

2022-2023 High School R/C VEHICLE TASK

- A. Students must design and fabricate a “cradle” or cup and framework that is fastened to the vehicle with the cradle/cup in back, and is capable of carrying a container filled with marbles while racing around the track.
- B. The container will be a round “Sure Fresh 2.3 oz Mini Storage Container”, SKU # 206990 available from Dollar Tree, Walmart, or Amazon. The container is 2½ inches in diameter and 1 3/8 inches tall. The container will not have a lid when racing.
- C. The cradle/cup is to be permanently mounted to a student made framework. The framework with the cradle/cup must be able to be attached and detached from the vehicle and may be attached in multiple places. The attachment may NOT be done with Velcro, tape or adhesive. The framework must suspend the cradle/cup in the rear of the car.
- D. Maximum cradle/cup depth is ½ inch. Minimum height to the top of the cradle/cup when the framework is attached to the vehicle is 7 inches from the floor. Minimum distance from the rear most part of the vehicle to the center of the cradle/cup is 3 inches
- E. The container must be able to fit loosely in the cradle/cup. No Velcro, elastic bands, glue, adhesive, or anything sticky may be used to hold the container in the cradle.
- F. The cradle/cup and framework are to be student made and may be made from any material. All sharp edges must be properly protected so that no damage can occur to other vehicles, the track and its obstacles, or cause injury to other participants or spectators. If the cradle/cup and/or the framework is deemed to be dangerous by the race director, the vehicle will not be permitted to race.
- G. A mechanical or computer made drawing, with complete dimensions of the cradle/cup and framework is to be included in the portfolio. The drawing may be scaled and must be on standard 8½ by 11 paper. It also may be orthographic or pictorial. More than one drawing may be submitted if necessary. Drawings from Inventor or other programs are acceptable as long as dimensions are included.
- H. At check-in, the vehicle must have the cradle/cup and framework attached.
- I. The following procedures will be followed for the racing portion of the event.
 1. In the preliminary races, overturned or lodged vehicles are to be set back on the track at the spot of the mishap. Vehicles that accidentally exit the track are to be returned to the track at the spot of the exit. In the main race, overturned vehicles or vehicles that leave the track are to be removed completely from the track. Lodged vehicles may be freed if they still hold the container. If the container is missing, the vehicle is to be removed from the track.
 2. There will be two preliminary heats and a main race. The preliminary heats will be driven without the cradle/cup attachment, and each will be 3 to 4 minutes long (at the discretion of the race director). The driver with the best score in the preliminary heats will be the driver in the main race.
 3. The main race will be 4 to 5 minutes long (at the discretion of the race director). It will begin without the cradle/cup and framework attached to the vehicle. At the start signal, the vehicle will travel around the track to the

“pit area” where the pit crew will attach the cradle and framework, place the container in the cradle/cup, and continue racing again until the time elapses or the vehicle is removed.

4. At the end of the main race, drivers will return their cars to the pit area to have the marbles counted. For each marble missing, one lap will be deducted from the drivers score. During the main race, a vehicle that upsets, or loses the container and marbles due to its driver's actions, will be removed from the track immediately and will have one lap deducted from total laps scored for the container and each marble lost. If the upset occurs because it was hit by another vehicle, it will still be removed but no penalty points will be given.
5. If the framework and cradle/cup come loose during the race it must be driven to the pit area to be fixed. If it comes off completely, the vehicle will be removed from the track, and will have one lap deducted from total laps scored for the container and each marble lost.
6. Any vehicle in front always has the right of way. Any vehicle hitting another vehicle with right of way during the main race will have 5 laps deducted from the drivers' total lap score unless the hit causes an upset.
7. Any vehicle that hits another vehicle with right of way during the main race causing it to upset, will be removed from the track and have all of its marbles and container, plus 20% of the highest total laps scored deducted from the drivers' total lap score.
8. If a car upsets and needs to be removed from the track, other drivers must slow down (like a caution flag in a real race) so as to not hit the person(s) removing the vehicle from the track. If a vehicle hits a person in this situation, the driver will have 5 laps deducted from his lap score.
9. The main race is also an exercise in defensive driving and should be in the mind of the driver at all times.