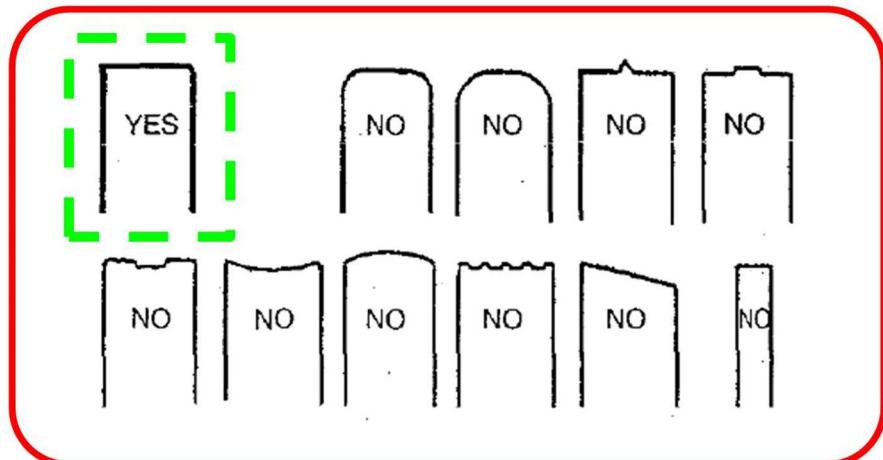


WHEEL PROFILE EXAMPLES

What is and is not acceptable when preparing your Pinewood Derby Car wheels for the race? The graphic shown below demonstrates the correct shape for your wheels to use when coming in contact with the track – **flat and squared off at the edges**.



Lowaneu District
Pinewood Derby
Rules

2019

revision

1 General

1.1 The race is open to all Cub Scouts who are registered member of a Pack in the Lowaneu District as of January 1st of the

race year. This would also include any Boy Scouts who have crossed over to a Troop between Jan 1st and race day.

- 1.2 The car must be built for the current Pinewood Derby Racing Season. NO REPEATS OR REPAINTS.
- 1.3 A completed car purchased from a third party is not allowed.
- 1.4 The car may not be sent to third party facilities for tuning or performance enhancements.
NOTE: If you lack the tools or resources to build your own car, you are encouraged to attend a workshop hosted by your den, pack or council.

2 Body

- 2.1 The main body of the car must be crafted from the block provided in the Official Pinewood Derby kit. The car design may be enhanced by the addition of other stable material such as plastic or metal. Any additions must be firmly attached to the car and meet car size specifications.
- 2.2 The Car must meet the following specifications
 - 2.2.1 Width not to exceed 2 3/4 inches.
 - 2.2.2 Length not to exceed 7 inches and not to be less than 4 inches.
 - 2.2.3 Weight not to exceed 5.0 ounces as weighed by the official scale.

- 2.2.4 Height not to exceed 3 inches.
- 2.2.5 Clearance not to be less than 3/8 inch. The wheels are the only part of the car allowed to touch the track.
- 2.2.6 Wheelbase must use the slots that are provided with the official block.
- 2.2.7 Front edge of car must be no more than 1 inch above the wheel lane of the track and be at least 1/2 inch wide at the center.
- 2.2.8 When placed in the starting position, no part of the car may extend beyond the starting pin.
- 2.2.9 At least 4 wheels must be attached to the side of the car body. Each wheel must be attached to the car with a legal axle.
- 2.2.10 Each wheel must not be more than 15 degrees from vertical.
- 2.2.11 The front most and rear most wheels must be positioned across from one another.
- 2.2.12 The complete inside and outside lettering of each wheel must be visible when the wheel is attached to the body.

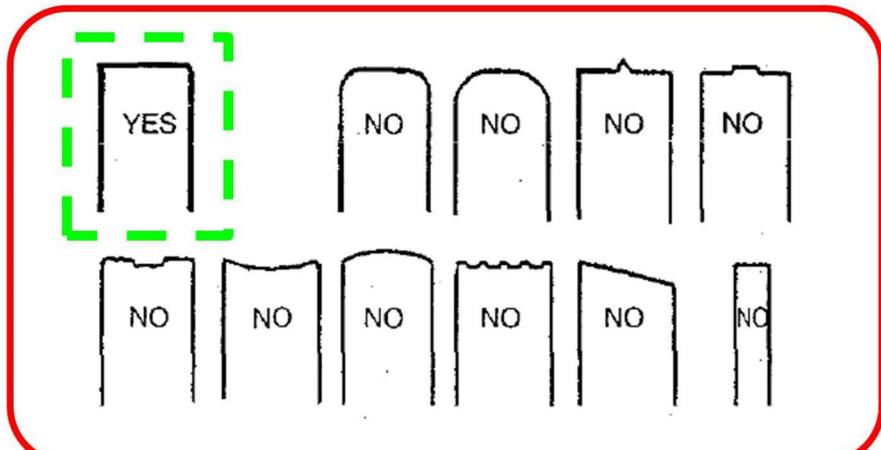
2.3 The following items are prohibited:

- 2.3.1 Springs.
- 2.3.2 Starting devices and propellant.
- 2.3.3 Electronic or lighting devices that interfere with the race electronics.
- 2.3.4 Liquids, wet paint, oil, sticky substances, or powders of any kind other than approved axle lubrication.
- 2.3.5 Glass or excessively fragile parts.
- 2.3.6 Bushing, bearings, or washers (except for the sole purpose to add weight).
- 2.3.7 Hubcaps or stickers over the wheels.
- 2.3.8 Loose objects on the car.

- 3.1 Only official BSA wheels are allowed.
- 3.2 All lettering and numbering, both inside and outside of the wheel, must remain complete and be visible with the wheel on the car.
- 3.3 The fluting, spokes and other markings on the outside wheel area must remain visible. "Fluting" refers to the small bumps on the outside edge of the tread.
- 3.4 The wheel diameter must be no less than 1.16 inches.
- 3.5 The tread surface width must be no less than 7.5 mm.
- 3.6 The tread surface must be flat and parallel to the wheel bore. Therefore, the following modifications are prohibited:
 - 3.5.1 Rounding of the tread surface
 - 3.5.2 Grooving, H cutting, or V cutting the tread surface

WHEEL PROFILE EXAMPLES

What is and is not acceptable when preparing your Pinewood Derby Car wheels for the race? The graphic shown below demonstrates the correct shape for your wheels to use when coming in contact with the track – **flat and squared off at the edges**.



- 3.6 The following wheel modifications are PROHIBITED:
 - 3.6.1 Removing material from the inside tread surface or the inside sidewall surface
 - 3.6.2 Drilling holes in the sidewalls or tread area
 - 3.6.3 Filling wheel surface with any type of material

3.6.4 Filling the wheel bores and re-drilling the bore

3.7 The rules permit many wheel modifications so long as you observe the dimension limits and restrictions listed above. Common legal modifications include but are not limited to the following:

- 3.7.1 Truing the tread surface with sandpaper or lathe to correct out of round wheels.
- 3.7.2 Truing and shaping the inner edge of the tread surface
- 3.7.3 Narrowing the tread surface to 7.5mm to get straight edges
- 3.7.4 Applying wheel bore treatments such as polish and wax to smooth the bore.
- 3.7.5 Tapping the wheel bore
- 3.7.6 Truing and re-coning the tip of the inner hub
- 3.7.7 Removing the double step from the outer hub
- 3.7.8 Balancing the wheel by adding material such as glue or fingernail polish to the inside of the wheel.

4 Axles

- 4.1 Metal Axles with a nail head are required with an overall diameter of no less than .084 inches. An axle may not extend more than .75 inches($\frac{3}{4}$) into the car body.
- 4.2 Official BSA axles must be used.
- 4.3 One-piece axles that extend through the width of the car to support both wheels are not allowed.
- 4.4 Axles may be polished to remove burs.
- 4.5 You are not allowed to groove the axles

USE THE NAILS IN YOUR KIT



5 Lubrication

- 5.1 Over application of lubricant, which results in excessive shedding onto the track is not allowed.
- 5.2 Oils based lubricants are not allowed.

6 Weights

- 6.1 Lead (Pb) weight, if used, must be completely sealed and safe from all possible contact with youth.
 - 6.1.1 Please avoid Lead (Pb) in cars this year!

Note the 2008 Consumer Product Safety Improvement Act restricts the amount of lead that may be contained in children's toys (ages 12 and under). For a 5-ounce toy, the lead limit would be 3/1000 of an ounce! Therefore, we strongly encourage you to use other material for weight.

Common alternatives include zinc, tungsten, and Tundra. For more information see <http://www.cpsc.gov/CPSCPUB/PREREL/prhtml09/09120.html>

6.2 Drilling/Removal of lead weight is not allowed at the race or check-in venue.

7 **RACE DAY**

7.1 Each car must pass inspection by the Official Inspection Committee before it may compete. The inspectors will disqualify any car not meeting these rules. Any adult or scout may appeal the findings of the Inspectors to the Race Committee Chairperson, whose decision is final.

7.2 After a car has passed inspection, only race officials may handle the car.

7.3 After check-in, car repairs are not allowed unless authorized by the race officials.

7.4 Good sportsmanship and behavior is expected. Race officials may ask anyone not following this rule to leave.