Abstract

Have you ever sat at a picnic table wishing for a more comfortable arrangement or perhaps more leg room? We did. The design goal of this project was to design a table more comfortable and easier to sit at for the user. With the scope of the table in hand, we set out in hopes of a fully functional design.

Design Evolution

Our survey of Giovanni’s customers showed the paramount hassle within the current picnic table design lay in the ease of exiting the table. In order to increase the comfort and accessibility of the picnic bench a variety of design proposals were devised.

- Benches: Independent sliding vs. uniform
- Backrest: Rotating “desk” vs. Vertical “Cooler handle”
- Extension: Fold out vs. hinge-able table top

Final Design

All of the design goals and specifications were achieved through our features. These included

- Adjustable Distance Sliding benches (Up To 8 inches (20.32 cm) and three lockable positions)
- Folding table Top Extensions (1 Foot (30.48 cm) On Both Sides)
- Optional Backrests (For Added Comfort 4 on either side)

Conclusion and Results

A functional more improved picnic table was the outcome of all our work. It met with all our design goals and specifications. The table serves to better facilitate use as well as improve comfort. It manages to keep the strengths of a regular picnic table; as our ABAQUS model shows that the bench even while fully extended, should only deflect 1.2 inches (3.05 cm). The end product of this project was exactly what we set out to build, a table that retains the same dimensions and strength of a standard picnic table yet has the added features we designed making it more accessible and comfortable.

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