~ Week 6, Bag and Tag! ~

Finishing up the Final Bot: Winch, Super cool navx, bug fixing!!!

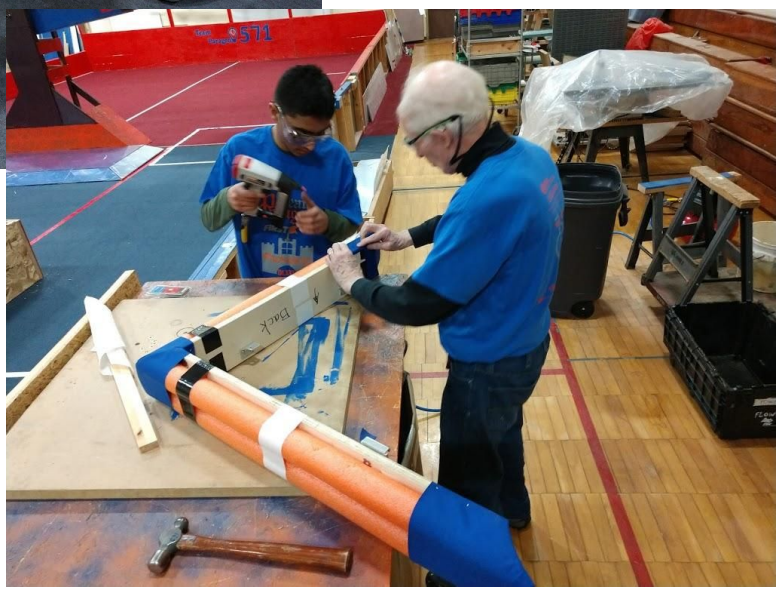
- BUILD -

It's the final week before bag and tag day! This week we worked on some of the build aspects of the robot's imagery by adding the "legs" of Emmet, which hold the finished wiring of the pneumatics to the electropneumatic-aquarium. We were also able finish the second stage of the elevator using a telescoping 80-20 shaft and a pulley system, which together allow the robot to extend much higher. The initial configuration outlined by the rules constrain the height to 55", however this mechanism will allow us to extend up to the highest position of the scale, and hopefully the 7' climb bar as well!

To increase the pulley's strength, we replaced the earlier string design with a steel wire cable. To improve on the hands' effectiveness, we also bent the fingers on the grabber assembly. This will increase contact and thereby grip onto the power cube. In practice it has proven itself well! The latest we've been working on is the addition of a velcro hook to hold a power cube in the beginning of the match (when the robot is autonomous). When the elevator assembly is lifted slightly, the velcro holding the hook is detached and the power cube is released to the ground. This design ensures that the hook will stay out of the way for the rest of the match as well as allow of to hold a cube during autonomous!

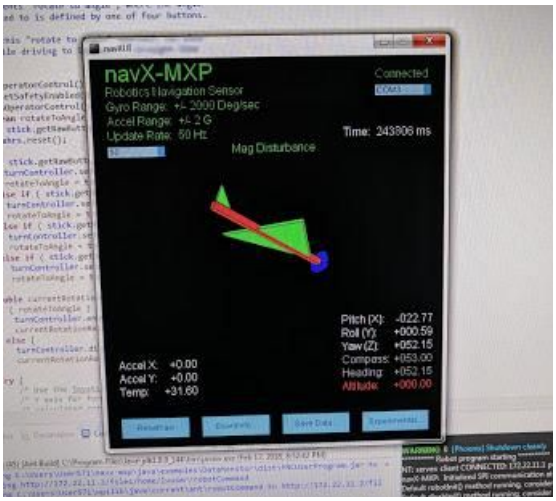
Bumpers!

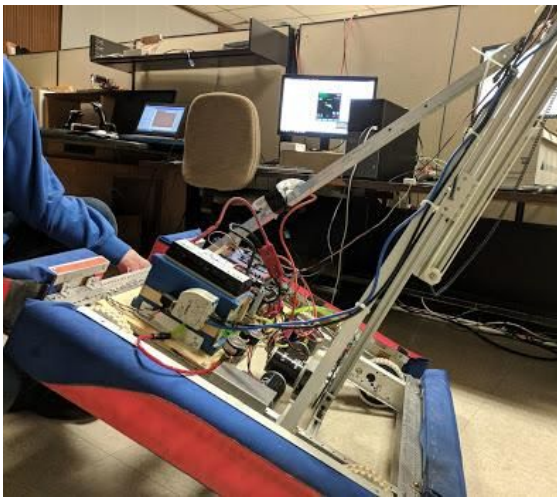
This week we added miscellaneous bumpers to the practice bot to simulate the real one. This bot will be useful now that the real one is bagged and tagged and thereby inaccessible.



The final robot's bumpers are still a work in progress. The wood, pool noodles, and fabric are there, but we need to finish assembling them.

- PROGRAMMING -



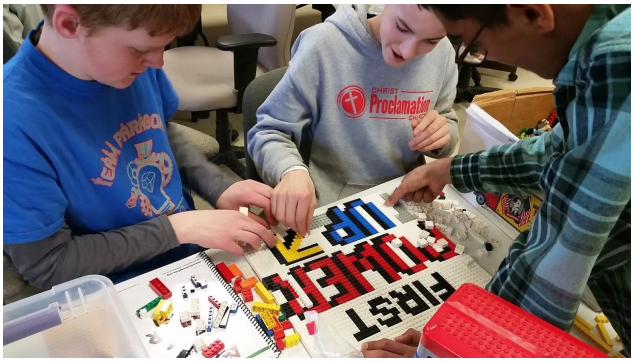


This week for programming we had some major breakthroughs!!! We put a navX robot sensor onto the Roborio on our robot, which acts sort of like a compass on steroids. The board is able to map every movement the robot, independent of the motors. It can send this data to be used in programming to allow more accurate movements. This will be quite the game-changer- literally! With every aspect of driving. The advantage to this system is that it allows us to correct drive errors due to carpet friction and motors with different amounts of power. For example, if we drive the robot straight and it starts to turn to the left side, we can compensate by giving the left drive motors more power, thereby turning the robot back to the right and on an overall straight path.

Lately, programming has been focusing a lot on the autonomous modes. Autonomous period is the first 15 seconds of each match where the robot runs on its own without driver input. This process has become much more complex than we initially expected, as there are a lot of different scoring configurations and patterns for the field to analyze. We are continuing to develop the most effective strategies for our bot, and work on the actual coding of it. The latter has also been quite involved but fascinating, with the new navX technology previously overviewed which aids the accuracy of the autonomous movements.

- IMAGERY -

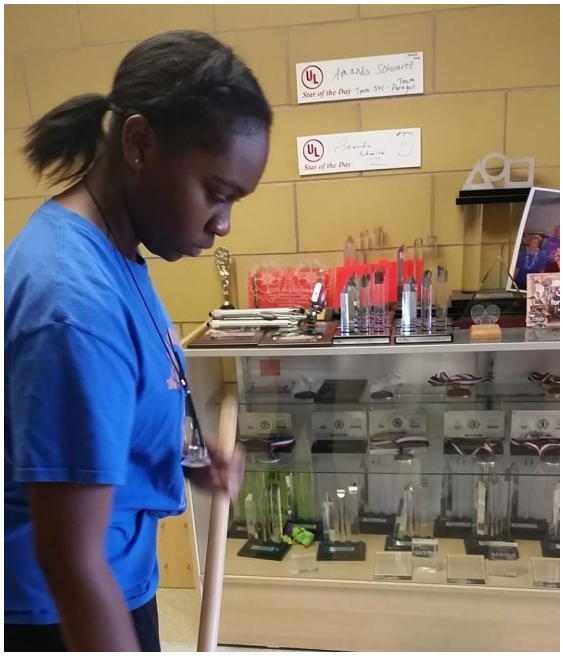
This week imagery worked on the fact sheet for this year's robot. We also finished up the ABC's safety book with all the corresponding photos, created this year's game logo in legos, and even customized our driver station by adding a lego backing!!



Imagery is all about bringing the theme throughout the team this year. The awards this year includes an 8-bit model of Emmet with a a classic paragon hat, as well as our symbol – a light bulb with a "paragon" or diamond as the light source.

- WEB -

This week, Om worked on gathering pictures for a photo frame. The goal is to display these photos on a monitor in the pit. He organized them all into two folders: one of solely the robot, and one of all the other good photos.



- SATURDAY BUILD -

On Saturday we... cleaned!!!! For the first hour we cleaned up our build site, especially so it would be ready for the teams who came on Monday.

We swept, mopped, rinsed, wiped, and organized! They had planned to visit Saturday, but instead came on the 19th to use our playfield for testing. It was great to see their prototype bot and how another team functions other than our own.

-Sunday-

Suffield Shakedown, our practice scrimmage, was unfortunately cancelled, but this gave us the opportunity to practice and build at our own site! It also gave us the opportunity to invite other

teams to our field for some practice time. Team 178 took us up on the offer and came to play Monday night. We still have a total of 6 hours before competition, but the robot is quite ready for the real test!

-Bag and Tag day-

Tuesday, the 20th of Febuary, was bag and tag day. This is the last day of the build season when we and all FIRST Robotics teams have to put their robot in a bag and tag it. All teams have till 11:59 Eastern Standard Time to do this. Other then the alotted 6 hours for those teams who participate in district events, no one can work on their robot until competitions. We didn't need to scramble for time this year. Luckly we had great time management skills reached a satisfactory end point before bag time. Emmet still needs so imagery final touches, but that can be acheived either at competition or during our out of bag time. After a few pictures, we placed the robot in the bag (with or without a couple of students.)

-Time to level up with FIRST Power Up! -

For more on Team Paragon visit our website and read our team updates

team-paragon.org

2018 FIRST POWER UP GAME ANIMATION

If you haven't already, don't forget to check out this year's game animation!

https://youtu.be/HZbdwYiCY74

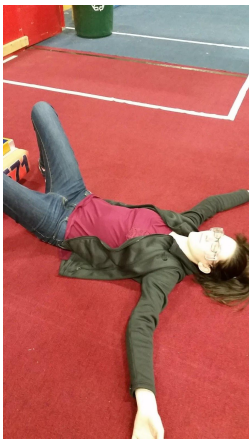
Tell your friends that might be interested in robotics, STEM or Team Paragon. We love to share our enthusiasm with new students and mentors. No experience is necessary, just a ready attitude to learn and get excited!

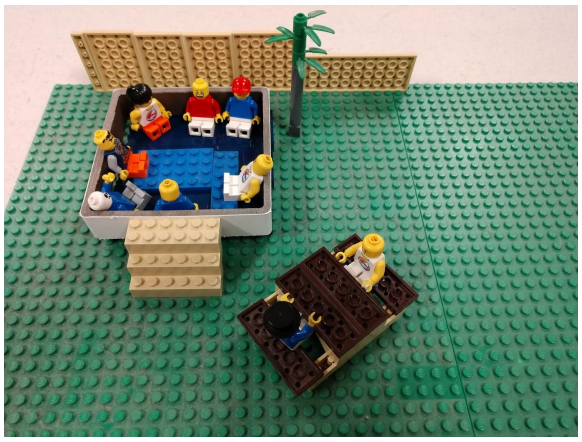
Contact us at teamparagon571@att.net or visit us ***Mondays 6:30pm***

COMPETITIONS ARE AT HAND!

Waterbury Competition (Wilby High School) **March 9th-11th 2018**

Hartford Competition (Hartford High) **April 6th-8th 2018**





“Quotes of the Day”

“It has legs??!!!” - Rookies...

“The crew relaxes in a hot tub after a hard day of work” - Mr. Koenig

“He was all geeky about. It was adorable” - Kadri

“We evolved... became stronger, faster...” - Om

“Do you have glasses?” (@Robot) - Caleb

Team Paragon signing off ;-)

FIRST® Robotics Competition Game

FIRST® POWER UP,℠ the 2018 *FIRST*® Robotics Competition game, finds our teams trapped in an 8bit video game! Teams use power cubes to defeat the boss.

Each three-team alliance has three ways to help defeat the boss:

1. **Owning the scale or their switch.** Ownership occurs when the scale or alliance's switch is tipped in their favor. Robots collect and deliver power cubes to gain ownership.
2. **Playing power ups.** Alliances exchange power cubes for power ups. Power ups provide a timed advantage during the match. There are three power ups that can be played: Force, Boost, and Levitate.
3. **Climbing the scale tower.** Robots work together to climb the scale tower to face the boss.

Autonomous Period:
Robots operate independently following preprogrammed instructions for the first fifteen seconds of the match.

Alliances score points by:

- Reaching their own autonomous line
- Gaining ownership of the scale or their switch

Teleoperated Period:
Operators take control for the final two minutes and fifteen seconds of the match.

Alliances continue to score points by:

- Gaining ownership of the scale or their switch
- Delivering power cubes to the alliance's vault
- Using power ups for a timed advantage
- Parking on the scale platform or climbing the scale to face the boss

The alliance with the highest score at the end of the match defeats the boss and wins.

FIRST® POWER UP℠

FIRST ROBOTICS COMPETITION

Join our photos album to see everything we've been up to!

goo.gl/photos/3hCD3D8p1bRMx5By8

Alanna and Cameron