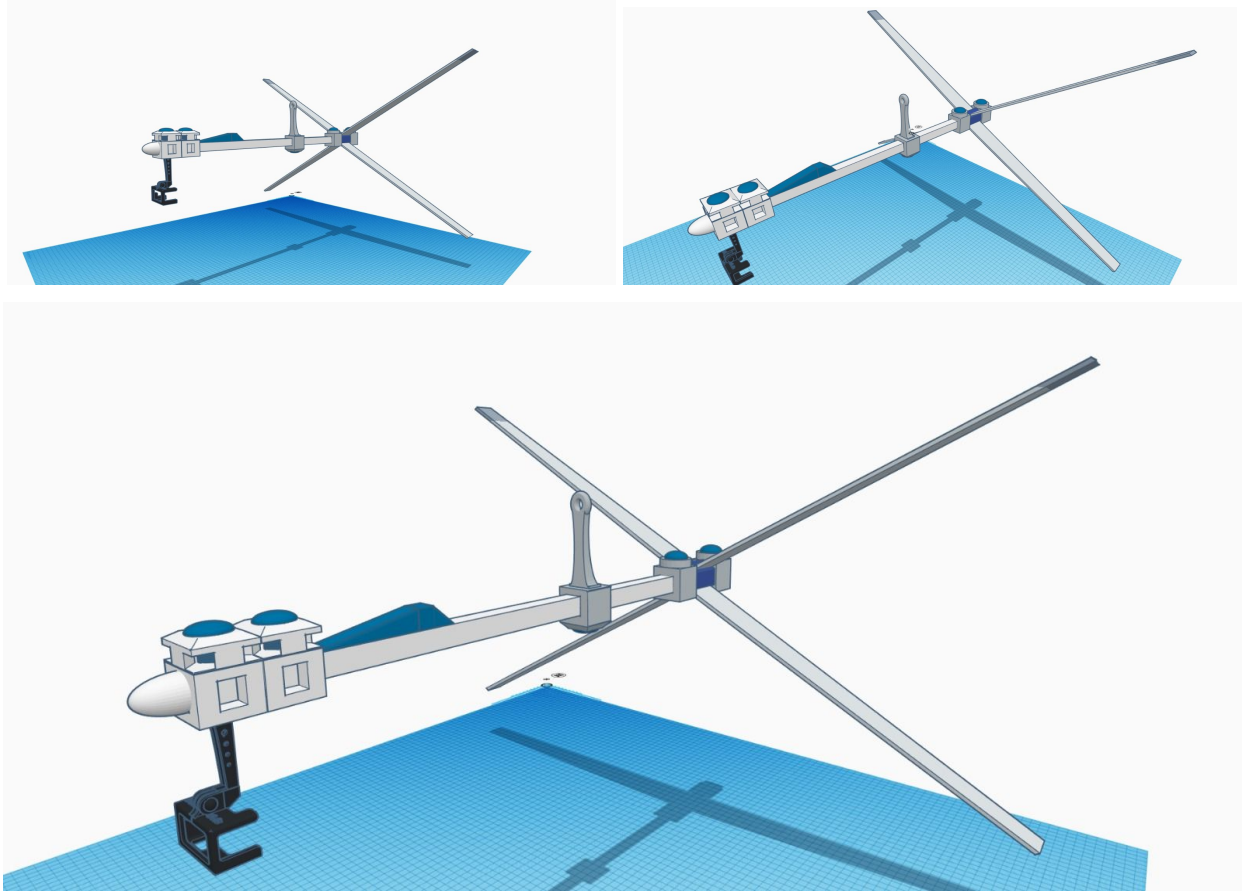


CAD4: First Group Design



Three screenshots of the final design, displaying the unique X-wing concept and unique aesthetic aspects, such as a camera that is hanging a fair distance away from the dowel.

The design is modeled to be similar to the traditional style of an aeropod, but with the exception of X-wings, making the aeropod more aesthetically pleasing. The kite latch was modeled after a traditional kite latch, with a type of screw that allows for mobility of the kite latch. The mobility of the kite latch allows for greater practicality since the torque on both sides of the aeropod need to be equal in order to allow proper flight. In general, all the screws that connect the pieces of the aeropod together are there to aid in the simplicity and modularity of the product. The customer desired that there be simple ways to construct the product, and so these screws allow for such, however, all screws will not be 3D printed. Furthermore, the customer desired that the camera be a fair distance from the aeropod. As such, the design was constructed to model that, as seen by the low camera in comparison to where the dowel is located.

Additionally, the customer desired that there be Turner-Bartel's logo on the design. The logo will be a sticker that will be located on one of the fins. Finally, there is a miniature cockpit, a blue wave near the front of the aeropod, that adds into aesthetics.

The design was created in such a way that addresses customer needs, translated to engineering specifications. The customer expressed high interest in a design that was aesthetically pleasing, while at the same time being simple to make, but with more favorability towards aesthetics. As such, aesthetics was weighted at 8, and simplicity at 7. Although aesthetics did not have an engineering specification, the x-wings and school logo allowed for an aesthetically pleasing model. For simplicity, the engineering specification was the number of individual parts that will be connected together, which had a target value of under 15 parts. The customer need for educational quality as weighted the highest, with a weighting of 10. Although there is no engineering specification, this need was addressed through the use of the interactive app that allows the customer to view any details of the aeropod. For authenticity, the weighting was an 8. The customer needs to believe that the aeropod will work, and as such, since it almost resembles (with the exception of the x-wings) the traditional design that already did work, the customer can believe this design will work as well. After all, the customer liked the idea of x-wings during the previous design review and believed that all models can work. For practicality, the weighting was a seven. In order to make sure that the kite can carry the aeropod, the translated engineering specification was a measure of the weight of the aeropod, which can only be up to five pounds. Furthermore, the movable kite latch addresses the practicality customer need, for we can ensure that the torque is equal on both sides of the aeropod, to make a proper flight. For reliability, the weighting was a 7. Essentially, the fewer the moving parts, the more likely it is it will function properly. Thus, the engineering specification for this specific need was measured as the number of moving parts, with a target value of 2. Finally, feasibility was weighted as an 8, which was measured (the corresponding engineering specification) as the total cost of the filament, with a target value of under \$20.