STRUCTURAL DESIGN CHALLENGE

THIS IS A CHAPTER EVENT AND SHOULD BE ENTERED IN THE CLUB NAME (ex. Smith High School TSA).

Enter online at www.GeorgiaNationalFair.com
(http://www.georgianationalfair.com/youth-educational-exhibits/) by September 13, 2017.

DIVISION 40901 STRUCTURAL DESIGN CHALLENGE

CLASS
01 The Chair

OBJECTIVE: Design and build a cardboard chair that will comfortably support a person weighing up to 300lbs. You will use the engineering design process and keep track of brainstorming, iterations, sketches and the prototyping process. Your chair and an engineering notebook will both be submitted as part of this competition.

Entries are limited to one per chapter. (There can be up to 4 members on the team)

PROCEDURES: Students should submit the completed chair and engineering book during check-in at the GNF Reaves Arena. Go/No Go criteria will be used to determine eligibility. A time sheet will be provided for sign-up at check in for interview times. Rubric scores will be based on a review of the engineering book and interviews.

A copy of the online registration confirmation will be required to check-in for competition.

CONTEST RULES:
All exhibitors are required to read and abide by the Georgia National Fair General Rules and Regulations.
PLEASE NOTE: IT IS YOUR RESPONSIBILITY TO READ AND UNDERSTAND THE RULES. If you have questions, you may certainly e-mail us at sprice@gatsa.org or contests@gnfa.com. Please help us prevent entry disqualifications.
Criteria and Constraints (Chairs not meeting these criteria will result in a disqualification.):
1. Chair must be made entirely out of cardboard and glue.
2. The chair must have a seat and a back.
3.The seat of the chair must be at least 16” from the floor (measured to the bottom of the seat).
4.The top of the back must be no less than 30” from the floor.
5. The chair must be portable (able to be carried through standard doors) with a mass of no more than 10 lbs.
6. The chair must be able to support a mass of up to 300 lbs without showing major signs of stress.
7. Entry must include an engineering notebook of one of the following types:
- Oxford Clear-Front Report Cover
- Hard bound engineering notebook
- Softbound composition notebook

EVALUATION:
The chair must pass a GO-NO-GO inspection:
- Is the chair made entirely out of cardboard and glue (no paint or non-cardboard parts)?
- Does the chair have a seat and a back?
- Is the seat of the chair at least 16” from the floor (measured to the bottom of the seat)?
- Is the top of the back no less than 30” from the floor?
- Is the chair portable (able to be carried through standard doors) with a mass of no more than 10 lbs?
- Does the chair support a mass of up to 300 lbs without shows major signs of stress?

Any device receiving a “No” answer to any of the above requirements will result in the device NOT BEING FURTHER EVALUATED.

STRUCTURAL DESIGN CHALLENGE (continued)

Engineering Book:

- Has the objective been clearly identified? Score 0 - 5
- Drawings have been included that show an overall design process. These drawings appear throughout the book and clearly show a progression of brainstorming, iterations, prototyping, and testing. Score 0 - 5
- Daily logs have been included that represent at least 5 days worth of work. Score 0 - 5
- A clear prototype testing process is shown to evaluate various iterations of the chair. Score 0 - 5

Interview:

Performance 1-10 points per categiory

- Organization - The presentation/interview is logical, well organized, and easy to follow
- Knowledge - There is clear evidence of a thorough understanding of the design challenge; questions are answered well.
- Articulation - The presentation/interview provides a clear, concise, and easy-to-follow description of the project.
- Delivery - The team/individual is well-spoken and distinct in the presentation/ interview; participant posture, gestures, and eye contact result in a polished, natural, and effective delivery.