

***GSLAC***  
***Pinewood Derby***  
***2024 Race Rules***



**2024**  
**Greater St. Louis**  
**Area Council**  
**Pinewood Derby**  
**“Rules Of The Road”**

*"The purpose of the Pinewood Derby is to help the Cub Scout build a team relationship with their parent or helper, experience the sense of accomplishment and the excitement of competition, learn Win/Lose good sportsmanship, and to have fun."*

Source: [usscouts.org](http://usscouts.org)

## **A Scout is Trustworthy...**

It is expected that:

- all car construction and modification will be done by the Scout with assistance and guidance as needed from his/her adult partner.
- No prebuilt/kit “eBay” speed cars or “dad built” cars will be used. Professionally modified, “hobby shop”, or pre-modified purchased parts including, but not limited to, speed wheels, axles and bodies, are prohibited.
- Cars will be tuned or aligned only by the Scout, and adult partner. Cars may not be sent to third party facilities for tuning or other performance enhancements.

### **1. General Rules**

**1.0** Eligibility: All registered Cub Scouts in the GSLAC , **from Tiger Cub to 2<sup>nd</sup> Year Webelos**; including those 2<sup>nd</sup> year Webelos that have qualified at the Pack level but have crossed over to a Boy Scout Troop prior to the Race day are eligible to race.

1.01 All cars entered must be newly built, using all new parts after September 1 of the current school/Scout year from the stock materials provided in the Official Pinewood Derby Racing Car Kit (part# 17006) or Official colored wheels, see section 3.0.

**NOTE: Reusing car bodies, axles or wheels from previous years is a violation. Cars should be newly built from scratch each Scout year.**

1.02 With the exception of decorative and construction items (weights, glue, lubricants, etc.) only materials from the official kit official replacement wheels may be used.

## 2. The Body

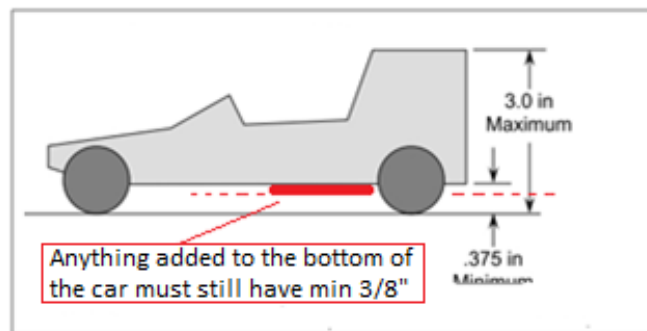
2.00 The maximum length of the car shall not exceed 7 inches. *Hint: check body length before doing any work. Stock blocks may not meet requirement right out of the box. If block is exactly 7", consider sanding a 1/16" off before beginning work. Once the car is complete, it is very difficult to make it smaller. Several coats of paint may be enough to make the final car too long.*

2.01 The maximum width (including wheels and axles) shall not exceed 2-3/4 inches.

2.02 The maximum height shall not exceed 3 inches.

2.03 The minimum clearance between the bottom of the car or anything extending from the bottom of the car and the bottom of the wheels when placed on a flat surface shall be **NO LESS** than 3/8 inch. The bottom of the car will be measured from the lowest point to the track surface. **NO** items should be attached to the bottom of the car like weights, axles guards, decorations, etc. that may reduce the clearance to less than the required 3/8". **NOTE:** The entire bottom surface of the car must have 3/8 inch clearance. Although cars with less clearance may technically fit on our tracks, this does not change the rule. Simply attaching weights to the bottom of the car without recessing them into the body may not pass inspection. Fixing this issue at check-in is an extremely difficult modification. Please check and double check clearance.

**NOTE: IF YOU SIMPLY ATTACH WEIGHTS TO THE BOTTOM OF THE CAR, THE CAR MAY NOT PASS INSPECTION!!**



*Image 1*

2.04 The minimum width between the inside surfaces of the wheels shall be 1-3/4 inches so that the car will clear the center guide strip.

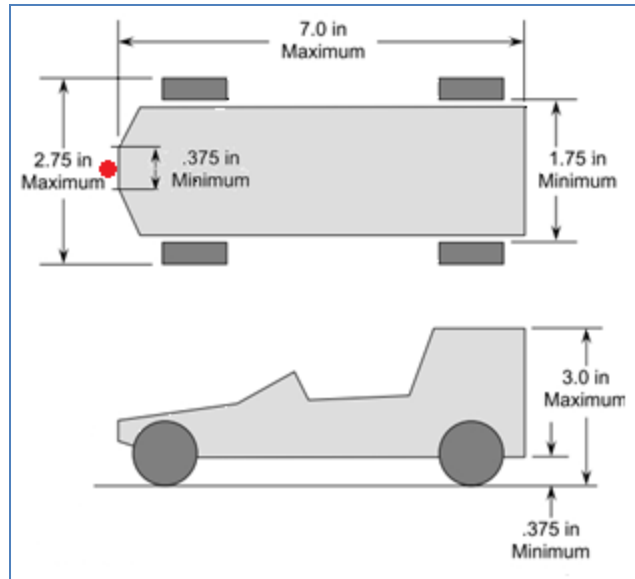


Image 2

2.05 The body of the car, the wheels or any attachment must not extend beyond the back edge of the starting pin.

2.06 The front of the car that rests on the starting pin must not be narrower than **3/8 inch** in width.. The front surface should be designed so that it is not pointed or rounded.

2.07 The maximum weight of the car shall not exceed 141.7 grams (this is the same as 5 ounces, however, weighing of the cars will be done using precise scales and will be measured in tenths of a gram). Since all scales used during construction may not be identical, please come to the race prepared to slightly adjust the weight of the car by adding or subtracting weight. Cars must meet weight requirement using the official scales at race check-in.

2.08 Items such as steering wheels, model drivers, spoilers, decals, painting and other details are permissible as long as these details do not exceed the maximum length, width, height and weight specifications. Loose materials of any kind are not permitted on the car.

2.09 Attachments must not have the effect of a starting or accelerating device. This includes magnets imbedded in the front of the car.

*Note: Only measurement devices provided by the Council Race committee will be used for check-in. Any personal scales or other measuring devices brought by racers may be used while tuning the car in the pits, but will not be considered Official. Therefore, these devices will not be used to verify if a car meets the requirements. If the car is built to the EXACT min and max measurements, be prepared to make small adjustments.*

### 3. The Wheels

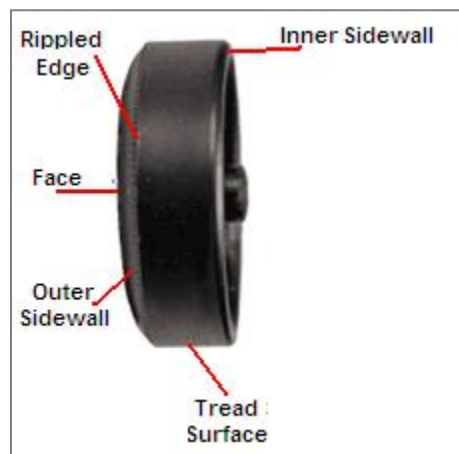
3.00 Cars must run the Official BSA wheels These are the wheels that are provided in the Official Pinewood Derby Racing Car Kit (ScoutStuff item#: 17006) or the Official Wheel/Axle Kit. (ScoutStuff SKU#: 17553(black), 647054(green), 647055(pink), 647056(purple), 647826(blue), 660377(orange), 647053(white). Please ensure that you are using the proper wheels.

Painting of wheels is allowed, as long as all identifying markings and other characteristics as mentioned below are visible.

**NOTE:** Revell or any other brand replacement wheel, even if it claims to be “Official BSA Wheels” **will NOT be allowed**. Only wheels that originally came in the kit, or the exact replacements as noted above, will be allowed to race.

3.01 The wheel tread may be trued, but the diameter of the wheel cannot be significantly reduced. The rippled edge (ridges) must remain intact around the entire wheel. This is a judgment call by the committee, so please do not reduce the rippled edge significantly (See image 3). We must be able to feel the rippled edge all the way around the wheel circumference. Reduction of the wheel diameter may also reduce the inner sidewall of the wheel (See image 3). Per rule 3.03, reduction of the inner sidewall in any way, thus narrowing the overall wheel width, will be a disqualification.

**NOTE: IT IS HIGHLY SUGGESTED THAT NO WORK BE DONE TO THE WHEEL TREAD AREA.**



*Image 3*

3.02 Wheel treads or outer/inner sidewall may NOT be rounded, beveled, tapered, grooved, or shaped in any way. (See Image 4)

Below are a few examples of tread profiles that are **NOT** allowed, although **ANY** shaped or reduced wheel tread will not pass inspection.

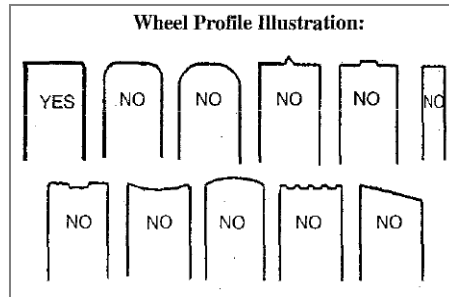


Image 4

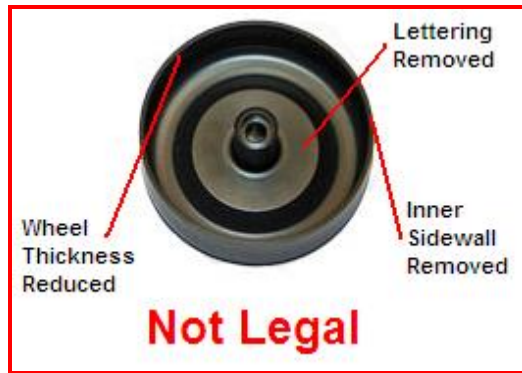
3.03 Removal of any material from the wheel that effectively reduces the original overall width of the wheel is prohibited. (See Image 5) This includes: removal of any material from the wheel inner or outer sidewalls or face. (See Image 3) The inner sidewall is the rounded inside edge of the wheel. (See image 6) In addition, the face of the wheel that contains the BSA lettering must remain intact. All Wheels must have the complete "BSA PINEWOOD DERBY" text on the face AND the "MADE IN USA OFFICIAL BSA" text inside of the wheel completely intact and visible. (See images 6 and 8). Modifications to the Inner Hub Area (see image 8) are NOT allowed.



Image 5

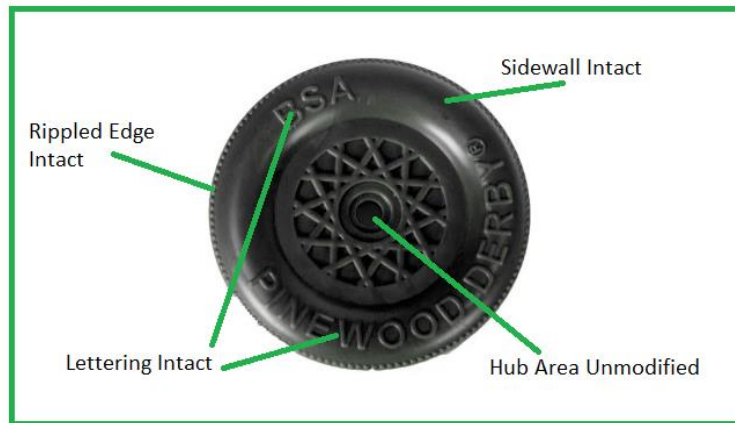


Image 6



*Image 7*

The picture of the wheel below is what the officials will expect to see when viewing the wheel from the side. Anything else will result in disqualification.



*Image 8*

3.04 Additional items such as wheels bearings, washers, bushings, Wheel and Hub covers are prohibited.

3.05 The car shall not ride on any type of springs and the car must be free wheeling with no starting device or other propulsion.

3.06 Each car must include 4 “approved” wheels (wheels that meet the above criteria) and placed in the “normal” wheel position for a car. “Normal” position is 2 mounted on each side of the car and parallel to each other. Wheels may be staggered on each side of the car (See image 9). At least three (3) wheels must remain in contact with the track at all times. Although the 4th wheel does not need to contact the track, it must act as a guide to keep the car on the track against the center rail. Use of any other type of guide pin, fin or any other device is prohibited. No 3-wheeled cars.

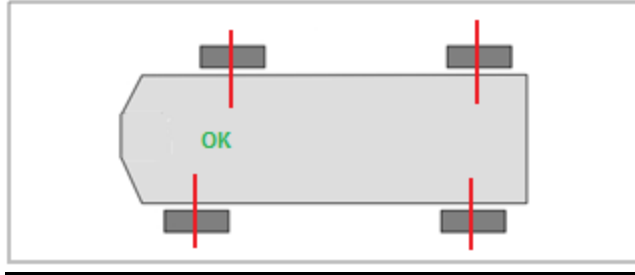


Image 9

*Note: Due to variations in the injection molds used by the BSA to form the wheels, exact minimum measurements cannot be provided. However, since only the tread surface can be trued, and no other modifications be made to any other surface of the wheel, the committee will not determine eligibility based on a measurement of a minimum wheel width, but rather a visual determination of **IF** it was modified. If it appears that it was modified beyond truing of the wheel tread, the wheel will not be allowed.*

## 4. The Axles

4.00 Axles are **NOT** required to be inserted into the car body parallel to the track surface.

4.01 Axles must be those supplied by BSA in the original car kit or stock BSA wheel/axle kit. Aftermarket or non-stock axles are prohibited.

4.02 Axles may be polished, but must not be polished/modified to the point that breakage could occur during the race.

4.03 Axle head diameter may not be reduced or shaped in any way.

4.04 Use of axle tubes, one piece axles, springs or bearings is prohibited.

## 5. Lubricants

5.00 Any type of lubricant may be used.. However, any lubricant that is used must not be loose, falling or dripping off the wheels, axles or car in any way. If any lubricant is found to be dripping or falling off a car, wheels or axles, the Scout and adult partner will be asked to take the car outside the race venue and rectify the issue. During the inspection process, officials may rotate or spin wheels to confirm nothing will come off. Even after inspection, if during the race, a car is found to be depositing excessive visible lubricant (as determined by the track crew) onto the track surface, that car may be disqualified.

### **IMPORTANT:**

**DO NOT BRING ANY LUBRICANT OF ANY KIND INTO THE RACE FACILITY.**

**ALL LUBRICATION SHOULD BE APPLIED OUTSIDE THE RACE FACILITY OR AT HOME.**

**NO LUBRICANTS WILL BE ALLOWED INTO THE BUILDING.**



Graphite or oil will stain the floors and carpets if spilled or dropped. Clean-up or replacement of damaged property and any expenses associated with any lubricant spills will be the sole responsibility of the scout and adult partner of that scout.

**DO NOT BRING ANY LUBRICANTS INTO THE RACING FACILITY.** Leave it in your car or at home.

## **6. Examples of modifications that are allowed**

6.00 Modifying, (either lengthening or shortening) the wheelbase of the car by drilling axle holes or cutting new axle slots.

6.01 Adding decorative items that don't violate any of the stated rules.

6.02 Truing the tread of the wheels round by light sanding or lathing. Be careful not to reduce the wheel diameter or width or round the tread face. The tread must remain flat. See Section 3 above.

6.03 Removing the pinch marks and mold ridges on the axles

6.04 Polishing the axles and axle heads. (Not removing material)

6.05 Polishing the inner wheel hub that contacts the axle. (Not removing material)

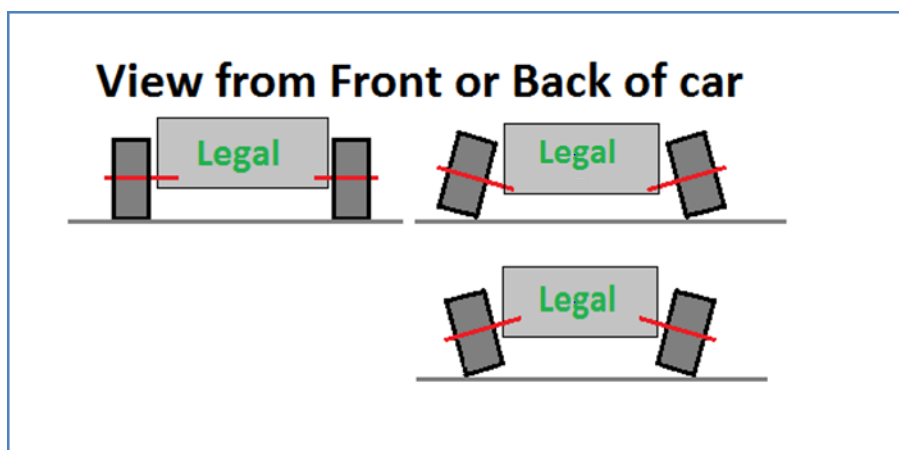
6.06 Modifying the surface of the axle with grooves or similar to reduce surface area contact between the wheel and axle.

6.07 Polishing wheel hubs where they make contact with the car body. (Not removing material)

6.08 Raising 1 wheel from the track surface. 3 wheels must be contact the track surface at all times.

6.09 Adjusting the alignment of the wheels and axles

6.10 Axles inserted at a positive or negative angle, thus tilting the wheel so that it rides on the inner or outer edge is allowed. The entire wheel tread surface is not required to sit flat against the track surface when the car is placed on the track. See image 10 below.



*Image 10*

## **7 Rules Violations**

7.00 The GSLAC Pinewood Derby Committee has created these rules to insure a level playing field for all Scouts participating in the event. In our view, any modifications stated above as “allowed”, can be performed without “specialized” tools or skills by the average Scout and adult partner. It is our goal to provide an experience where all Scouts can enjoy themselves, while also allowing them to be competitive in the racing event.

7.01 If a car is found to not meet all eligibility criteria, the adult partner will be informed, and the Scout will be allowed time to rectify the issue. Cars that cannot be modified to meet all criteria will be disqualified. In most cases, if a car is disqualified and the Scout chooses to race, they may do so during the “elimination” phase of the race only. Disqualified cars will be discretely identified and will not be obvious to the other racers. An official time will not be kept and the car will not be able to advance to the “Grand Finals” phase of the races

**7.02 A Scout/Scout Parent is Trustworthy** – It is expected that no car will be built in a manner that knowingly violates any of the posted rules. Intentionally using products or techniques that are prohibited, does not display expected “Scout” behavior. Please ensure that all cars brought to the race adhere to the rules provided. We use this event to teach our boys and girls about responsibility, honor and sportsmanship. **Beware of building tips and tricks from outside sources.** Although usually given with the best intentions, many of these speed “tricks” are not legal for our race. If in doubt, please check with the committee before implementing them.

## **8 Additional Comments**

8.00 These rules have been written to provide guidance to Scouts as they build their Pinewood Derby car. Although many situations are covered, it is impossible to account for each and every modification that potentially can be made. It is expected that the “intent” of the stated rules will be used as a guideline. Specific questions regarding the rules should be sent the the Committee no less than 2 weeks prior to the race for clarification. No “loopholes” in the rules will be considered on race day. If in doubt, ask.

8.01 During any race, if a car leaves its lane and interferes with another car or suffers any mechanical problems, the racer will be given no more than 5 minutes to repair the car, no times will be recorded and the race will be re-run. If the same car causes interference or breaks down again, the race will be re-run but without the offending car. During the 5 minute repair time, no other changes(including adding lubricant) may be made to the car other than correcting the mechanical problem.

8.02 Any dispute of these rules with regard to a specific car's eligibility to race in the Race will be decided upon by no less than three members of the Pinewood Derby Committee. The Committee's decision will be final.

8.03 While our parent volunteers strive to Do Their Best, it is possible that something could occur during a race that affects the outcome. Although very rare, if a racer or adult partner sees something that affects the race results, the track committee must be notified immediately, and prior to the beginning of the next heat on the track. (For example, if a car jumps the track) Once the next heat has begun, no adjustments can be made to the race results.

8.04 It is expected that all Scouts, adult partners and parents will act in a “Scout-like” manner during this event. Anyone acting inappropriately or arguing a committee decision will be disqualified and asked to leave the event.