

Pinewood Derby Rules Pack 794

Change log:

2015 - modified formatting, added various details.

2016 - all 4 wheels are now required to make contact with the track. This allows for the cars to be legal at district and council races.

Welcome to the Cub Scout Pinewood Derby... a long standing tradition of scouting. We want your scout and your family to have a fun and exciting experience building and racing their car. **PLEASE READ AND RE-READ THIS RULES AS YOU BUILD YOUR CAR** so as not to disappoint the Scout due to his parents failure to read these Rules, a car that is disqualified will still get to race, but will not be qualify for awards.

The scout should do his best and have fun first and foremost...if he can build a wining car too as all the better.

The purpose of the Pinewood Derby is for your scout to learn skills building his car, families to spend time together, and experience the racing. Please have your scout do as much of the work on his car as he can safely do with his skills. Let him make reasonable mistakes so he can learn from them.

BEHAVIOR: GOOD SPORTSMANSHIP AND BEHAVIOR IS EXPECTED (by both Scouts and adults). Race Officials may ask anyone not following this rule to leave.

QUESTIONS may be addressed to the Pack leaders. Should there be a concern, the Pack leaders will try to accommodate while ensuring a fun, positive, and fair race.

INSPECTION:

Each car must pass inspection by the Official Inspection Committee before it may compete. The Inspectors will disqualify any car not meeting these rules. After acceptance only race officials will handle the cars. Cars may be reclassified or disqualified if they are determined by the race officials to not meet these requirements.

REPAIRS:

Any car losing wheels or any part that prevents it from running cannot be repaired after the inspection and weigh-in.

exception: Race officials may authorize repairs, usually when damage is caused by collision with another vehicle or object. The Cub Scout is in charge of all car repairs. Guidance is allowed and encouraged. Ideally repairs can be done before the next heat that the car is in starts. After the car is repaired Officials will run the race again.

RULES:

- Build your own car **using the materials in the kit only (wheels, axels, wood block)**. If any parts are broken, missing, or need replacement, please contact your den leader.
- All cars must be built for the current Pinewood Derby Racing Season. **NO REPEATS or REPAINTS**.
- Cars may not be sent to third party facilities for tuning or other performance enhancements.
- Do not use wheels or axles from Michaels or other arts and crafts stores. These could give an unfair advantage and the car will not pass inspection (i.e. **not eligible for awards**).
- The main body structure must be made of wood. Cars that were purchased completed may not be used. If the builder lacks the resources to cut out a car from a stock block of wood, attendance at a workshop (den/pack/district/council) is strongly encouraged.

- The car design may be decorated by the addition of other stable materials such as plastic or metal. **Any additions must be firmly attached and meet Car Size Requirements.**

PROHIBITED Items:

- A. Springs
- B. Starting devices or propellants
- C. Electronic or lighting devices that interfere with the race electronics.
- D. Liquids, wet paint, oil, sticky substance, or powders of any kind (other than axle lubrication)
- E. Glass or excessively fragile parts
- F. Bearings, bushings, washers, sleeves, hubcaps or inserts attached to or in contact with the axle, body or wheels.
- G. Loose objects on car
- H. Magnets

Car Specs:

- A. Width-Not to exceed 2 3/4 inches
- B. Length-Not to exceed 7 inches
- C. Weight-Not to exceed 5.0 ounces on scale precise to 1/10 ounce.
- D. Height-Not to exceed 3 inches
- E. Clearances:
 - Center Rail Width: Must clear center guide rails, typically no less than 1-3/4 inches minimum.
 - Bottom: No less than 3/8 inch from track surface between center rails.
 - Other: Fender flairs with less clearance are acceptable as long as the center rail width clearance is maintained. Weights are preferred to be inset in the body or on top of the car to aid in a safe stop at the end of the track. No part of the car or attachment to any car, which is metal, pointed, sharp, and/or jagged, may be capable of contacting any part of the track.

F. Wheelbase

- All cars must have a wheel base no less than 4", with the two rear wheels being positioned directly across the body from one another
- The two front wheels being positioned directly across the body from one another.

G. Front End

- Height: The front of the car will rest against a short starting pin. Therefore the front bottom of the car which rests on the pin is no higher than 1" above the track.
- Width: The front end must be at least 1/2 inches wide in the middle.
- No part of the car body, wheels or attachments may protrude in front of the starting peg.
- The front of the car must rest against the starting pin. A "needle nose" that does not work in the starting gate will be disqualified.

WHEELS:

The following wheel modifications are PROHIBITED:

- A. Rounding of tread surface/wheel edges
- B. Grooving, H-cutting or V-cutting
- C. Altering of wheel profile
- D. Narrowing the tread surface, other than truing inside tread edge
- E. Drilling sidewalls

- F. Hollowing, sanding, or otherwise removing or modifying material from inside the wheel
- G. Filling of any wheel surface with any type of material

- **Use only the wheels and axles that come in the kit.** If you show up with some others, the car will be **not be eligible for awards.**
- All lettering/numbering, both inside and outside, must remain complete and be visible. The fluting and other BSA markings on the outside wheel area must remain visible.
- Outer wheel surface may be sanded, shaved, or polished to remove surface imperfections, mold casting burrs, and correct off center wheel bores. **Outer wheel surface must not be reshaped in any way in an attempt to minimize tread contact or alter aerodynamics.** Tread surface must be flat and parallel to the wheel bore. Coning the hubs and truing the inside tread edge is allowed.
- Tread width may not be less than 7.5 mm. You may add material such as glue, fingernail polish, or tape, to the inside of the wheel to aid in balancing of the wheel, but **no material may be removed from the inside surfaces.**
- Minimum diameter of wheel is 1.16" to maintain the ridges on the outer edge.
- Wheel Bore treatment is allowed including polishing and/or tapping. **Wheel bores may not be filled and re-drilled to alter bore diameter or to achieve better fit with the axle.**
- There must be at four wheels on the car. It is required that all four wheels make contact with the track surface.
- Each wheel must be mounted on an axle, on the outside of the car, in the vertical position.
- Each wheel must be attached directly to the wood car body by an axle and spin freely. No part of the wheel may overlap the center guide rail by more than 1/8 inch.
- The two rear wheels and the two front wheels must be positioned directly across the body from each another. Staggered wheelbases are not allowed.
- Please note: There are after-market, modified wheels that are LIGHTENED. This is usually done by turning the wheels on a lathe and removing material from the inside of the wheel. These wheels are NOT allowed and EASILY RECOGNIZED at inspection. Cars with these wheels will not be permitted to race. No part of the car or any attachment to the car may be capable of coming into contact with the track other than the wheels.

AXLES:

- BSA Nail type axles are required with an overall diameter of no less than .084 inches for each wheel. Some polishing and/or modification is allowed as long as overall diameter is not reduced below .084 requirement.
- Grooves are allowed; the depth of the groove(s) is not limited so long as the journal portion of the axle (the part the wheel rides on) is no less than the stated minimum diameter.
- Axles must not be connected to any device that mechanically alters rotation or spin.
- Axles must be mounted into the wood sections of car. Drilled holes or slots can be used.
- Approved lubricants include (but are not limited to) graphite, Teflon, Nyoil, and Krytox. Over-application of lubricant which results in excessive shedding onto the track is not allowed.