STADIUM SEAT DESIGN PROJECT

Engineers are problem solvers; employers hire them specifically for their problem solving skills. Engineers design and create new solutions to complex unique problems or even simple everyday ones. As Albert Einstein said, "Scientists investigate that which already is; Engineers create that which has never been." In today's world many people think computers are what solve the problems. This is untrue, it is the designer or engineer that solves the problems the computer is merely a tool. There are some guidelines on how to help solve a design problem, but it is impossible to teach a specific approach that will always lead to the solution. The best way to solve a problem is to do it, so lets do it!

You have just been hired by Coleman Company, Inc. Coleman is an American company that specializes in outdoor recreation products. Historically, they are known for camping gear but are quickly entering the tailgating market. Your first engineering challenge is to design a portable, collapsible stadium seat to use within standard metal bleachers.

Items you will need to research and address:
- What are the dimensions of a standard metal bleacher? You need to know this so you can design your chair to fit properly within it.
- The chair will need some type of cup holder and possibly a food holder.
- Possible storage for items such as cameras, rain poncho, blanket, etc.
- What makes your chair design desirable to a tailgating consumer?
- How easy is your chair to carry, fold, set-up?
- Consider factors such as weight and cost of materials. How can you minimize costs while providing all the required features?
- Branding or Logos?
- Security need to quickly verify nothing illegal is being smuggled in the chairs into the stadium.
- Any other factors you may think of.

Begin with design sketches. Sketch out different ideas and variations of your seat. Save all sketches, showing your progression of ideas is not only helpful to yourself but often times bosses like to see it as well and it is an important part of the design process.

Research ideas and gather information from the internet. Be sure you are using reliable sites.

Create a display board that you will present and explain to the Coleman Company Design Team *(aka your classmates)* Your display board should include at the **<u>minimum</u>** the following:

- Title
- Design sketches
- Working drawings (*sketches or drawn on the computer*) showing the front view, side view, a 3-D view and any other views necessary to fully describe your chair design.
- Showing how you researched and addressed the items at the top of this page.
- A bill of materials for the stadium seat.
- Estimate the cost to produce the seat, and prepare a budget. (Hint: Remember to include any sales tax in the cost of materials so that your budget will not be underfunded.)
- Your name and date
- Any additional pictures, sketches, or information that will help get your idea across.
- Grammar and spelling, organization and neatness are important.

Materials Provided
Poster Board
Scissors
Markers, Colored Pencils, Crayons
Mylar for desk protection
Glue
Tape
Computers- Black and White Printer

Stadium Seat Design Project
Rubric

Neatness of Display Board

4	3	2	1	0

Design Sketches

5	4	3	2	1	0

Working Drawings

8	7	6	5	4	3	2	1	0

Bill of Materials

4	3	2	1	0

Level of Research

4	3	2	1	0

Cost Estimate

4	3	2	1	0

Effort/ Pride in Work

6	5	4	3	2	1	0

Class Presentation

5	4	3	2	1	0

Total Points: _____/ 40

Comments: