



Make it Real Online Challenge

The part I made, was to solve the problem of wheels making the chassis too big and making robots out of the size constraint. The part, a wheel, is 0.5 inches thick and is about half the thickness of an omni wheel. This is incorporated in a robot design by replacing a regular omni wheel with this wheel. The 3D part was made (using Autodesk Inventor Professional 2015), by first starting a new sketch and sketching out the outside of the wheel, or everything but the spokes. We sketched this out, by using the circle tool to make a 4.5 inch diameter circle and an inner 4 inch circle. After that, I extruded the sketch out 0.5 inches and started a new sketch for the spokes. We sketched the spokes by making two squares, forming a compass rose, with the vertices of the square touching the circle. Continuing on, we extruded the spokes 0.5 inches, flush with the wheel. Next, we added triangles to every other point on the compass rose to form a cross, by making a sketch, then extruding it 0.5 inches, flush with the wheel. Finally, we made a square in the middle with 0.125 inch sides, in the middle to accommodate for the axle.

During this online challenge, we learned how to sketch, dimension sketches, extrude, and move sketches. I will use 3D modeling software in the future, to: communicate ideas, model plastic parts to 3D print, and for school projects. This software is useful to our team to communicate ideas, along with doing online challenges like this one. Learning how to 3D model, will help me in future careers, because it will help me communicate my ideas.

.

