The Claw

Team 28102A The ANTS

Meet the team

Carter Hartings: Builder, Driver, Programmer, and 3D Modeler.
Taylor Reeb: Notebooker, Driver, and Builder.
Lexi Golinghorst: Notebooker, Driver, and Builder.
Avery Poling: Notebooker, Driver, Builder, and 3D Modeler.
Luke Taylor: Builder, Driver, and 3D Modeler.

Why did we make the part?

This part will improve the function of the 4x4 right angle offset beam. This part will be useful because we use these a lot on our claws and with this new part, we can put a shaft through it and lift parts easier. We used to have to use a 4x4 right angle offset beam and a 2x2 shaft lock plate but it was really tight against the shaft and shaft collars. With this new part, we would not have to use as many parts and it won't be as tight against the shaft.

How would our part fit into a complete robot design?

This part would fit into a robot design this year because a lot of robots have a rear claw. Our new part will help with this because rear claws are usually small and compact. Since our part is small and compact, it will fit perfectly in a robot design this year. This part will be really useful because all of our robots from previous years and this year have a rear claw. This part will also work great for a front claw too because it has pin holes so you can use a piece, such as a 1x2 corner connector, to connect it to a beam on your arm. Those are just some of the uses for our new piece.

How did we use Fusion 360 to design the part?

We used Fusion 360 to design our part. First, we made the bottom part of The Claw by making a rectangular prism with the correct dimensions. Next, we made the first pinhole using the hole tool and then used the pattern tool to duplicate it in an even pattern across the bottom section. After that, we used the sketch tool to make a line at a 45 degree angle and then made another rectangular prism and did the same for the next two sections. Then, we made the rest of the pinholes and the holes for a shaft to go in. Then we rounded off the corners using the fillet tool and we were done.

What did we learn from this project?

We learned many things from this project. First, we learned how to use Fusion 360, then we learned a lesson, which is that sometimes things don't always turn out how you want them to, so you have to make them again. We also learned that most things will get better when we make mistakes and improve.

Why we will use 3D design software in the future for VEX and what we will use it for:

We will use 3D design software, such as Fusion 360, to 3D model our robot. Currently, we are using snapcad. When we are in VRC in the future, there is not an app that is made specifically for 3D modeling like snapcad. Learning how to use 3D design software such as Fusion 360 will be a big help in our future. Fusion 360 also has a lot more features and functionality than snapcad. Learning how to use Fusion 360 will be a big help in our future.

Will 3D design software help us in our career path?

Carter H: Learning the 3D design software may help me in my career path because I want to be an engineer. I want to be a civil engineer because I am really interested in bridges and building things such as our team's robot. This will help me because I may need to model what something will look like and if it will fit or work.

Avery P: Learning 3D software will help me in my career path because I want to major in computer science. I want to do this because computer science is involved in almost everything out there, from vending machines in the breakroom, to 3D printing the first floor plan. 3D printing also adds abilities to resumes, and a good job means a good salary that will help pay for food, rent, and clothes. Computer science also could help me make a colossal difference in the way that things are run, which not a lot of women get. 3D printing could change my life one day.

Lexi G: Learning 3D design software will help me in my career path because I want to be a veterinarian. Animals might need a certain cast or medical stable and then I can design the cast or stable and send it in to be 3D printed. This will help me make my own treatment for my animal patients. I love working with the 3D design because there is so much to do and I love seeing all the buttons and how much you can build and create.

Taylor R: Learning 3D design software will help me in my career path, because I want to be an High School math teacher. I want to be a high school math teacher, because I love working with numbers, and I like teaching things, especially things math related. I could use it to make 3-D shapes to help demonstrate how to solve a certain problem dealing with geometry. I like working with 3-D design software, because you can create almost everything just with computer software.

Luke T: 3-D design will help me in my career path to become an economist because I might have to use it in presentations and representations for my clients. I would like to become an economist because I am really good with numbers and I love to work with them. 3-D design will help me in many ways and it is a fun skill to learn and do.