Our 2018 Build Season
by Week

1 ✓ **Week 1**
- -Kickoff
- -Strategic Design
- -Prototyping - claw & elevator

2 ✓ **Week 2**
- -Prototyping - cont'd for claw
- -CAD Design for Elevator
- -Drivetrain designed / fabricated / assembled
- -Preliminary design review

3 ✓ **Week 3**
- -Prototyping - cont'd
- -Drivetrain programmed for autonomous
- -CAD Design for claw
- -Fabrication for elevator

4 ✓ **Week 4**
- -Prototyping - cont'd for end game feature
- -CAD Design cont'd
- -Elevator assembly
- -Fabrication for claw
- -Claw assembly

5 ✓ **Week 5**
- -End Game Feature Fabrication
- -Working robot assembly
- -Full robot integration

6 ✓ **Week 6**
- -Programming for elevator & claw & final game feature
- -Driver Team Selection, Training & Practice
- -Open House! Feb 16 4p-6p
- -Eagan HS Scrimmage Feb 17 9a-4p
- -Stop Buld Date: Feb 20

3100 Lightning Turtles
Weekly Newsletter

Build Season - Final Week Feb 23, 2018

Attending Regional Competitions:
Lake Superior Regional Duluth, MN (Mar 8-10)
Seven Rivers Regional La Crosse, WI (Apr 5-7)

BUILD COMPLETE! *(mostly!)*

"Loggerhead" is bagged and tagged

"Loggerhead" (yes, that's our robot's name) was completed (*mostly*) at 10:46pm on Tue Feb 20 - just 13 mins before the official, worldwide end to the First Robotics Competition build season (11pm CST). The rules say bag it & tag it (with a zip tie) which we did & signed

What's this "mostly"?
We're allowed to keep up to 30 lbs of equipment off the bagged robot for further tinkering - and that'll be our robot ramps that support two other robots and score us more competition points in the last 30 seconds of the match. Lifting 300lbs of other team's robots 12" off the ground is not the easiest engineering challenge.

Inside:
- Our Robot Reveal Open House
- Our Week Zero Robot Scrimmage at Eagan HS
- Our Upcoming Competitions
- Next Newsletter - Coming after March 10 Regional Competition

OUR ROBOT REVEAL OPEN HOUSE!

We invited our sponsors, educators, family and friends to join us at our reveal of "Loggerhead" - the Lightning Turtles 2018 Competition Robot.

Student team leaders gave an overview of our divisions, what we had accomplished and where we are going to compete head-to-head with other teams in March & April.

Families got to see what had kept their students at school for so many afternoons and evenings over the last 6 weeks.

Great (Warrior) Pride was shared -- and we had sea turtle shaped cookies (thanks Herschbachs!)

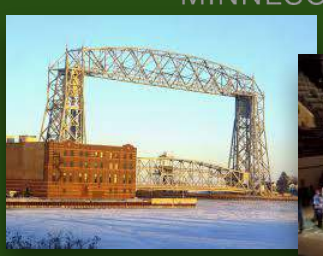
OUR UPCOMING COMPETITIONS

We'll compete in random alliance matches of three teams against a field of 50-60 other teams.

DULUTH

Lake Superior Regional
March 8-10, 2018

FIRST MINNESOTA



A competition winning alliance in either one qualifies us to move on to the World Championship in Detroit - in late April.

LA CROSSE

Seven Rivers Regional
April 5-7, 2018

EAGAN HS WEEK ZERO SCRIMMAGE!

Sat, February 17

YouTube [Watch our Week Zero Videos]

Robot Inspection

Your robot MUST meet many safety, size and weight rules in order to compete. Inspectors not only inspect but also give lots of advice.

Team Visits

In the Pits (robot team's working area at competitions) visting with and scoping out the competition is expected, but you're also scouting for who are the best teams with the best robots because in the finals at each competition, top-performing teams will pick other top teams to be on their alliance with hopes of winning a chance to move on to the FRC Championships.

Last Minute Fixes

Since we were still in the last week of the Build Season (also known as Week Zero) when we attended the Eagan High School Scrimmage, we and many other teams were actively working to improve our robot before and after each scrimmage round we participated in.

Competition Matches

Each 2 minute 30 second match pits two alliances of 3 teams each to score as many offensive points as well as defensively protect any lead they may have gained during the match. This year, that includes "owning" two different height teeter-totter switches by adding weight via Power Up cubes, gaining bonus points for retrieving cubes and putting them in a Vault and in the last 30 seconds, having one, two or all alliance robots raise themselves at least 12-inches off the floor.
There's also a 30-second autonomous period at the beginning (no human control - software routine only) and the rest is human controlled by our 5-person drive team.

On and Off the Field

In a typical competition day, our robot and team will participate in 6-8 competition matches. That's lots of hauling your robot back and forth to the pits and lots of lifting your 145 lb robot onto and off of your carrying cart.

TEAM FUN!

Interview:

With Safety Lead, *Nate*

Q1: Why did you join our team?

A1: My friends joined and it seemed like a fun activity, so I joined. I am also very passionate about safety...

Q2: What is your favorite thing about robotics?

A2: Hanging out with my friends and ensuring the safety of others.

Q3: What does it mean to be a safety captain?

A3:Getting to wear a badge that says "safety" at the competitions. (And being responsible for madame safety)

Q4:What is your favorite type of safety?

A4:Telling short people not to stand on chairs when they are attempting to appear taller.

Interview:

With Team Co-Captain, *Aiden*

Q1: When and Why did you join robotics?

A1:I started in 4th grade after the principal at Somerset asked me if I wanted to join a FIRST Lego League team. I heard the word "Lego" and agreed right then and there. I've been doing robotics ever since, Joined the Lightning turtles my freshman year, and have been a part of the team ever since.

Q2: What do you plan on majoring in?

A2: I'd like to major in chemical engineering...I've always loved chemistry and math.Developing systems to turn chemicals created in a lab into commercial products seems like the perfect balance between theory and application.

Q3: Has there been anyone in your life who has been a big inspiration?

A3: I'd have to go with Mr. Doud, my 7th and 8th grade science teacher. He sparked my interest in science, more specifically biology and chemistry, through things like Marine Team, where we got to create and maintain a fish tank, and Critter Crew, where we learned about and cared for all kinds of reptiles.

Q4: Any advice for other members of the team?

A4: Keep asking questions. The best way to learn about all the crazy things we do is to ask the mentors or another student.

MEET OUR TEAM MEDIA LEAD+MUCH MORE!

Bailey

Q1: What made you initially decide to join the Lightning Turtles?

A1: I have done a lot of computer artwork for the past 2 years, and my counselor was aware of this. Media Mentor Dan sent out an email to counselors about recruiting students who would be interested in being on the media team. She thought of me, let me know and I joined.

Q2: At one point during the season, you changed your mind about sticking with and contributing to the team. Tell us more.

A2: I wasn't sure I'd stick with the team just doing media, but after I had my first lunch with the team and also started fabricating materials for prototype robot mechanisms I realized I was really interested in more. The team helps you make really good connections between the team members, and once that connection is made, it's hard to break because this team is full of a lot of great people who lean on each other. I became very proud to be a part of it, and I couldn't be more proud to be a part of it today.

Q3: You've learned a number of new skills while on the team - what's been the most interesting/mind-expanding?

A3: Wow...there are a lot of things. If I had to choose, the best technical skill I learned was fabricating on the mill. Non-technical would be more open-mindedness mixed with creativity. Thinking outside the box and incorporating others' ideas into your own is really the key to success in terms of robot-building.

Q4: On the Media Team side, what's been the biggest challenge during the 6-week build season?

A4: It actually hasn't been that big of a challenge being on the media team, but rather a lot of fun. The only challenging thing is coming up with a final design & layout for the newsletters because I always want to change everything and I'm nervous that it won't look good enough!

Q5: Now that the build season is over and you're a veteran, what advice would you give to rookies next year in order to be successful?

A5: Don't be afraid to talk to the team members and ASK QUESTIONS! The more you ask and discuss, the more improvement you will see not only your own skills, but even in the skills of people around you. (And you'll make new friends, so that's pretty neat too!). Also, your own and shared ideas and designs are going to fail and you're going to get frustrated when your hard work doesn't work out. That's OK - others are experiencing the same and it's what you do to learn from that failure that counts.

Q6: Two favorite moments on the team / one least favorite:

A6: One of my favorite moments while on the team was when the drive train came together for the first time, because it was nice to see something be made out of nothing to be made so quickly for the first time...but my most favorite moment would have to be the day of the build season kickoff, because there was so much excitement that day and then we started brainstorming. There were so many creative ideas put out there. *And my least favorite* - is either falling in the trash can after mistaking it for a stool, or sliding face-down on an icy hill while picking out a spot for a robot's photo shoot...those are pretty cool memories though!

A BIG THANK YOU TO OUR SPONSORS!

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or contact Doug Sisk - Tech Ed Teacher at Henry Sibley High School

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