INTERNATIONAL SOAP BOX DERBY

Gravity Racing Challenge STEM Team Competition
High School Engineering Design Challenge

1. Open to any public, private, charter, home school, or youth organization with students in grades 9-12.

2. Team includes: 3-10 students and 2 adult coaches.

3. Overall competition: To design and manufacture a shell for a Soap Box Derby Car chassis following the competition guidelines and shell construction guidelines.

4. Judging: (2 categories) All entries will be judged in both competition categories:
   GRC Engineering Design Challenge Race
   GRC Engineering Design Challenge Best Design Shell

5. Any high school team competing in this Division must purchase the High School Engineering Design Challenge SBD kit from the International Soap Box Derby. This kit includes: assembly manual, floorboard, helmet, wheels, axles, steering, braking systems, weight bolts, and foam. Cost: $550.00

To get a quote or to place an order, contact Cindi Zagar, 330.733.8723 ext. 32.
*Pick-up or delivery arrangements should be made when placing order.

6. Website link: www.soapboxderby.org click on education then Gravity Racing Challenge tabs.

7. Complete a pre-competition inspection by the International Soap Box Derby officials which includes:
   a. Construction and assembly
   b. Competition guidelines compliance
   c. Test drive
   d. Safety check

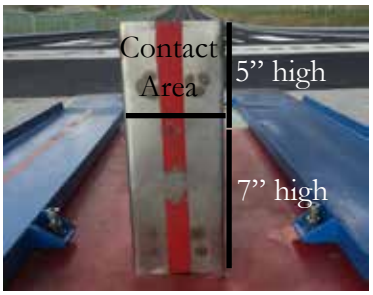
*Following inspection, the International Soap Box Derby Race officials may deem any Team's Engineering Design Challenge car ineligible to compete in the GRC racing competition.

8. For technical support, construction, or competition questions, please email Bobby Dinkins (bobby@soapboxderby.org).

Project Guidelines:
Engineering Design Challenge cars must meet the following specifications:
a. All cars must be gravity powered
b. All enclosed kit parts for the Soap Box Derby car chassis must be assembled according to instructions.
c. Shell must be constructed according to the guidelines listed.
d. Shell must be securely fastened to floorboard. **Derby staff must be able to access steering and braking components to check for proper assembly.**
e. No part of the shell may interfere with the axles, braking, driving, and steering systems.
f. All drivers must wear helmets, drive with their feet towards the front of car, and be able to exit car in 30 seconds or less.
g. Foam must be attached to the front portion of the cockpit area (see arrow in photo) according to following instructions.

- Apply adhesive (provided by others) to the surfaces per adhesive manufacturer's instructions. - - Use tape (provided by others) to temporarily clamp foam until adhesive is set.
- Foam may also be installed, using this procedure, to the sides and rear of the shell within the cock pit area.

h. Height: No part of the car shall be taller than 4' measured from the ground to the highest point of your car.
i. Width: No part of the car shall protrude past the end of the axle spindle. (Basically - don't put anything past the width of the axles.)
j. Ground Clearance: No added item/modification of the car shall be lower than 7" from the ground. Simply put - don't add anything to the bottom of the car and make sure nothing is dragging. The point of contact with the starting paddle (see photo) must be the furthest point forward of the car and be at least 7" off the ground and no more than 12" high (height of the starting paddle).



k. Weight: maximum weight with driver, car and additional weights is 280 lbs. Weights must be fastened to the chassis using approved weight bolts and not interfere with the safe operation of axles, braking, and steering systems.
l. Length: You may add items to your car that result in extending the overall length of the car. The maximum length of your car is 8'.
m. Guidelines for redrilling the floorboard: Teams must use holes predrilled for front & rear axles installation—(axles are not allowed to be moved). Brake/ Steering mount may be moved forward only to accommodate a driver.
n. Nothing can project, fall off or be shot from the car.

Shell Guidelines:
A new shell must be constructed each year in the Engineering Design Challenge. A car will nto be allowed to compete if it has a previously used shell.

You may use all, part, or none of the front cover (crate) materials that are provided in your kit when building your shell. Any material(s) can be used in the construction of the shell except glass.

NOTE: The International Soap Box Derby reserves the right to modify these guidelines for safety concerns.