

# RAGE Robotics

## BUILD SEASON - WEEK 2 UPDATE

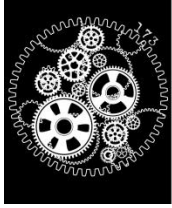
With a holiday weekend, a predicted ice storm (the ice storm didn't come but all afterschool activities were cancelled) and final exams, RAGE made some pretty good progress in a limited amount of time. Now that we've figured out what we would like to build, each of the subgroups has branched off to get to work. On Thursday night we had our whole team meeting where the subgroups presented what they have accomplished.

Here's a brief recap of this year's challenge: This year's game, STEAMWORKS, has 3-team alliances working together to gather gears (about 11" diameter and 2" thick) and fuel (5" diameter balls). The fuel is shot into a boiler about 8' above the ground and the gears are placed on a hook near the airship which 2 pilots (human players) load to start the airship rotors. During the final 30 seconds of the match, the robots then race to the airship, latch onto ropes that hang from the airship and climb the rope in preparation for takeoff! The FRC video for this year's challenge can be found at [2017 FRC Kickoff Video](#) (The video is about 18 minutes – the game simulation starts around 13:20).

### Build Subgroup

The build crew was busy making a prototype base, assembling the mecanum wheels and installing them on the prototype. Last week the team found that one of the gears on the mecanum wheels was the wrong size. After a few calls to area teams, Team 3525 (Nuts and Bolts of Fury out of Waterbury) graciously offered up a gear that they weren't using which allowed us to get a prototype base up and running. Once the base was assembled and could be tested for driving, the Build group began assembling some of the field elements such as a support to hang a rope so the team can test climbing prototypes and a spring with a hook to test loading the gear.

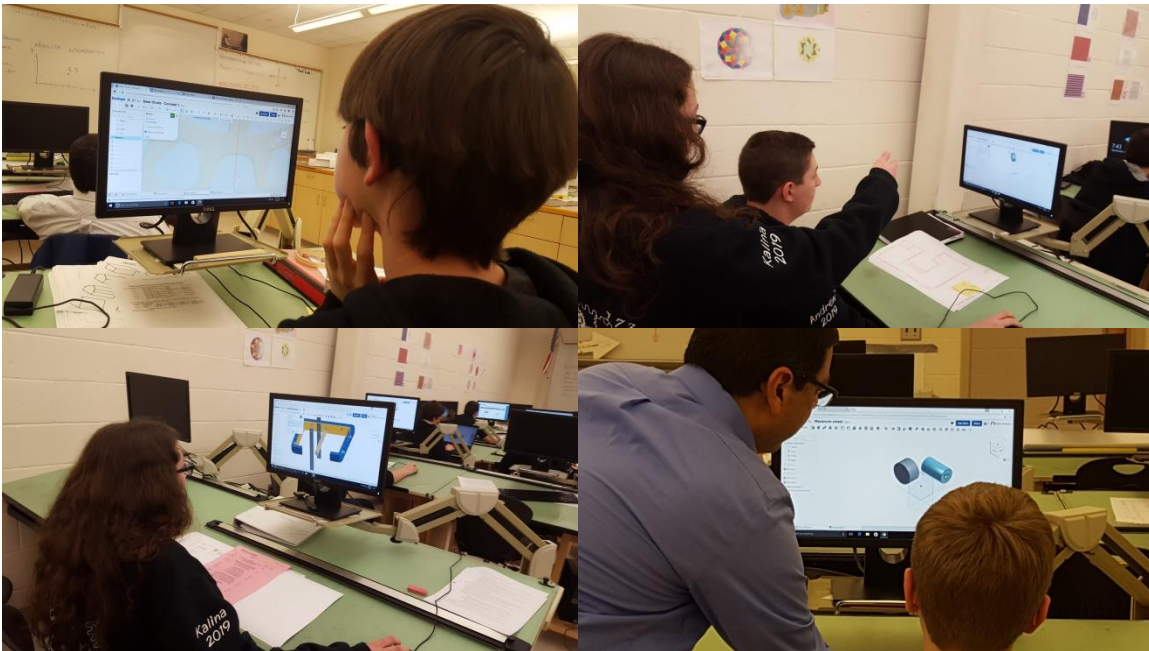




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## CADD Subgroup

The CADD group was busy this week - each student in the group was assigned a different robot component (base, shooter, gear capture mechanism, and wheels). Using Onshape, they created each component. As the components were drafted up they also began the tough task of figuring out where everything can fit – FIRST has specified two size envelopes that the robots must fit in this year and the CADD group is working on making all of the components, motors, batteries, and other parts fit into the envelope.



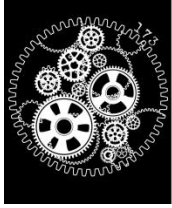
## Electronics Subgroup

After trying out the mecanum wheels with the original motor controllers that were installed, the Electronics group installed a new set of motor controllers to see if the robot drove responded differently. They also began assembling their “competition” tool kit of supplies that they will want to bring to competitions in case they need to make any repairs.

## Pneumatics Subgroup

The pneumatics group began disassembling a previous year’s robot for parts and to learn about how pneumatics is used on the robots.





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## Programming Subgroup

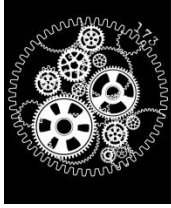
The programmers were busy getting the prototype up and running and creating the header program. Each member of the group was also assigned a part of the robot that they will “own” for the rest of the season. They also researched different cameras that could be used with retro-reflective tape that is on the playing field on both the boiler and the hook that the gear is set on. Using the tape and the right camera, the robot could “spot” the goal and help the team efficiently shoot and deliver gears.



## Safety Subgroup

The safety crew continued promoting safety and preparing for the competition season. They continued working on organizing the safety glasses for the team so that all team members have the safety glasses available at the door to the RAGE room (along with some for guests who come to help out).





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## **Spirit/Social Media Subgroup**

The spirit group continued on brainstorming ideas for the Steampunk themed game this year. Our logo doesn't need too much tinkering but the group is excited to come up with a themed mascot as well as a flag for the competitions.

As we move forward, the groups will continue working on the different prototypes and will practice driving to see how our new drive system responds to the controls. The parents have also eagerly jumped in to help and provided both breakfast and lunch this past Saturday which was much appreciated from all of the students gathered together on the Saturday after final exams!

**Stop build day countdown: 37 days!!**

For additional updates please check out our website ([www.ragerobotics.com](http://www.ragerobotics.com)), like us on Facebook (RAGE Robotics) or follow us on Instagram (ragerobotics173) or twitter (@RAGE173).