Team 8110Z/Sierra
1/8/18

A bearing flat's purpose is to be put on a piece of metal to make a round hole, allowing an axel to be put in and rotate more smoothly without bouncing around. The part we created is, in essence, just a bearing flat, but modified. A normal bearing flat does not fit inside a three-wide C-Channel, so this meant that my team was continually having to saw down bearing flats, as it was the only way we could get them inside the C-Channel to put together our robot. What we designed in AutoDesk Inventor is much like a normal bearing flat, but instead of being 35 millimeters in length, it is only 31 millimeters.

The issue my team had come across, and inspired the creation of this part, was that our bearing flats would not fit inside the three-wide C-Channels we were using to put together our double-reverse four bar. Due to this, we were constantly filing down the bearing flats, and by hand. Each bearing flat could take ten to fifteen minutes. We needed bearing flats so the axels could rotate properly because the double-reverse four bar was, in part, held together by axles. The filing down of bearing flats quickly became an issue. Dawn and I, Tyler, came up with this new part that could be used as a replacement of the original bearing flats. The purpose our modified bearing flat serves is just the same as before, working both vertically and horizontally, just with the added bonus of fitting within a three-wide.

To build our part, Dawn used AutoDesk Inventor. Originally, the 2018 version was used, however, she could not load the file in 2017 Inventor, leading to having to completely redo the bearing flat. It was tedious, but she managed.

What we learned is that Inventor is not reverse-update compatible, and that creating a bearing flat is tedious. Dawn will most likely use 3D design software in her future, as she is taking engineering classes, and is considering a career in engineering. I, on the other hand, most likely will not be using this software. Inventor would help Dawn in the career paths she is considering, as she wants to do something with building and creating. For me, it would be of no use, as I am considering a career in history.