

3100 Lightning Turtles

Weekly Newsletter

Build Season Week #2 – Jan 20, 2018

Team Sponsor/Family Open House: Fri, Feb 16 – 4:30p – 6:30p – Sibley HS
Attending Competitions: Duluth Regionals (Mar 8–10) & LaCrosse Regionals (Apr 5–7)



This Week:

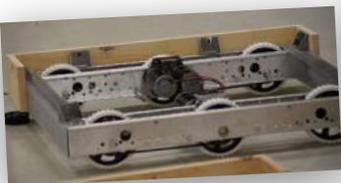
- ✓ Fabricating & Finishing Mechanism Prototypes
- ✓ Initial Drivetrain Build & Programming
- ✓ Electronics Layout & Design and Sensor Testing

Coming Up:

- ❑ CAD Design of Final Robot
- ❑ Fabrication of Final Robot Parts



Our custom-designed battery cart – will charge 6 bot batteries simultaneously.



Initial Drivetrain came together nicely!

Week #2:

Last week, you had a chance to watch the [FRC Power Up game animation](#) released on Jan 6th and the start of our 6 week robot build season.

This week we accomplished narrowing down our mechanism design options based on successes and failures found in prototypes – including our cube elevator, cube collector and robot lifter platforms. There was substantial progress in fully CADing our drivetrain for conversion to an 8-wheel drive (initial 6-wheel drivetrain finished)

On Friday, we invited the all-girls The Leekks First Lego League Team to meet with the Lightning Turtles Team and tour our facilities. We're excited that they are headed to the MN FLL State Championships in late Feb.

FABRICATING PROTOTYPE PIECES



Our final robot designs are beginning to come together as a result of us putting all of our heads together and with the help of our experienced mentors.



Corbin, Thomas, and Jack milling & grinding parts



Madi, James and Luz Working On the Cube Collector Claw (C³) Mechanism

A WEEK OF FABRICATION!



Making a cut out for the battery in the drivetrain structure

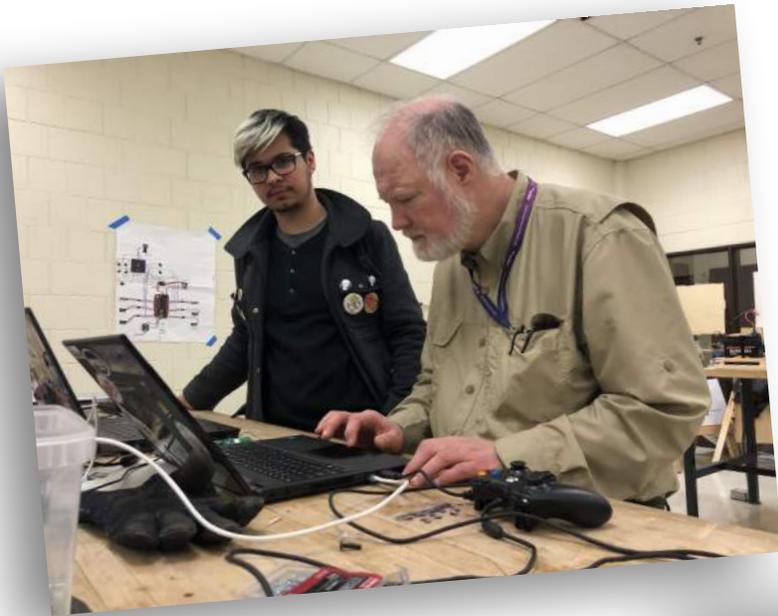


Making wire pigtails for the robot motor controllers



Our brand-spanking new plasma CNC - thanks to our successful Tri-District Perkins Grant. It makes cutting intricate robot parts simple once they are fully CADed and cuts through up to 1/2" of alum or steel..

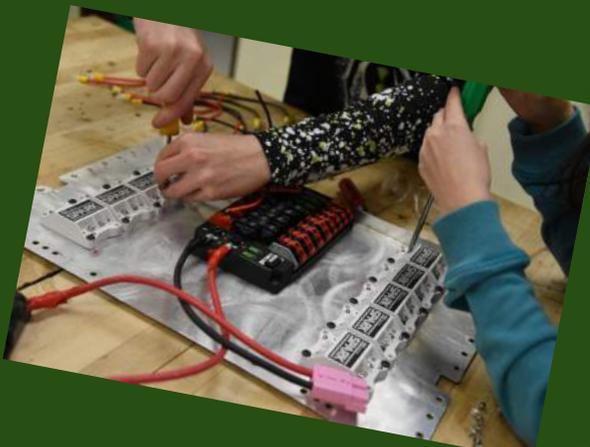




Nicco and Programming Mentor Eric working on wheel rotation sensor programming

Building the robot is half the job, making it work is the rest of it. We have made significant progress in writing new sensor-driven Java code for the bot.

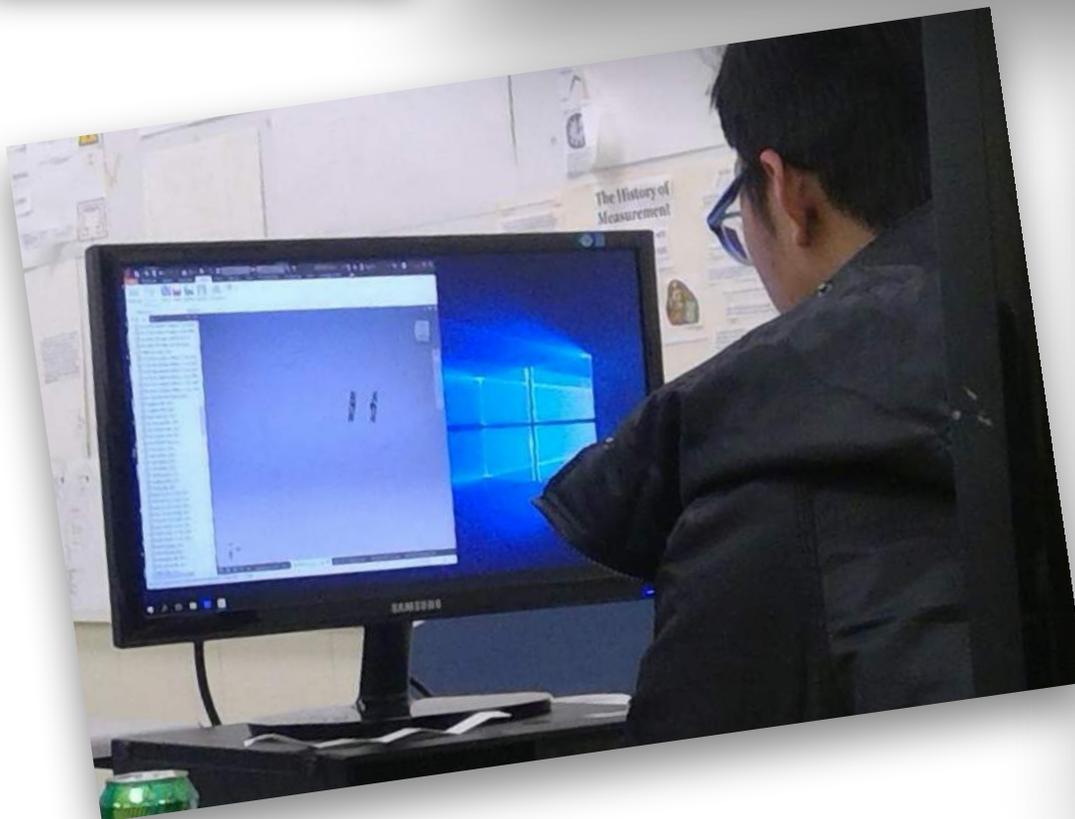
Team Members and Mentors working on Programming & Electrical



CAD modeling with AutoDesk Inventor

Our student CAD modelers have been continuously modeling our robot design elements

Gabe working with Mentor Conor modeling the Cube Grabber



Khai modeling our drivetrain wheel setup in Inventor



Early cube elevator prototype CAD design

TEAM FUN!



Interview:

With Team Co-Captain **Bryson**



Q: When and why did you join robotics?

A: I joined the Lightning Turtles in 8th grade, the theme that year was recycle rush in which teams had to stack totes and recycling cans. However, I've been in robotics since 4th grade when I joined my first First Lego League team at Somerset.

Q: What other activities are you part of?

A: I am currently the senior scribe in my local Boy Scout Troop. I am working on the rank of Eagle Scout which is the highest rank a Boy Scout can achieve before they turn 18.

Q: What do you plan to major in?

A: I plan to major in either mechanical or electrical engineering. I want to be able to develop skills that allow me to turn ideas into real products. I still have interest in other areas such as computer science or another engineering field.

Q: What is your favorite memory from robotics?

A: My favorite memory has to be during 2016 Stronghold when our robot managed to autonomously shoot and make a goal from over 15 feet away. It was a great example of how a well programmed vision system can do amazing things.

A BIG THANK YOU TO OUR SPONSORS!



MJ Shea Consulting
and Design LLC



Want to get in touch with us? Email 3100lightningturtles@gmail.com
or contact Doug Sisk - Tech Ed Teacher at Henry Sibley High School

Visit our website at: www.team3100.com to find our complete season calendar