

71st High School Design Challenge

2025-2026 Rules and Guidelines

Category: Engineering Design



Challenge Overview

The **Engineering Design** Category challenges students to develop a design solution to a given automotive-based problem. Consideration is given to the design's innovation, functionality, appearance, mounting and/or attachments. The Engineering Design Category utilizes drafting/CAD skills and must be submitted as a properly made engineering drawing using orthographic projection.

Eligibility Requirements

- 9-12 grade students with a background in computer aided design (CAD).
- Schools can have multiple student entries.
- 1 entry per student.

Research and Support

Contestants are encouraged to research the project before beginning and may seek out advice during this early stage; however, the design and submission must be the creation of the contestant.

Awards

1st Place = \$400

2nd Place = \$300

3rd Place = \$200

4th-8th Place = \$100

Due Date:

Friday April 3, 2026

Engineering Design Category

The task for the Engineering Design Category is to **create a functional design of a rear deck air spoiler**. A digital model of a portion of the rear deck will be provided in the form of an STP file from which to build the design using any CAD system available to you.

Specifications, Format, and Presentation Requirements

Design an air spoiler attached to the deck lid of a passenger car, including the supporting posts or brackets and attachments

- The air spoiler must be a separate assembly consisting of the wing and at least two or more attaching posts or brackets and attached with some form of fastening system. The fastening methods must be fully defined.
- The spoiler must consist of at least three pieces, The wing and at least two attaching posts or brackets. The spoiler system needs to be clearly defined using necessary auxiliary views and sections.
- The fastening system, using screws, clips or other forms of attachments must be clearly defined by necessary views and sections along with any seals or gaskets.
- The design of the air spoiler system must not include the name of the student school, school logo, or otherwise identify the student, school, or the school district.
- Each part of the air spoiler assembly must be shown in orthographic projection using at least two views. Section, auxiliary; iso views can be used as needed to fully describe the wing and post or bracket assembly to clearly show how they fit together and are assembled.
- Each component of the design must be labelled with part name and material.
- Fasteners and other such devices must also be shown in their proper assembled position.
- All views need to be carefully, correctly, and logically arranged and spaced on the sheet.
- Section cut lines must be shown in the orthographic views, plan view, side view, end views, or auxiliary views.

Entries will be judged on:

- Creativity of the design
- Clearly defined functionality of the design
- Ability to be assembled
- Serviceability
- Clearly defined fastening and joining methods
- Principles of proper engineering drawing; necessary views shown, overall design appearance
- Decision of judges are final

Register as a Participant

Let us know you are working on the project so we can stay connected throughout your design process.

Register at:

<https://www.asbefoundation.org/design-challenge>



Submissions to (mailed or delivered):

asbe Design Challenge
ATTN:
Shannon Williams
Macomb ISD
44001 Garfield Rd.
Clinton Twp, MI 48038

- No dimensions need to be shown on the drawing.
- An exploded pictorial assembly view may be used but is not required.
- Supporting written documentation describing the design, choice of materials, cost considerations, and any unique design features, are encouraged but not required. If separate, the documentation should be firmly attached to the drawing.

Submission Requirements and Format

- The Engineering Design category has revised submission requirements: **Note: a change effective this year; e-mail submissions cannot be accepted.** All submissions must be sent as a 11 x 17 document (see physical address on the left).
- The entry must be created on a single sheet, then reduced to 11 x 17 inches for submission.
- A physical model of the spoiler assembly may be submitted with the drawing but must be less than full scale. (Maximum - five pounds)
- Physical models and/or display boards must be submitted in person.
- Supporting written documentation describing the design, choice of materials, cost considerations, and any unique design features, are encouraged but not required. If separate, the documentation should be an 8 ½ x 11 printed document submitted along with the 11 x 17 plot in the same submission.
- The entry is to be identified with the “Student Information Block” that is included with the contest materials. The “Student Information Block” should appear in the lower right-hand corner of the print. It should be printed and attached to any physical models if they are submitted. Student Information Block should include students name, grade, school, and teacher. Student and school information will be masked during judging.
- Note: The clear and complete depiction of all necessary views to define the spoiler and any assemblies and fasteners are a critical consideration in the judging of your entry. See an example of a typical acceptable engineering submission included with the contest information on our website.

Questions Regarding Design Challenge

DesignChallenge@asbeFoundation.org

Award Dinner

Finalists of the Design Challenge, their parents and teacher will be invited to attend the annual Awards Dinner celebration as our guests. This event will be held on April 23rd, 2026.

Photos of past winners and Awards Dinner speakers are posted on our website:

<https://www.asbefoundation.org/media>