

## Recycle-Bot Online Challenge:

### **“Phoenix Bot”**

#### **Reno High Robotics Team 395X**

2020 was a year full of obstacles and setbacks. We created the recycle bot to represent our feelings about the past year. In total, it was a dumpster fire. The recycle bot showcased many of the terrible events that occurred throughout the last year, such as the pandemic. We included a student to represent us, coming out of the last year successfully. Just like 2020, the process of building and designing this recycle bot had its ups and downs.

We faced considerable challenges while designing and building our bot. First, we had to figure out what to make it out of. We chose recycled cardboard for the main body because of the convenience and ease. To hold the pictures, we chose old skewers. Eventually, we had to add old plastic straws to aid in the movement, as the skewers on their own were sticking. The cams were also constructed out of cardboard and lined with masking tape for ease of movement. The



feet of the followers were originally constructed with cardboard, but they proved too unstable and were replaced with popsicle sticks. When putting the middle piece that guides the followers in, we had to be sure that it would be in the right place to allow for the full upward movement of the pictures. Originally, the lid was meant to close when the cams were all at the lowest position, but we ended up having to make it stationary in an upward position, as the pictures went up too high to close it, even in the lowest position. Once all the cams and followers were in place, we simply had to put in the extra piece of

cardboard that covered the interior workings and made it look more like a "trash", we used ripped up pieces of trash like papers, and a

We started the construction of a dumpster-shaped box out of cardboard. We cut the pieces of the dumpster from the lid as well and used a stick as an axle and a recycled straw as the connection of the lid to the



covered the interior made it look more like a dumpster. For the trash, we used ripped up pieces of food wrappers, old ziplock bag. We started the process by forming a shaped box out of recycled old boxes to make the dumpster from. We used the lid as well and used a stick as an axle and a recycled straw as the connection of the lid to the axle. Then we cut out

the cams on cardboard, and we put masking tape around the cams to make them run smoother. We then centered the axle and used a skewer as the axle and hot glued the cams on. Next we mixed two green paints to create a dumpster green color and painted the box. We drew a student, coronavirus, and a fire to represent how our 2020 went. We cut skewers to a size that would fit in the box as followers and used popsicle sticks as the followers foot. We hot glued another piece of recycled cardboard about the axle as



a guide for the followers, we ended up putting recycled straws over the followers to make them more stable. Then we added a piece of cardboard over the space between the guide and the edge of the dumpster and glued recycled trash such as old food wrappers, old classwork, and old zip lock bags. We then glued that piece of cardboard in and began to glue recycled trash onto the guide to make it look more like the inside of a dumpster. Then we glued the lid into a stationary position.

Making this recycle bot was the first actual activity we were able to complete since the start of covid and the hybrid model that our school district applied. Another challenge we faced was having our club split in half because the hybrid model required 50% capacity. Creating this recycle bot was a fun experience and we enjoyed finding the recycled materials we used to create this dumpster fire. Although 2020 has its setbacks, we were able to come together this year as strong as ever, and just like the transition from 2020 to 2021, our team was able to pull together and create our best representation of 2020 with this recycle bot.

