



**THE GREEN
MACHINE**

EDINA ROBOTICS *FIRST* TEAM

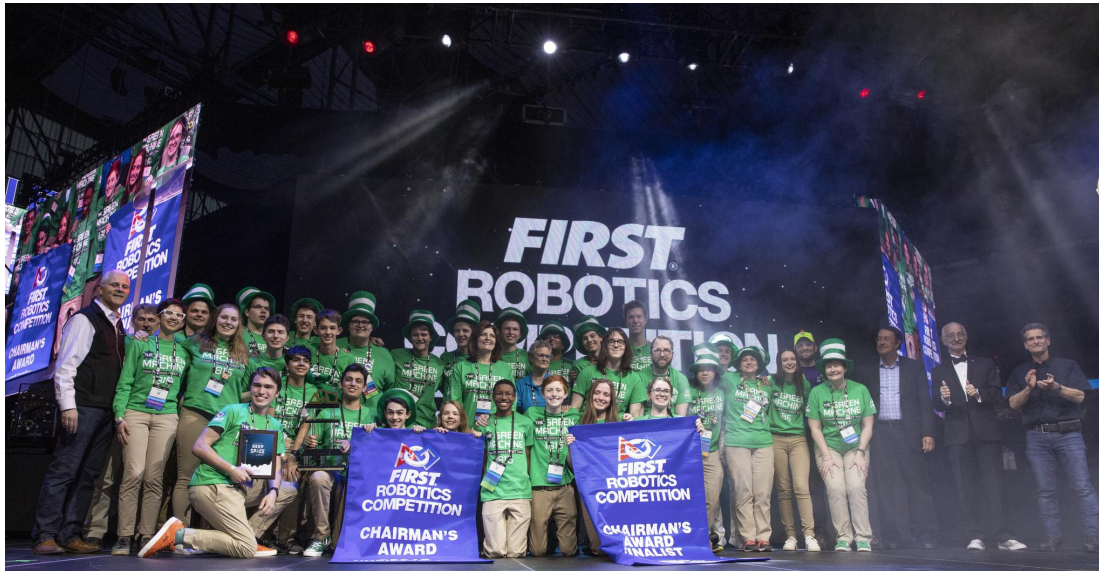
1816



**2022 Season
FRC Team 1816
Annual Safety
Training**

FIRST Team 1816

- Our Mission is to create bold, confident leaders who transform culture to promote, value, and celebrate STEM.



The Green Machine Safety Requirements

- Annual Safety Training
- Safety Presentation
 - Safety Quiz
- Shop introduction (mentor supervision)
 - Chemical
 - Tool
 - Mill/Router training
- Personal Protection Equipment
- Outreach Safety
- Online Safety
- Competition Safety



FRC, FTC require Annual Safety Review

- All of the Basics are the same. FRC, allowed to use power tools under mentor supervision.

- PPE

- Eye wear
- Clothing
- Gloves
- Hearing protection
- Foot protection

- Power tools

- Drills
- Chop saw
- Drill press
- Sanders
- Band saw



Safety Quiz

- Annual Safety Presentation
 - Tool safety
 - Hand tools
 - Power tools
 - Personal
 - Mental
 - Physical
 - PPE
 - Team safety
 - Outreach
 - Driving
 - Competition
- Safety Quiz
 - Comprehensive and *mandatory*
 - *FIRST* [publishes](#) an updated Safety Manual every season



Pandemic Specific - Safety Precautions

- Stay home if you're are not feeling well.
- If you do not feel well during a team meeting/build session, tell a mentor on duty that you are leaving the session
- Wash your hands and/or use hand sanitizer frequently
- Follow all current requirements regarding face masks/face coverings
 - Whether required or not, Team 1816 recommends that all personnel wear face masks when working together on robots
- BYO personal safety glasses and refillable water bottle to all workshop/meetings



Personal Protection Equipment (PPE)

Eye Protection

- Safety Glasses, side shields, goggles, face shields
- Use anywhere there is a powered robot, while in the workshop or the pits or competition/practice field

- Tie back long hair
- Drawstrings: removed, tied back, tucked firmly away
- Avoid loose-fitted clothing
- Hearing protection
 - Earmuffs, earplugs
- Hand protection
 - Wear gloves when handling chemicals
- Foot protection
 - Closed toe and closed back shoes (no sandals, Keens, Crocs)



Hand Injuries

Hand Injuries - one of the most common injuries in workshop, pit

- Rough cut materials
- Pinch Points
- Hot Spots

Make sure you deburr, keep your fingers clear of pinch points, and allow hot elements to cool off

Wear gloves when needed

Proper care and maintenance of injury, if one occurs



Workshop Safety

- Safety Closet
 - Work gloves
 - Ear protection(headsets and earplugs)
 - Safety Binder (injury record, manual)
 - First Aid kits and hand wipes
 - Battery Spill/Disposal Kit
 - Unexpired Baking Soda
 - Goggles
 - Rubber Gloves
- 5S
 - Color coding tools- wrenches, drill bits,
- Organizing efficiency and way to sustain 5S
 - Restoring equipment back to original condition



5S Explanation



Pneumatic and Electrical Safety

- Always release pressure
 - Don't get close when in use
 - Tell people when pressurizing
-
- Electrical Fires
 - Get a mentor
 - If smoke shut down
 - Stay back
 - Use a fire extinguisher



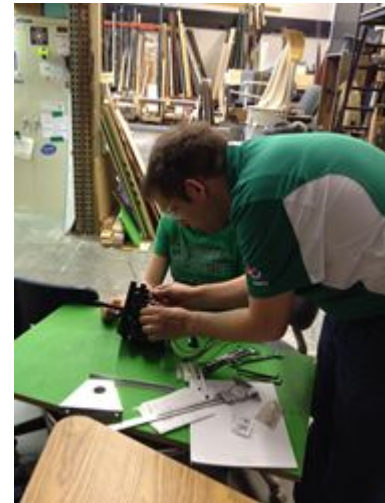
Lower Shop/ Mill and Router Safety

- Safety glasses are required at all times while in the lower Fab Lab workshop (including CSP team members)
- Operation of these tools is at mentor discretion, and always under direct mentor supervision
- Mentors carefully select students with high-motivation to train on these real-world fabrication tools



Workshop Safety

- One fire extinguisher (Type ABC) per build station; checked annually
- Background checks required for volunteers, mentors, and chaperones
 - 1816 Mentors are YPP screened via FIRST
 - Student to Mentor ratio ~2:1



Mental Health Safety

- Dealing with a loss or an emotional event during build and/or competition season
- If something is affecting you emotionally during build season, just take a few days off to have for yourself to be able to address your situation
- If you are comfortable talking about your situation, talk to a mentor or member of the team. We are here to help and will listen to whatever you have to say.



Emergency Situations

- Natural Weather Phenomena

- Tornado
- Flooding
- Severe storms
- Snow storms

- Non-Natural Disasters

- Fires
- Lockdown/Threat
- Broken Glass

- Use gloves
- Sweeper
- Mentor



Safety Outreach

- Team 1816-produced safety materials and resources are available online
 - e.g., Westview Robotics FRC Team #3341, uses our presentation, quiz to present safety to their team.
- Our team safety presentation delivered annually - both internally to our team as well as to other FTC/FRC teams as requested
 - Train rookie teams
 - Train safety captains on how to present safety to their own teams and create culture of safety
- Training in CPR and First Aid certification, and fire extinguishers with 5172-The Gators
- FTC student and adult volunteer safety training (August/September)



Outreach - Safety

- Team and guest safety
- Name Tags
- Travel in groups
- Safety glasses
- Designated crowd control
- Explanation of the robot



Online Safety

- Social Media

- 1816 limits publication of students' last names online/in media.

- Practice Gracious Professionalism online even when on your personal accounts. You are a representative of Green Machine

- Make sure all emails and profile pictures are appropriate and professional. This includes the address you choose to use.



Competition Safety

- Individual safety
 - Available safety materials
 - Pit personnel
 - PPE Requirements
 - Proactive safety measures
- Interpersonal safety
 - Buddy system
 - Team identification
 - Individual privacy policy
- Team safety
 - Open communication
 - Evac plans
 - Numbering system



Evacuation Plan

In a non-COVID event year, we hold an annual Mandatory Travel Meeting. At this meeting, we review emergency/evacuation plans.

We also review our plan when we are on-site.

In case of emergency, walk quickly and safely to the evacuation point and follow instructions from event volunteers/mentors/First Responders.

Examples:

At the DECC/Duluth: We meet at the footbridge and cross-over to Canal Park to meet by the shops.

At Mariucci Arena/U of MN: We meet in the parking lot of TCF Bank Stadium, across the street from Mariucci Arena.



Safety while Driving Yourself and Others

- While travelling to a robotics related event, safety is important while on the road
 - Stay within the speed limit
 - Avoid distractions such as loud music, cell phones, or in depth conversations
 - Treat other robotics team members with respect
 - Don't participate in reckless driving practices
 - As a passenger you are responsible for safety as well. Speak up if a fellow passenger or the driver is acting in an unsafe manner. Reckless driving is not tolerated
 - Breaking these safety guidelines can not only lead to repercussions on the team, but also legal repercussions



Questions?

