

2023

Hot Rod CO2 Car Competition



2023: NHRA Top Fuel Dragsters - must include an engine, seat, exhaust, removeable body shroud, and roll cage over the driver seat.

2024: Formula 1 Race Car – realistic model with exposed wheels/tires, cowl induction, front spoiler and rear spoiler, and a roll cage over the driver compartment.

2025: NHRA Funny Car – must include an engine, seat, exhaust, removeable body shroud, and roll cage over the driver seat.

2026: Pro Stock Pickup - must include an engine, seat, exhaust, removeable body shroud, and roll cage over the driver seat.

2027: Hot Rod/Classic Gasser must include an engine, seat, exhaust, removeable body shroud or hinged hood to expose the engine compartment, and roll cage.

Hot Rod Competition (HRC) provides technology students with another opportunity to use their knowledge and skills in problem solving and the fun and excitement of racing competition. The goal of HRC is to encourage students to design and build realistic looking one-fourth mile hot rod car models. The project has been carefully planned to allow students to create realistic scale models of dragsters, funny cars, pro-stock cars and trucks and still have a chance to win races. The vehicle should be built of several parts or sub-assemblies rather than carved out or 3D printed as a single unit.

Rules

- Hot Rod must be powered by one 8 gram CO2 cart ridge.
- Hot Rod must fit onto a standard CO2 track.
- If a car fails the initial weigh in, the race officials may provide student with an opportunity to bring the racer up or down to weight limits.
- Any racer deemed unsafe by judges will not be raced.
- All parts must be made of either wood or plastic. Glass and/or metal parts will be deemed unsafe. Exceptions: axles may be metal, plastic or wood.
- All decisions of weight, size limits, or safety are the responsibility of the judges. Judge's decisions are final.
- In order to qualify for judging and placing, a car must remain in safe and operable condition after all racing and be capable of safely racing again.

Specifications

- Length: 8 to 12 inches
- Width: 2 5/8 to 4 1/4 inches at the widest point on the car.
- Height: (above the race surface) minimum: 3 inches maximum: 3 3/4 inches
- Weight: (not including CO2 cartridge) minimum 100 grams
- Power Plant Chamber Wall Thickness: minimum 1/8 inch around the CO2 cartridge
- Depth: minimum 1 7/8 inches maximum 2 1/8 inches
- Center: Power Plant Chamber Center to Race Surface: 1 1/8 to 1 7/8 inches
- Guide Lugs: minimum: 2, must be spaced at least 4 inches apart.
- Required Equipment: Front mounted engine with side exhaust pipes (Note: Some Gassers exhaust through the front bumper).
- Optional Equipment: Driver, pinstripes, decals or stickers, engine wiring and anything else to enhance the realistic look of the truck.

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Documentation

- Student will provide an Engineering Portfolio that will be submitted in a three brad folder (no binders allowed). The Engineering Portfolio must include:
- Cover page with Student ID#, Category #, and Category Name.
- Table of Contents
- Research on the yearly theme
- Detailed design drawings to scale, no larger than 11" X 17", of all of the parts, sub-assemblies or final car with appropriate dimensions.
- Student explanation of their design
- Pictures documenting the process the build process
- MLA Cited Sources for Research

Judging

- 25% Appearance: Quality of craftsmanship and appearance. Awarded 1st through number of valid entries.
- 25% Engineering Portfolio: Completeness and detail level of the Engineering Portfolio. Awarded 1st through number of valid entries.
- 50% Race Results: Points will be awarded based upon race times.

Each racer will be awarded 1st through the number of valid entries for appearance, engineering portfolio and race results. The lowest combined score wins 1st Place, the second lowest combined score wins 2nd Place, and so on. In case of a tie, the car with the better appearance and engineering portfolio will place higher.