



## Locations

- Classrooms
- After School
- Enrichment
- Summer Programs

## Grades

- Grades 3-12

## Length

Car build, testing and fine tuning - 12-15 hours (estimate)

## Benefits

- STEM Driven
- Inclusive
- Experiential
- Problem Solving
- Critical Thinking
- Project Based
- Team Building
- Measurable
- Life and Career Skills
- Fun and Engaging

## Content Areas

### Physical Science

- Scientific inquiry
- Forces
- Motion
- Simple machines
- Gravity
- Mass
- Friction



2014 Gravity Racing Challenge STEM Competition winners.

- Speed
- Kinetic energy
- Potential energy

### Technology

- Research
- Critical thinking
- Innovation
- Problem solving
- Collaboration
- Communications

### Engineering

- Define problem
- Test and refine
- Develop solutions
- Communicate
- Evaluate
- Manufacturing

- Engineering
- Design Emphasis

### Arts

- Visual and Fine Arts
- Creating
- Presenting
- Producing

### Mathematics

- Measurement
- Basic math
- Geometry
- Problem solving
- Time
- Weight
- Data Analysis

## Funding

- Local Businesses
- Community Organizations
- Parent/Teacher Organizations
- Foundations and Grants
- After School Funding

## Orders

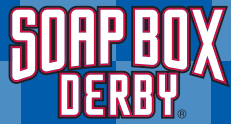
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 Soap Box Derby  
 330.733.8723  
[soapbox@soapboxderby.org](mailto:soapbox@soapboxderby.org)  
 \* Prices Subject To Change



# STEM Based Team Competition



*It's gravity powered and STEM driven!*



# Soap Box Derby GRC STEM Team Competition



Since 1934 Soap Box Derby has been an *All-American Racing* tradition which provides youth with racing competitions in cities worldwide and hosts the FirstEnergy All-American Soap Box Derby World Championship Race annually at the historic Derby Downs Track in Akron, Ohio.

## Mission

Build knowledge and character, and to create meaningful experiences through collaboration and fair and honest competition.

## Makeup of Team

Two adult coaches and 3-10 children (driver, alternate driver, pit crew, and media specialists).

## Divisions

**Grades 3 - 5**  
Stock Car



Maximum size of driver is 5'3" tall and 125 lbs.

Total maximum car weight with driver is 200 lbs.

Cost of kit - \$465  
Cost of wheels - \$125  
Shell - Cannot be painted

**Grades 5 - 8**  
**Grades 9 - 12**  
Super Stock Car



Maximum size of driver is 6'0" tall and 170 lbs.

Total maximum car weight with driver is 240 lbs.

Cost of kit - \$505  
Cost of wheels - \$125  
Shell - Can be painted

**Grades 9-12**  
**High School Engineering Design Challenge**  
Adult Car

Teams in the High School Engineering Design Challenge construct Soap Box Derby cars using the Derby's Adult Soap Box Derby kit. Teams assemble the chassis of their car according to the provided plans. They then use their creativity, engineering and design skills to build the shell according to the guidelines of the Challenge.

Total maximum car weight with driver is 280 lbs.

Cost of kit - \$550  
Includes wheels



2016 Best Designed High School Engineering Design Challenge Car - Copley High School.

## Additional Items

**Weights**  
Cost - \$26 - \$38 each  
(Amount needed determined by driver weight)

**Weight Bolts**  
Cost - \$7.50

**Tool Kit**  
Cost - \$135



**Note:** All of the kits, wheels, weights, etc. are one-time costs.

## Car Build Videos

Learn how to build a Soap Box Derby car. Jared Zimmerman, host of Velocity's "Car Fix," will walk you through step-by-step. Watch the full video, or choose the video with the step you need. Available on the Derby's YouTube Channel.

