

Ozone Robotics Progress Report

We've been up to a lot at Ozone lately and with our season finally in full swing we are excited to share our progress with you. Our team kicked off the *FIRST Rebuilt* season on January 10th with the unveiling of the game. Each year, *FIRST* unveils a new game for us to design a robot around. This year we will be taking hard foam balls called "Fuel" and shooting them into a large area called the "Hub." This game emphasises quantity as there are 500 "Fuel" on the field that can be scored repeatedly. With this in mind, we began to talk about strategy and about the major mechanisms needed on the bot. The next week was spent prototyping mechanisms with cardboard.

One of our major prototypes was our spindexer prototype. A spindexer is similar to the mechanism used in a gumball machine or a paintball gun. This prototype is intended to index fuel and funnel it into our shooter. The spindexer was prototyped in 3 different versions going from a cardboard prototype to a 3D Printed version. We also prototyped various versions of a cardboard hopper testing to see how many game pieces can fit inside a chassis. Throughout this process our CAD Students have learned from the successes and failures of prototypes in order to begin designing our competition bot.

Our team also assembled field elements for the game and have begun to build and test a high quality prototype for a shooter. Our goal with the shooter is to allow our bot to shoot from various field positions and from various distances. This shooter would be attached in a fixed position to the bot and have the ability to shoot high quantities of "fuel" with speed. We have successfully tested this shooter and moved on to putting the pieces together and designing our competition bot. We have also constructed our Chassis for the Competition bot.

Our freshman students have also been hard at work constructing our KitBot. The KitBot is a robot provided by FIRST robotics where the parts are given to teams. This robot is often used in competition by rookie teams. We use KitBot as a way to introduce new students to STEM and FIRST robotics. Our KitBot students have fully built the robot and have begun to code the robot. At this point, Our KitBot can shoot, intake and drive but cannot fully cycle yet.

From a team operations standpoint, our Business team has been working on our Impact Award Submission and has planned and executed various outreach events. They have also begun planning for our two competitions in Cleveland and Cincinnati and have been reaching out to team sponsors. Our team recently went viral on Instagram for a video of our cardboard spindexer prototype, reaching 1 million views. This recent virality has resulted in 330+ new followers on our social media account.

We've got exciting things happening at Ozone and are looking forward to a great season and a great bot. Thank you for your contributions to Ozone, your financial contributions have helped provided our students with critical STEM experiences.