

Car Design and Construction Rules

These are the official rules for Pack 1459. In order to make the races as fair and competitive as possible, these rules will be enforced. Take care that your car does not break any rules and get disqualified.

1. You must use the car parts supplied in the Official Pinewood Derby Car Kit. The use of pre-cut or manufactured speed products is prohibited. This rule applies to the wheels, axels (nails), and wood block supplied in the car kit.
 - a. If you need additional parts due to breakage during construction, additional Official Pinewood Derby car kits can be purchased at the Scout Shop.
2. The car must have been made within the past 12 months for this year's race. Cars that were entered in previous year races are not eligible.
3. The width of the car shall not exceed 2.75 inches.
4. The length of the car shall not exceed 7.0 inches.
5. The underside clearance of the car should be a minimum of 3/8 inches for track center guide clearance.
6. The front of the car must have a minimum 1/2 inch flat area on the centerline for the starting gate pin to contact. The starting system will not operate properly with rounded or pointed front ends.
7. The weight of the car shall not exceed 5.0 ounces (141.75g)
8. Wheel bearings, washers, and bushings are prohibited on the wheel assembly of the cars.
9. Axels may only be lubricated with powdered graphite or silicone.
 - a. No lubricating oil, grease, silicone spray, or other "wet" lubricant may be used, as the presence of these materials will foul the racetrack.
10. Wheels can be lightly sanded to remove surface imperfections, but the treads must be left flat. The following wheel modifications are prohibited:
 - a. Sanding, filing, or grooving the wheel tread to reduce the track contact surface area (i.e. rounding the wheel, creating a "knifelike edge", "V" or "H" profiles).
 - b. Removing excess plastic from the wheel hub, tread, or outer wall to reduce the weight of the wheel. Coning of the inside wheel hub edge is permitted.
11. The car shall not ride on any type of springs.
12. No power assist devices such as rubber bands or magnets.
13. No loose materials of any kind are allowed in or on the car.
14. Any decorative details (i.e. driver, roll bar, exhaust pipes, or any other decoration) must be within length, width, and weight specifications defined above and permanently secured to the car.
15. The car must be labeled on the bottom with the following information.
 - a. First and Last Name
 - b. Den Number
 - c. Rank

Please use a permanent marker and allow drying to prevent smearing of this information.

Registration – Friday 6-8pm

- The race track will be setup at registration for testing.
- Scouts may test run their cars prior to registration. Test run at your own risk – damage to cars are the scout's responsibility.
- Race officials will inspect, measure, and weight each car before accepting the car for registration. Cars that fail the preliminary inspection may be altered until the final inspection.
- When he is ready, the scout will submit his car for final inspection. Once it is passed, the car is officially registered and impounded on the starting grid. The scout may not have any further contact with the car once it is registered and impounded.

Special Request: At registration, we will have a dedicated area set-up for application of graphite on the cars. PLEASE DO NOT APPLY GRAPHITE OUTSIDE OF THE DEDICATED AREA.

Competition Classes and Awards

Scouts will compete for several different awards:

- Overall Pack speed awards – 1st, 2nd, and 3rd
- Speed awards by Den – 1st, 2nd, and 3rd
- Design Awards:
 - Scouts' Choice – Voted on by scouts
 - Most Scout Spirit
 - Best Design
 - Cubmaster's Choice
- All scouts will receive a Pinewood Derby participation award.
- Scouts will only be eligible to receive 1 award. For example:
 - Overall Pack speed award winners are not eligible for Den speed awards.
 - In the event a scout qualifies for both a speed award and a design award, he will be given a choice of which award he wants to receive.
- Time permitting, following the official races the track will be opened up to parents and siblings who want to race their own cars.

Racing Procedures

- All participants and spectators must remain behind the race barricades and away from the car pit area and race track at all times.
- Only race officials are allowed to handle the cars during the race.
- The cars will be held in place by the starting gate, which will be released to allow the cars to run down the ramp to the finish line. The track is made of aluminum with 4 lanes and car center guides on an inclined ramp of wooden frame construction.
- Each car will race in a total of four heats, and each heat will be in a different lane so that all cars will run in each lane once during the racing.

- The race officials will use care to place all cars on the racetrack starting line in a consistent manner. Participants and spectators are not allowed to assist with the placement of cars on the starting line.
- The race computer and electronic start gate and optical finish line sensor will record each cars time for each heat.
- The average run time for each car will be used for the speed awards.
- The car pit area and race track is closed during the race to all participants and spectators. Only race officials are allowed to be in the car pit area and handle cars during the race.
- No work or repairs will be made to any car that loses any parts during the race regardless of circumstances.
- If a car interferes with the running of another car, the race officials may choose to run the heat over. If the car interferes again with another car, it will be disqualified.
- The race officials will attempt to run every car for all four heats regardless of the car's condition.
- If a failure of the track equipment or error in car lane placement is noted by race officials, they may elect to re-run the heat.
- Decisions made by the race officials will be final.

Construction Tips

- Plan a schedule for the construction of the car to allow time for a scout to do his best and prevent a last-minute rushed project.
- Carefully review the rules above and the information in the Pinewood Derby kit.
- It's best to paint body parts before assembling them to avoid getting paint on the axles.
- Remove burrs on the nail axles and hubs using sandpaper or emery paper prior to adding wheels.
- Add weights to your car to get as close to 5oz as possible. More weight = Faster car
- Check the alignment of your car's wheel on a smooth floor or table. The straighter your car goes, the less it will rub against the center guide which slows it down.
- Once the alignment is set, glue to axles in place so they don't come out during the races.

A note to Parents and Friends

- Building the car should be a joint project with your scout. Allow him to do as much of the work as is safe. Teach him to use tools safely and to know that good results can take time to complete.
- Help your scout develop a good project plan that will help him plan ahead and not do a rush job at the last minute.
- Encourage your scout to think up his own design ideas; fun and creativity are a lot more important than advanced engineering.
- Help your scout to understand that "doing your best" is as important as having the fastest car.