

EV Challenge Vehicle Race Rules 2023



The EV Challenge offers students an opportunity to design, construct, and race a model battery powered electric vehicle. The role of the adult is to nurture the spirit of excitement and the joy of discovery and learning that awaits students. Adults should let students assume the responsibility for design decisions, construction, and maintenance of their vehicle, performance at a race, and winning or losing.

Sportsmanship is expected of students and teachers. Rulings of line judges and scorekeepers are final.

Materials and Vehicle Specifications:

Provided Materials:

- The motors supplied in the goHunterdon build kits are the **ONLY** motors that can be used in the competition.
- Motors, batteries, clips and related kit parts must be used without modification to their functionality.
- Only one (1) motor and one (1) battery pack is allowed per car. The vehicle will be powered by two (2) AA battery only. NOTE: Batteries are NOT provided on race day.
- The remainder of the materials used for vehicle construction are up to the students.

Design/Construction:

- The vehicle must be of the students' own design and built during the current school year. No vehicle or major component thereof from a previous year shall be allowed to compete. Each team from a given school must have a unique car design. No "vehicle fleets" allowed.
- On race day, the vehicle must be attached to the 60# fishing line (guide line) that runs the length of the lane along the track. Vehicles must be designed with an attachment device so that the vehicle can be attached and detached from the line between races. The attachment device cannot be potentially damaging to the line (i.e. sharp edge). The guide line will be no higher than 1.5 cm above the track surface.

Vehicle Size:

- The vehicle, including any attachments, may not be larger than 12 in. wide by 24 in. long and 12 in tall.

Passenger (soda can):

- Each vehicle must carry a "passenger" [**one empty 12 oz. conventional aluminum soda can, with tab attached**. Juice or other types of cans are not permitted]
- The can must not be structurally altered in any way. Application of adhesives to keep the passenger in the vehicle is not allowed.
- The vehicle must be structurally sound and retain their shape without the soda can "passenger" on/in the vehicle. The passenger may not support the vehicle or function as any other component of the vehicle's structure. Removal of the passenger from the car should not alter any part of the structure of the vehicle. Vehicle should retain its original shape.
- The soda can "passenger" must remain with the vehicle at all times during the race, and must be easily removable/re-insertable.

The Race Track:

- The race lane is 24-36 in wide and runs 66 feet in length. The track is a hard flat surface and the track can be oriented in any direction (e.g., North-South, East-West)

Conduct of the Race:

- The races are run in a double elimination format. Teams will have a minimum of two opportunities to race before being eliminated from the competition.
- Only two members of the race team will be allowed at the track during the race: one at the start line and one at the finish line. A non-team member may act as the catcher if necessary. Adults will not be allowed at the start or finish lines, line judges can help any students needing assistance.
- No team shall consist of more than 4 students.
- The vehicle must be attached to the guide line at the start of each race.
- Vehicle and racer must be behind the start line and behind the vehicle.
- All 4 wheels must be on the ground at the start of the race.
- The vehicle must start behind the starting line with all wheels touching the track. [Drop starts will lead to a loss for the vehicle in question]
- Racers may not push vehicle at start. Pushing or touching the vehicle after the race has started will result in a loss for that race.
- When Race Announcer says "GO", student will depress the power lever.
- Once the race has been started racer may not touch your vehicle, guide line, or anything else associated with the vehicle until the race is finalized. Doing so will count as a loss in this race.
- There will be a maximum of 3-minutes for racers to prepare to race at the lane. This should be sufficient time to prepare and attach the vehicle to the guide line. The race will start at the end of this time regardless of whether a racer is prepared to compete.
- Once the race has begun, team members may only touch their vehicle if it has crossed the finish line, and may not retrieve their vehicle on the race lines until the judges have determined that the heat is finished.
- Any car that leaves its lane will receive a loss for the heat. If the car leaving its lane interferes with any other cars, those cars that have been disrupted will be allowed the opportunity to rerun their race.
- Loss of a passenger during the race will result in a loss for the heat. If the passenger is lost from this vehicle interferes with any other vehicle, those vehicles that have been disrupted will be allowed the opportunity to rerun their race.
- The winners of a heat are determined by the first 3 cars to cross the finish line OR the three cars that traveled the farthest down the track.

Judging/Awards:

- Medals will be given for 1st-3rd place for Speed on Race Day.
- Teachers may choose to additionally evaluate student vehicles for Craftsmanship, Engineering, Documentation Portfolio and Upcycled Materials. Upon request, goHunterdon will provide teachers with judging criteria/scoring sheets and award certificate templates that may be printed by the teacher.