts. But in general, we want everyone to have input on issues that affect them. If you find yourself disagreeing with a decision made, our mentors and coaches are committed to hearing your dissent with a peaceful and compassionate ear and working toward understanding.

At no time should these conflicts or the mediation thereof be discussed with other individuals who are not directly involved in the conflict or the mediation. The coach or mentors, at the coach's discretion, will provide any counseling required to the student members. Student members should not take it upon themselves to provide counseling to other student members.

12. Parent Involvement

Parents/guardians are an integral part of our team and important to our success! The team becomes close throughout the year because the members spend so much time together. Having the involvement of our parents only enhances this experience. Parents may offer assistance but should recognize that approved and pre-screened mentors are placed in positions of expertise and parent "help" can quickly turn into interference. So, use of discretion is encouraged. If you are interested in becoming a team mentor, please see the Head Coach for a mentor packet and application.

MOTF meetings are a "drop off" activity. However, we may request parents of middle school students to stay during meetings for the first few weeks to ensure the student's success.

We welcome parents to stay and observe!

Due to space and safety concerns, additional kids or siblings are not allowed at meetings without prior approval of the coaches.

Other ways parents/guardians are important to our team include:

- **Timely Transportation:** Please be on time for drop-off and pick-up of your student. If a student must come late, they should let the team know via Slack as soon as possible. At the end of the meetings, team coaches/mentors will wait with the students until they are picked up, so please be respectful and arrive on time.

- **Snacks:** All parents are expected to help out by providing snacks throughout the year. Keep an eye out for a link to a Sign Up Genius form.

- **Setting up and tearing down pits:** During tournaments, each team is given a 10 x 10 x 10 foot area to host their team and work on their robot. Setting up and tearing down the pit needs to happen quickly, and parent help is encouraged and much appreciated! Please let one of the coaches know if you are available to lend a hand with this important task.

- **Scouting and Scoring:** During meets and tournaments parents may be asked to score matches or scout other teams using an app. It's really fun to know the game rules and get invested in all the teams! Training will be provided for all parents.

- **Supporting your child, respecting the team, its mentors and its sponsors:** It is important that parents are respectful of the team and its goals. Collectively, the team's coaches and mentors spend countless hours working with the team and preparing behind the scenes. While you may not always agree with some of their decisions, please trust that they have the best interests of your child and the team in mind.

In addition, remind your child that it's important to actively participate. When first joining the MOTF teams they'll find new people, new things, new rules, etc. All this can be pretty intimidating to a new member. The MOTF teams are going to push students out of their comfort zone from time to time. It's important that you encourage your child to embrace these new experiences rather than run from them.

Parents should keep in mind that the MOTF FIRST Tech Challenge teams aren't for everyone. Some students don't like the team aspect, some don't like competition, some just aren't open to STEM or robotics, etc.

It's important not to force your child to stay on any MOTF team if they're truly not interested. This doesn't mean they're not a fit for STEM or robotics, maybe it's just not right for them at the moment, but it's not fair to them, the mentors, the coaches or the rest of the team to force them to keep attending out of any duty or obligation.

In a similar vein, MOTF cannot be all things to all people. MOTF teams have established a very particular culture in which mentors and students collaborate. We work very hard to maintain a positive and enriching teaching environment where teens learn from experienced adults and they work together to achieve team goals.

MOTF's Collaborative Culture

We are neither an “unschooling” team, nor a “classical” college-preparatory team, nor do we follow any other particular schooling philosophy. Our team members come from varying backgrounds including different religious and political views, different parenting styles and educational philosophies, we may include private schoolers, public schoolers and homeschoolers, and we have different family make-ups. While at MOTF, team members and their parents are expected to conform to the MOTF non-discriminatory, collaborative culture. This extends to supporting sponsors you may not agree with – or at least keeping your current views about them private. Usually, our sponsors are local business or tech companies and this has never been an issue. Let’s focus on being gracious professionals who build robots together!

How to Contact Coaches and Mentors

During our most active seasons, if you want to speak to a coach or mentor, the best time to reach them is immediately after meetings. We find email or a Slack DM to be an effective way to relay information or to schedule a conversation, but experience tells us email is not as effective for addressing topics that are worthy of dialog (especially relating to any topic that is attached to emotions like frustration or anger.) Coaches and mentors are available for spontaneous or pre-scheduled conversations in the 15 minutes after meetings end, or at other times upon request.

If you have information to relay to the coaches or mentors that has to do with that meeting day, please let them know at drop-off. Also, be aware that at drop-off, coaches and mentors are taking on the responsibility for many students and trying to begin the meeting on time, thus they might not be as available to connect, as they would be after the meeting.

Please note that the coaches and mentors always want to hear your concerns. However, we must state openly that we expect parents to bring concerns to the Head Coach earlier, rather than later, at appropriate times (not publicly in the middle of a meeting or on a group-wide Slack channel) and in a respectful, mature way. Concerns need to be voiced to only the parties concerned. If you have any questions or concerns about the team or your child, please bring them to the attention of the Head Coach ASAP so they can be addressed and not compounded into larger issues. Please respect the fact that the coaches and mentors are not trained teachers in your employ, that they are volunteering their personal time as well as personal resources while either working full-time jobs or schooling their own children.

- **We will not tolerate destructive adult drama, malicious gossip, or repeated fomenting of drama. Parents who are not willing to speak directly, respectfully or at an appropriate time to the Head Coach, or who are unable to communicate with the team leadership in a mature and professional manner jeopardize their child's continued participation on the team.**

Competitions: We encourage the entire family to attend competitions, both in and out of San Antonio. This includes siblings, parents, grandparents and friends. Competitions are free to attend. Whenever you are representing any MOTF team, whether it be wearing a fan t-shirt or visiting the pit during competition, all attendees are expected to model Gracious Professionalism at all times.

13. Health Policy

Medical Forms and Emergency Response

Each team member is responsible for completing the MOTF Medical and Release Form prior to attending our meetings. Full disclosure of issues affecting your participation or interactions with the rest of the team is required and important to your safety and the well-being of the team. In the event of an emergency, forms are consulted, and the coaches and mentors will follow the team's Emergency Response Plan.

Please be sure to return your Medical & Release Form on or before the first meeting attended.

Health / Illness Guidelines

We work in close quarters and it's easy for germs to get passed around. In the past, FTC teams have had illness take down the whole team, putting them several days behind schedule during Build Season. Please be respectful of others and stay home if you are sick.

Students who come to robotics sick may be sent home or asked to wear a mask. If a student or adult has had any of the following symptoms within 24 hours, he/she should not come to meetings:

- Fever, Vomiting, Diarrhea, or a communicable disease (e.g. COVID-19, chicken pox)

The Head Coach should be notified when you or anyone in your family has a communicable disease other than a cold so others can be aware and alert to symptoms.

Illness & Emergency Response Plan: If a student becomes ill or injured at a team meeting or event and is unable to contact a parent themselves, a designated adult will call a parent or the emergency contact listed on the student's Medical Forms so they can be picked up.

Even if a student is not able to make a scheduled meeting, he/she is encouraged to work on anything they can at home.

14. Team Calendar and Schedule

A team calendar subscription will be required for all team members and parents to receive the most up-to-date information.

The competition schedule from FIRST is not released until September.

June, July, August (off season)	● Summer activities include off season training over Zoom or Slack Huddles or summer projects. ● Fundraising training and contacting companies for sponsorships, because we want to be done fundraising before September. ● Team building and professional training in August. ● Summer practice dates: ○ July 12th, Saturday 2:00 - 5:00 p.m. ○ August 4, 2025 – 6:00 – 9:00 p.m. Summer Training ○ August 5, 2025 – 6:00 – 9:00 p.m. Summer Training ○ August 6, 2025 – 6:00 – 9:00 p.m. Summer Training
September - December	● FIRST releases its calendar of events and other competition information. ● September 6, 2025 is the FIRST Tech Challenge Kick Off event. This is a lot of fun and attendance is **mandatory.** ● Build Season! ○ Design and build teams are busy creating a robot! ○ Programmers will need to program the robot before the first competition. ● **The first league meet is in November!** ● **The second league meet usually happens in December.** ● Meeting times: ○ Every Tuesday 6:00 - 9:00 p.m. ○ Every Saturday 2:00 - 5:00 p.m. ● Extra meeting times may be required.
January	● **This could be our third league meet.** ● **Our fourth meet, League Tournament, is where the teams will give a presentation to judges and turn in a 15 page portfolio for judging.** ● Meeting times: ○ Every Tuesday 6:00 - 9:00 p.m. ○ Every Saturday 2:00 - 5:00 p.m. ● Extra meeting times may be required.
February	● Either Semi-Regionals or Regionals Tournament based on advancement. The location of both tournaments have not been released yet.
March - April	● The Texas State Championship is two days in March in Belton, TX. (Usually the third or fourth weekend in March.) ● The 2026 World Championship Dates are April 29 - May 2, 2026 in Houston, TX. ● ***A new play-off schedule may be announced for the 2025-2026 season. We will inform everyone once we know the schedule!***

14.1 FTC “Seasons”

MOTF teams are busy throughout the entire year! This quick, at-a-glance view of the “seasons” will give students a better understanding of the commitment level needed during the year.

- **Summer - June, July, August:** Learn as much as you can! Students may do an off-season project, work on fundraising, and work at outreach activities.

- **Build Season - September, October, November, December:** Teams continue to learn new skills to build a robot and prepare for competitions.

- **Competition Season - January, February, March, April:** Teams are focused on competitions and working on tasks to win matches while utilizing the skills they learned in summer and build season.

14.2 Approximate Meet Schedule & Locations

The official league schedule is released in September or October.

League meets are on Saturdays and are usually once per month November through February for a total of 4 guaranteed meets. League meets may be at Judson Middle School (9695 Schaefer Rd, Converse, TX 78109) from 8:00 a.m. to 3:00 p.m.

Practices continue alongside meets. Some team members may want to meet up for an extra practice before a meet day to ensure the robot is working and to get driver practice.

If the team qualifies for playoffs then extra meets will be in March and April.

Outside of official competition meets we participate in scrimmages with other teams to prepare for competition. In the 2023-2024 season we participated in 3 scrimmages in San Antonio and 2 scrimmages in Austin for Microchips & Queso.

14.3 Approximate Outreach Schedule

We are currently looking for outreach opportunities and these will be scheduled at a later date. We hope to do at least two events or workshops at a festival, science fair, or school.

15. Team Roles

While a student may be assigned a certain team role, this does not prohibit them from expanding and learning additional roles as time permits. The undertaking of learning additional roles is always encouraged so long as the student is meeting their primary role's responsibilities.

Below are suggested team roles:

- **Project Manager** – Manages project timelines and facilitates communication to ensure a seamless workflow.
- **Programmer** – Responsible for overseeing all programming of the robot.
- **Designer** - Responsible for overseeing all the Computer Aided Design (CAD) of the robot and building the robot.
- **Quality Assurance** – Responsible for making sure the robot is built in a sturdy way and that everything produced by the group has a quality look. Design and perform tests to ensure the robot meets requirements.
- **Documentation** – Responsible for the quality of the written material produced by the group. This person should not write the entire engineering portfolio alone.
- **Data Analyst** - Responsible for scouting other teams. This person collects data and clearly presents the data to the rest of the team.

16. Competition Teams

Drive Team: The Drive Team will be determined (ideally) during the middle of the build season and will be based on a number of tasks, including a test on game rules, a driving obstacle course, and other challenges the mentors and coaches deem applicable. All team members will have the opportunity to participate in preliminary tryouts.

The Drive Team is typically made up of three or four positions as outlined below:

- **Driver:** The Driver is responsible for driving the robot on the game field.

- **Operator:** The Operator assists the Driver and may control manipulators on the robot. Not every robot requires an operator.

- **Human Player:** The Human Player is responsible for retrieving and returning game elements through mechanisms provided by the game field. The exact role is modified every year according to the game rules.

- **Coach:** The Coach is responsible for being the "eyes of the match" and directing the Driver, Operator, and Human Player through an adaptive strategy all while monitoring the time, the score, and the actions of other robots. This role always remains a positive cheerleader for the team.

During tryouts, coaches watch the candidates through practices and trials to assess communication skills and the ability to drive/operate successfully. We also routinely pair up different driver/operator combinations until we have come up with the combination of people that we believe will work the best. These trials are specifically designed to display the abilities and skills of all the candidates and simulate how they would perform under real match conditions/scenarios. Since the Drive Team IS a team, we will select students for positions based on their ability to work well with each other as well as their objective skill. Teamwork, communication, and demonstrated leadership are key here.

Drive Team members are responsible for:

- Attending all scheduled practices between and during competitions.
- Attending all of the MOTF competitions.
- Attending all of the MOTF scrimmages.
- Maintaining a high level of dedication to the team.
- Having a complete understanding of FIRST's rules and regulations to minimize errors and penalties during competition.
- Listening to their coach's instructions and following through – both during the match and off the field.

Pit Crew: Members of the Pit Crew troubleshoot various aspects of the robot during competition events. This crew will stay in the pit area as necessary. The pit crew is also responsible for speaking with judges at competitions when they approach the pit. Each pit crew member should be able to specifically describe various aspects of the robot, and what the robot does on the game field. The pit crew should also have knowledge of the team's off-season events, fundraisers, and outreach activities. Since we never know which judges will visit the pit, all members of the pit crew should know the business plan, safety procedures, and details about the robot.

Criteria for being selected to be a member of the pit crew includes, but is not limited to: the drive team, the safety captain, sub-team leads, and possibly students who have demonstrated exceptional knowledge during the engineering and building of the robot.

Scouting Team: Scouting is the important practice of observing and recording data on other robots in a competition to learn their strengths and shortcomings. That information is then used to aid the drive team in entering a match well-informed about their partners and opponents. It is also compiled into lists and other formats to aid our alliance in selecting partners for the elimination rounds.

There are three main types of scouting that this team will be responsible for:

1. **Pre-Competition Scouting:** The collecting of information before events from in-person or recorded competitions (YouTube or Twitch videos) on competing teams, including their strategy, robot capabilities, robot consistency, Win/Loss ratio, etc.

2. **Pit Scouting:** This allows teams the chance to explain their robot and strategy themselves. Pit scouting generally includes talking to teams in their pits personally, so as to get to know their robot and members.
3. **Match/Alliance Scouting:** This includes collecting stats on other teams as they play qualification matches. Things like number of game pieces collected, penalties, speed and efficiency, etc.

Scouting is a very important part of the competitions we attend! Team members (regardless of their position on the team), parents, mentors, and supporting fans may all be asked to pitch in and help collect match data from the stands.

17. Student Leadership

There are lots of opportunities for students to gain leadership skills on the MOTF teams. From leading an individual project or leading an entire sub-team there is something for everyone. Some of these opportunities happen organically while some may be more formal, elected positions. The leadership of the MOTF teams are a cooperative effort between coaches and student leaders.

For those students looking to be leaders, the coaches are looking for follow-through from students on assigned tasks. When you take on a task, do you complete it? Or do you have to be reminded by the coaches? Or worse, do you allow tasks to fizzle out even with constant reminding from the coach? Are you looking ahead and identifying team needs and solutions? Are you stepping up to the plate when opportunities present themselves and are you carrying them to completion? Are you asking for help as soon as you realize you need it? Great student volunteerism and successful follow-through to completions are noticed by the coaches and earn that student more trust and responsibility.

If you are a student who wants to lead more, you want to be the student who is thinking ahead, proposing ideas, encouraging other students to join in tasks and most critically executing what you have committed to all the way to completion (even if you need to ask for help along the way). Students are encouraged to have an open dialog with their coaches about how to grow their leadership skills.

18. Social Media, Photos, Publications

Being active on social media helps our team attract sponsors, recruit new members, interact with other teams, and keep family and friends up to date on our team progress. We pride ourselves on having a strong social media presence. This means we take a lot of photos! All team members will be required to sign a Media Release document at the beginning of each year. Team photos may also show up in printed materials such as brochures and fliers, or on our website or blog.

Here is a list of our team's social media pages. Bookmark and share our links, follow the team, and join in the fun!

Website: https://sanantoniohomeschoolrobotics.com/
Website: https://microchipsandqueso.com/
YouTube: https://www.youtube.com/@microchipsandqueso
Instagram: https://www.instagram.com/microchipsandqueso/
LinkedIn: https://www.linkedin.com/company/microchips-queso/

To maintain the team's high standards of quality and imagery, the marketing team and mentor must approve any documents or media pertaining to the team prior to their release. This includes grant applications, award submissions, publicity materials, news articles, pictures, videos, and posts to social media or discussion forums.

When posting about a MOTF team on your own personal social media pages, team members and parents are expected to conduct themselves with Gracious Professionalism. When you speak as a member of a MOTF team, you must speak respectfully. No member of a MOTF team, adult or student alike, is permitted to post threatening, harassing, illegal, obscene, defamatory, slanderous, or hostile posts towards any individual or entity, nor to share information that violates the privacy of another person.

Appendix A: Accomplishments

Microchips & Queso FTC 23350
2024 - 2025: Into the Deep
FiT-Central NERD League Tournament
Winning Alliance - Captain
1st Place Inspire Award
FiT-Central Regional Championship
Inspire Award 3rd Place
Finalist Alliance - 1st Team Selected
Lise Meitner Division Winning Alliance - 1st Team Selected

Gigabytes of Guac FTC 25959
2024 - 2025: Into the Deep
FiT-Central NERD League Tournament
Winning Alliance - 1st Team Selected
Think Award
FiT-Central Regional Championship
Alliance Captain in Playoffs, with a high score of 270

Microchips & Queso FTC 23350
2023 - 2024: Centerstage
League Tournament
Winning Alliance First Pick
3rd place Inspire award
1st Place Think Award
Central Area Championship
2nd place Design Award
Advanced: Highest Ranked Team Not Previously Advanced (Winning Division)
State Championship
1st Place Design Award
Winning Alliance Captain - Johnson Division
Finalist Alliance Captain - Texas Championship Finals
World Championship
Went 7 - 3 in Qualification Matches and finished in 11th place
3rd Place Design Award
BUC Days Robot Rodeo
Winning Alliance
Gracious Professionalism Award

Special Thanks

San Antonio Homeschool Robotics unashamedly plagiarized all the best parts in this handbook with permission from FRC Team 6377 Howdy Bots. Also, thank you to FTC Team 9929 Tech Ninja Team for publishing their handbook online.