
# ~ WEEK 4 ~

Building the Final Bot, Programming the Prototype!

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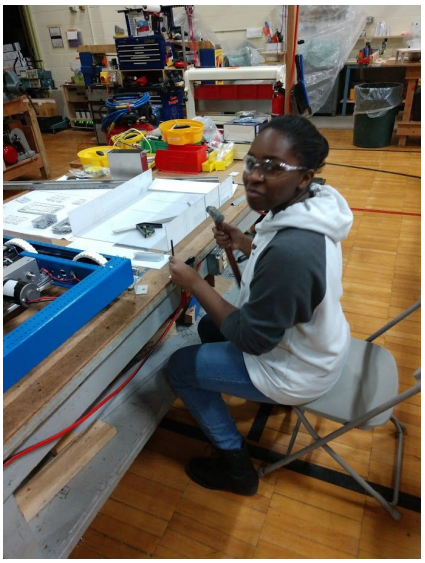
## - BUILD -



This week we worked on the gear box for the elevator of the final robot. The prototype currently has a gear ratio that lacks the power we need to be able to lift the cube, so with a higher gear ratio that will be installed on the competition bot we will be able to reach the scale. Also, we started on the electropneumaquarium; aka the brains of the robot the holds the electronic and pneumatic controls. It safely contains wires and components frame and will be adding the electronics and pneumatics soon.

**“I helped Kadri. She was working on a fish tank, I mean electroquarium”** - Sam T, Rookie[2]

## Bumpers!

We've been working on our bumpers too! To match our video game theme, the 571 label is in an 8 bit font, and we're going to use a silk screen to put these numbers on the bumpers much easier than in previous years!

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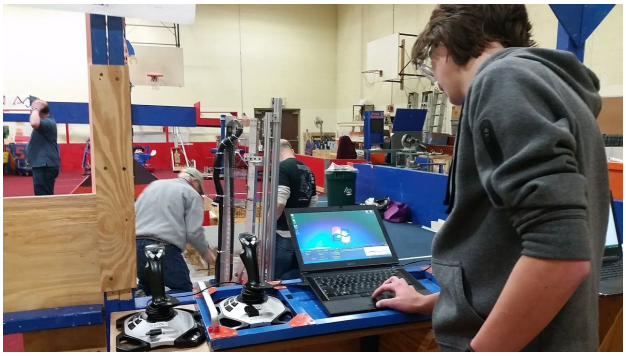
## - PROGRAMMING -



By Tuesday we had the prototype up and running!!! We're using a tank drive, meaning two joysticks are each mapped to one side of the robot's drive train; however, we may try to replace this setup with some kind of game controller. Our 6-wheel drive allowed for very smooth driving, and its ability to pivot on the two center wheels is fantastic! We also coded the elevator to work with the pneumatic brake, so that it won't fall down when it's inactive.

On Saturday we worked on getting the Raspberry Pi to communicate with the Roborio for image processing. We've established the camera feed connection, and now we'll add some filters with GRIP software in order for the robot to hopefully be able to operate more autonomously. Kadri also did

some rad super cool CAD stuff and printed stuffffs!!! More specifically, she printed some caps for the 80-20 shafts so our bot will be legal at competition as well as limit switches! Within the last couple minutes Saturday, we coded an arcade drive to allow the robot to be driven by a single joystick.

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## - P L A Y  F I E L D -

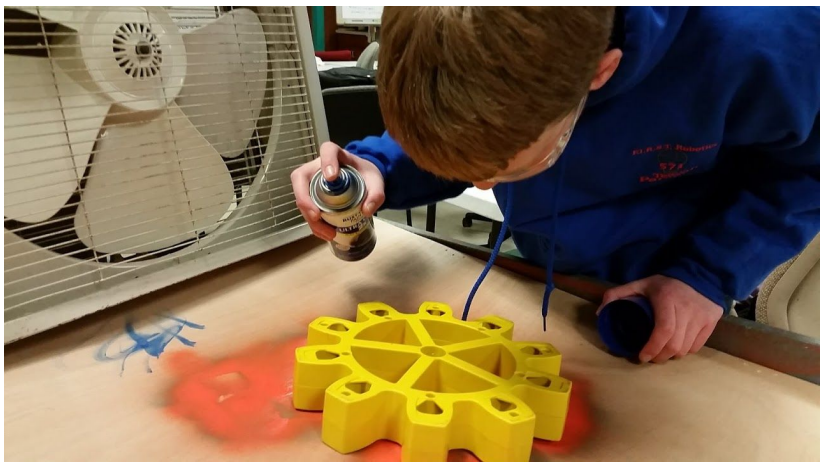
Our play field is ready for the drive team to practice for our scrimmage before the actual competitions; complete with a low switch and high scale.

During lunch Saturday, we held an important drive team training session. During this engaging time, potential drive team members refined their skills and abilities to work under pressure.....

..... aka we chilled and played pacman :D, a real 8 bit video game!

## - I M A G E R Y -


The graphic designer working with us sent back the computer generated designs for this year's T-shirts! They reflect the video game design, with the shapes of FIRST being eaten by Pac Man. We think the shirt turned out great!!! We also worked on this year's book -- the "ABC's of Safety" -- the image below being for the rule "Ventilate when spray painting." And also we are starting pit decoration with legos that team members built that fit the theme of this years game

# -Time to level up with FIRST Power Up! -

**For more on Team Paragon visit our website and our team update**

**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

**During the build season, we meet:**

Mondays, Tuesdays, Wednesdays 6-9
Saturday 10-5 Sunday 1-6

## UPCOMING EVENTS

**-Suffield Shakedown**

**February 17, 2018:** Our team will hopefully be taking part in a practice scrimmage with some other teams in the state to practice. We have been signed up....now to complete a robot in time.

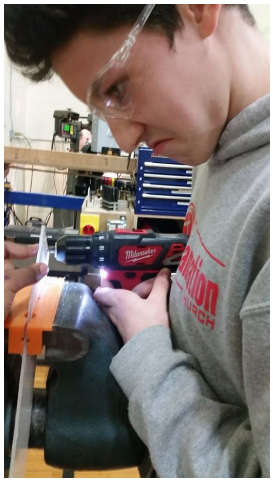
**-Waterbury Competition** (Wilby High School)

**March 9th-11th 2018:** First Competition!!!

**-Hartford Competition** (Hartford High)

**April 6th-8th :** Second Competition!!!

# "Quotes of the Day"



**"We should burn it when we're done" -Sam**

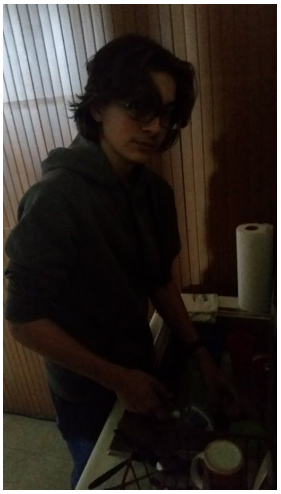
**"You can't just resort to burning things" -Alanna**

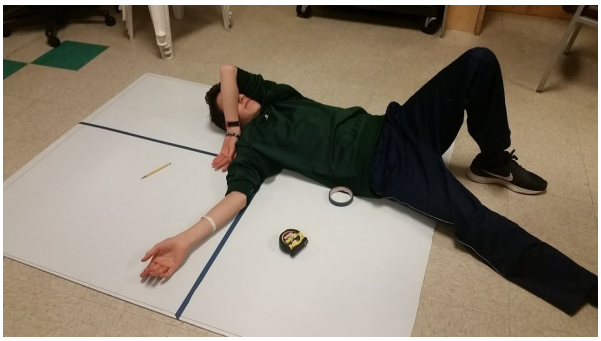
**"Programmers are inherently lazy"-Mr.Schwartz**

**"Boys stop playing your games and come eat" -Mrs.Koenig**

**"I have to finish this round"-Mr.Koenig**

**"Just by sheer luck, I managed to sheer it" -Caleb**





## *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