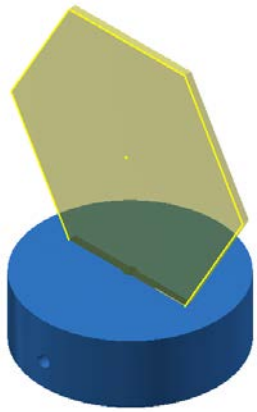
CIM 2017: LED Sign Mass Production

Client Company: Dell Computers

Designers: Cazenovia HS CIM Classes



Problem Statement: Dell Computer Corporation has determined that it would like to do a “Give Away” promotion for a new line of laptops that they are coming out with next year.

Design Statement: Design a light up promotional sign that will work with the new laptops that can be customized. You will design the item from start to finish, and provide a prototype, cost analysis for mass production, a process flow chart, and all documentation including working drawings.

Design Criteria:

- Must be inexpensive: it’s a “Give Away”.
- Must be safe for consumers of all ages.
- Must work with the computer as a power source.
- Must light up and show different colors.
- Must be manufacturable in this classroom.
- Sign must be fit on a 4” x 4” piece of 3/8” thick acrylic.
- Base must be less than 3.5” x 3.5” piece of material.
- Parts must be toleranced to “force fit” together.

Design Constraints:

- Total Design time: 3 weeks
- Design & Inventor time: 1 week
- Manufacturing set up: 1 week
- Mass Production: 1 week.
- Base made on CNC machine
- Sign made on Laser cutter

LED Sign Project Rubric

Name:_____

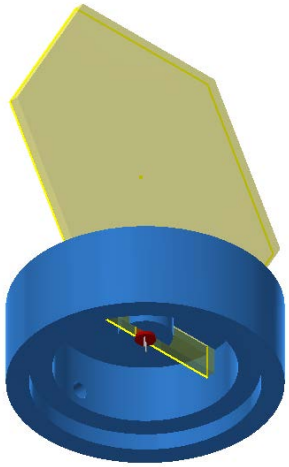
Date:_____ Grade:_____-__

Below are the criteria that this project is being graded on

_____ (10) **Journal Sketches**
Sketches of your product. Detailed, legible, with notes, and dims; like exemplars.

_____ (10) **Journaling**
All journaling completed in your notebook. Including weekly summary

_____ (10) **Participation**
Worked on all shifts using all tools and machines.



_____ (40) **Inventor Files/DWGs**
_____ (10) Sign

_____ (10) Base

_____ (10) Cover

_____ (10) Assembly

_____ (30) **Followed the rules**
_____ 5 **Sign Fit**: Show dimensions of tolerance.

_____ 5 **Base & Sign Dimensions**: Show dimensions in Inventor.

_____ 5 **LED Touches**: Show Inventor section view.

_____ 5 **LED is supported**: Shown in Inventor.

_____ 5 **Base can be clamped in machine**: Show in Inventor

_____ 5 **Cord fits through slot/hole**: Show in Inventor

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_____(100) TOTAL

NOTES: