



## The asbe Foundation Design Challenge 2014

### **Rules and Guidelines for the Engineering Design Category**

The **Engineering Design Challenge** will require the student to design a given product taking into consideration its functionality, material, manufacturing processes, presented as a properly made engineering drawing.

#### **Eligibility:**

The *Design Challenge* is open to all students, grades 9 through 12, who have a background in drafting and CAD. The student may seek advice and is encouraged to research the project before he/she begins, but the design and drawing must be the product of the student contestant. Only one entry per student is permitted, although the school may have as many students enter as they wish.

#### **The *Engineering Design Category* Problem:**

The Engineering Design Category involves the design of a front grill for a generic car that is connected to the frame of a recreational vehicle. The size is to be 300 mm high and 720 mm wide or 360 mm from each direction of center line. The front grill slopes from top to bottom at a 6 degree angle and from center to each end slopes 7 degrees. The Challenge is to design a front grill that has more than three parts in the design. In addition, show how the parts are fastened together and to the frame.

Drawings showing the mounting surface and placement of the grill are to be shown.

#### **Format and Presentation:**

- Each part of the grill must be shown in orthographic projection using at least two views; auxiliary and section views as needed. In addition to the orthographic views, a pictorial view may be shown.
- An orthographic view of the assembly, showing at least three views and any other necessary auxiliary or section views must be shown.
- Fasteners and other such devices must also be shown in their proper assembled position.
- A scale exploded pictorial assembly view may be used to show the position of each part in relation to the whole assembly.
- All views need to be carefully and logically arranged and spaced on the sheet.

- A stock list must show all of the components including material, part name, and number required, and referenced with balloons from either the orthographic assembly or on an exploded pictorial assembly.
- A single sheet only may be submitted, but must be no larger than 36 x 48 inches.
- The title block will be covered during judging, but must be fully filled out with the student's **legal name; first and last**. (This information is used for award distribution.)

You will be judged on:

- Principles of description geometry
- Layout construction
- Following directions
- Grill assembly design
  - Material
  - Cost
  - Fastening ability
  - Functionality
  - Aesthetics of design
- Originality of the design

Please follow the student design checklist:

- Are you and your school registered? (Check due dates)
- Students like us on Facebook
- What are you designing?
- Document design with process explanation
- Read & Interpret directions for your level
- Make a list of what you need on your project
- Make a list of how your project will be judged
- Is your drawing balanced on the page?
- Is your name printed on your title block as you would want it on your check?
- Have you met all timelines?

Make sure your students are registered by January 11, 2014 by joining our mailing list. (Signup sheet will be provided)

**The due date for entries is:**

3pm Friday February 21, 2014

**Entries must be mailed or delivered to:**

asbe Foundation Design Challenge  
Hanna Clinard  
Consultant Services Dept.  
Macomb Intermediate School District  
44001 Garfield Rd.  
Clinton Twp, MI 48038  
Ph: 586-228-3493  
eMail: [hclinard@misd.net](mailto:hclinard@misd.net)

**Join our mailing list for Design Challenge updates**

Send your name and email address to:

[donaldleeshook@yahoo.com](mailto:donaldleeshook@yahoo.com) or [tmodrzejewski@asbefound.org](mailto:tmodrzejewski@asbefound.org)

“Like” us on Facebook – Friends of asbe Foundation

Enroll your school and students **now** to ensure you receive all the latest updates and reminders for the contest and asbe Foundation.

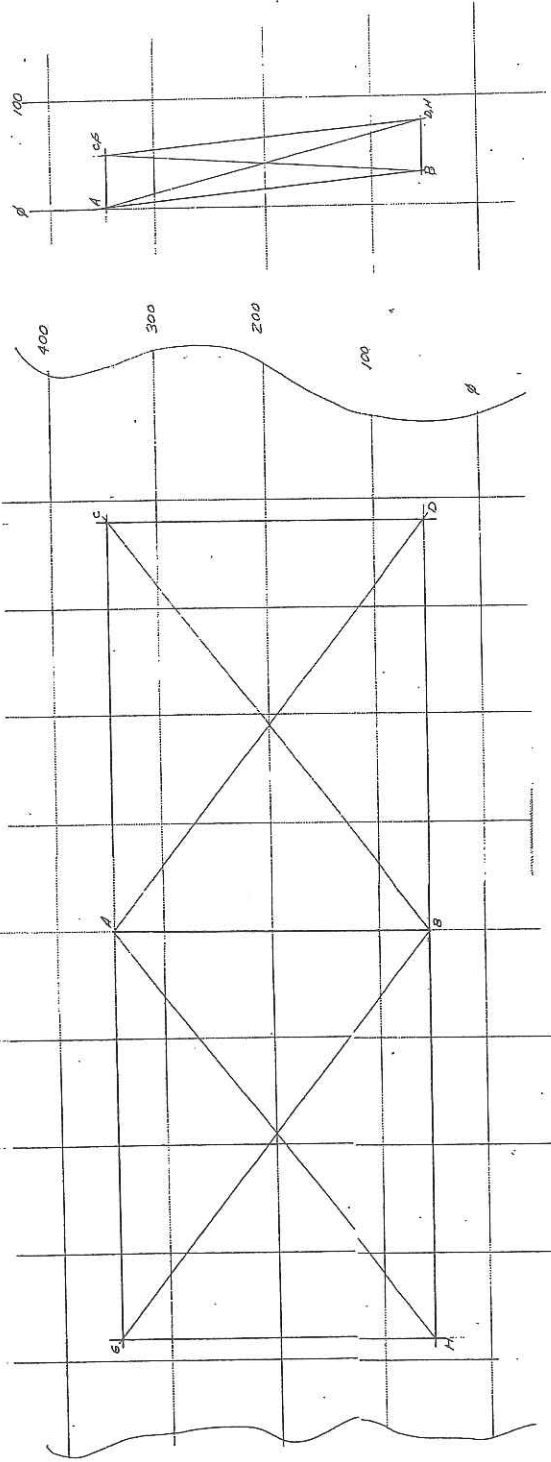
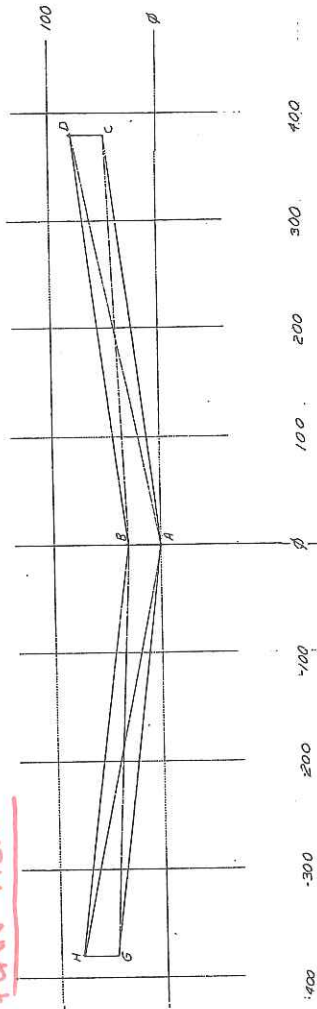
**Awards Dinner:** Winners of the Engineering Design Challenge and their teachers will be invited to attend the annual celebration as our guests. Past winners and speakers are posted on our Facebook page.

**Awards:**

- 1<sup>st</sup> place \$400 + “Jennings Award” Plaque
- 2<sup>nd</sup> place \$300 + Certificate of Honor
- 3<sup>rd</sup> place \$200 + Certificate of Honor
- 4<sup>th</sup> up to 10<sup>th</sup> \$100 + Certificate of Honor
- Best in School, \$50 + Certificate of Merit

An essential aspect of Creativity is not being afraid to fail.

PLAN VIEW



FRONT VIEW

SIDE VIEW