**Gearbox Project Description**

**Objective:** Create a gearbox to achieve more torque on the shaft by converting the rotations on the handle to a smaller gear ratio.

**Summary:**  Had no access to some of the parts (Boston Worm and Boston Gear) that were included in the final assembly. Researched online for the parts. Also, worked to understand how to mate faces and edges to connect parts. Created the final assembly but was unable to acquire the exact gears leading to slight misalignment.

**Electronic Enclosure**

**Objective:** Create an enclosure capable of holding together multiple circuits and wires.

**Summary:** Reference drawings were complicated and dimensions were cramped together causing mistakes. One sketch for Cut\_Extrude\_6 was drawn on the opposing face. Forced to scrap sketches and restarted multiple times. Learned to read drawings more carefully to prevent further mistakes.

**Plastic Fork**

**Objective:** Create a 3D model of a plastic fork to further knowledge of lofts.

**Summary:** Took measurements of a plastic fork. Started by connecting the sketches with a single loft but the final results were twisted and deformed. Decided to break it up into two lofts; the handle and the prongs. Tried to 3D print the final product but realized the handle needed structural supports. Compared to original fork, the 3D model was slightly off because of rounded dimensions.

**Wind Turbine**

**Objective:** Recreate an old design for a wind turbine and 3D print it.

**Summary:** Current 3D printer only prints within a 6 x 6 x 6 in cube. Multiple parts were adjusted to fit in the size requirement. The mast was split into two smaller parts and the blades were shortened while maintaining the curves from the original design. Had to change designs of the masts and blades to work with what was available.