



## IDEA Engineering Design Competition

2017

### **Locker Organizer**

**Problem Statement:** Your friends are frustrated with their hall lockers at school. They have a hard time keeping their locker and its supplies organized, accessible, and secure.. They know you are taking and high school engineering design class and will be attending college in the near future to study engineering and they have challenged you to solve this problem.

The problem is that the average high school student has a terrible time keeping his/her locker supplies organized. They have trouble keeping all supplies together and accessible when using their locker and also sharing it with friends. Pencils and pens are scattered, calculator is missing, phone and ear buds/head phones get tangled and loss. You get the picture.

Colors on the product must be appropriate and show school identity.

It must be able to be personalized.

Must consist of at least 4 parts.

Must be sanitary and easily cleaned.

Each part must be assigned appropriate materials.

The design must be portable and hold the following items.

- Pencil and pens
- Miscellaneous items-- tape, scissors, paper clips
- Calculator
- Phone for schools that require they be left in locker (or held to be used for fixing hair/makeup/etc)
- Hooks for hanging items
- A small mirror
- An item of your choosing
- Include a picture and the dimensions of your school locker- otherwise MAX width and depth = 11" X 11"
- Temporarily attaches and is easy to remove (not permanently attached)
- Must be affordable—under \$20
- It will be a unique product, not a copy of an existing product—it may share features.

## **Procedure**

Your firm, made up of 2 or 3 members, will focus on completing a presentation and project solution to present and sell your firm's design to the client. Upon arrival to the IDEA competition, all members of the firm should come prepared to give a presentation of their project solution to a panel of judges. Your firm should arrive to the competition with the presentation and project solution made ahead of time. The presentation should include:

## **Deliverables:**

### Design solution:

- Engineering Notebook documenting the design process and your design solution.
- A Gantt Chart documenting the solution process and activities involved.
- A full set of engineering drawings for the solution using AutoCAD, Inventor, SolidWorks, etc.
- A prototype of your solution
- Any additional information or documentation needed to communicate the design solution.

### Display:

- Present your product with a medium of your choice.
- Title and description of the Engineering Design competition and your design solution.
- Documentation of the design process and your design solution

### Presentation:

An up to 10 minute presentation of your product including your design, unique features of your design, estimated cost to produce, and lessons learned through the design process. A 5-minute question and answer period will follow your presentation.

### Other documentation:

To be considered for an interview a resume and mock business card must be presented to the judges.

## Judging Criteria

Judges will rate the following criteria based off of information learned through the presentations and the design solution.

1. Quality and Clarity of Presentation	20%	20 pts
2. Quality of the Engineering Notebook	20%	20 pts
3. Functionality and Practicality of the Design Solution	20%	20 pts
4. Technical Quality of Documentation and Drawings	20%	20 pts
5. Technical Quality of Prototype	10%	10 pts
6. <u>Meeting of Presentation Time Requirements</u>	<u>10%</u>	<u>10 pts</u>
TOTAL	100%	100 pts

Each category above will be rated on a scale of one (poor) to max points (excellent).