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Vex 4478F Online Make It Real CAD Engineering Challenge

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We decided to model a 1xL because it is a very useful part that is not officially manufactured by Vex. If we needed a 1xL before, we would have to sacrifice an angle bar and spend around 10-15 minutes at least cutting and sanding it before it was ready for use.

1xLs are very useful for arm joints where c-channels or standoffs cannot be used. In a flipout claw design, they can be used as the ligaments between the arm and the claw. They cut down on weight and space while still having decent structural integrity. The 1xL featured is a 1x25x1 which, if necessary, could be cut shorter. The holes are evenly spaced and accurate to the real part. There are square cutouts on the edge of the 1xL every 5 holes, to help with attachment.

Tinkercad V4.10 was used to make this model. I took measurements of each dimension, the hole width and spacing, the length, width, and height of each segment, and the dimensions of the edge cutouts (which are slightly inaccurate, but are for visual purposes only).

I learned that 3D modeling software is very useful and important. Not only does it allow you to sketch out design concepts in 3D space, but also to print them. I plan to keep using 3D modeling software in the future, whether for robotics or some other engineering project. In a competitive game like this, being able to 3D print parts gives you a serious advantage if what you made is completely unique. Not only that, but knowing how to use this software and those like it open up many career and educational opportunities.