

We created this part to function as a more elegant solution to building ramps in vex iq. Without using this part, the process of creating a sturdy and simple ramp required more parts, and more complexity, as well as weight, which could change something about the robot.

This part could fit into a robot design with something like a ball collection mechanism, by making intake and dropping more smooth and reliable, by providing a gentle slope for it to fall down and climb up, rather than a harsh fall.

I used Fusion 360 version 2.0.8950. By using pre modeled connector pieces from the vex robotics website, I modified the upper portion to tilt at a 45 degree angle, and added a hole, if necessary to the functionality of the part. The necessity of the hole was determined by what the part was expected to bear on a robot, so if it was logical to use that part to hold up a heavy piece, an extra hole was added for stability.

I had previous experience with 3d modeling, but I had never used CAD software before, and I had to learn new things, as it follows a different workflow and part manipulation technique. In blender, the previous I had used, objects were modified by vertex, however in Fusion 360, it's modified by edges and faces, allowing for easier modification and production of pieces, although it comes at the expense of complexity. I would like to continue to learn how to use CAD software, as it is more precise than mesh editing, because of the wide selection of tools available to make measurements, supports, and other useful tools relevant for creating a part that can easily be 3d printed and precise. Knowing how to use this software can allow us to create robot ideas without having to be in the same room, which is especially useful in today's environment. Not only would I like to continue creating vex parts, as it is actually quite enjoyable, I would like creating tools and parts to help my day to day life, like a chassis for a keyboard macro pad. I'm

interested in a career in engineering, and being able to visualize and test a part before it is even manufactured can save money and time, which can put me at an advantage in my career path.