

# ***New Horizons District Pinewood Derby***

## ***2020 Race Rules***

***FEB 29 - 2020***

***Southwest Middle School  
701 Wren Ave - Ballwin, MO 63021***



**2020**  
**Rules Update Summary**  
**Race Rules**

Updates from 2019

NO CHANGES

Updates from 2018

- Section 1.0 - Modified / Clarification – Lion Scouts

PLEASE READ/REREAD ALL THE RULES THOROUGHLY EVEN IF YOUR SCOUT HAS RACED PREVIOUS YEARS. WE ASK FOR THE PARENTS HELP IN MAKING SURE THAT A SCOUT UNDERSTANDS THE RULES AS WRITTEN, SO THAT ALL CARS ENTERED INTO THE DISTRICT RACE ADHERE TO THE POSTED RULES. IF THERE ARE ANY QUESTIONS, PLEASE CONTACT A MEMBER OF THE DISTRICT RACE COMMITTEE FOR CLARIFICATION.



# **2020** **New Horizons District** **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**

## **Speed Competition**

### **1. General Rules**

**1.0** Eligibility: All registered Cub Scouts in the New Horizons District, **from Tiger Cub to 2nd Year Webelos**; including those 2nd year Webelos that have qualified at the Pack level but have crossed over to a Boy Scout Troop prior to the District Race day are eligible to race. – Lion Scouts are welcome to race in the qualifier races along with the other racked Scouts, they will not be eligible to race in the Finals or Win the District Race. There will be a separate final race for the Top 6 Lion Racers with the Top 3 receiving an award.

**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).

**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 may be used.

**1.03** Adult partner supervision, guidance and assistance is encouraged and allowed, however, ***Scouts should substantially, within their own abilities, build the majority of their own car.*** No prebuilt/kit “eBay” speed cars or “dad built” cars allowed. Professionally modified, “hobby shop”, or pre-modified purchased parts including, but not limited to, speed wheels, axles and bodies, even if they claim to be, or are labeled “Official BSA” are prohibited. **It is expected that all car construction and modification will be done by the Scout with assistance as needed from his adult partner, starting with the stock BSA kit.**

**1.04** Cars must be tuned or aligned by the racer, and adult partner. Cars may not be sent to third party facilities for tuning or other performance enhancements.

## 2. The Body

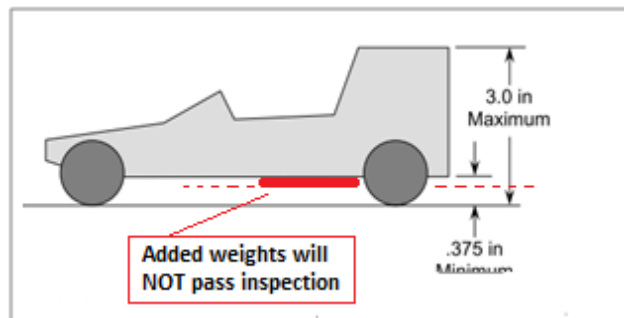
2.00 The maximum length of the car shall not exceed 7 inches. *Hint: check body length before doing any work. **Stock blocks may not meet requirement right out of the box.** If block is exactly 7", consider sanding a 1/16" off before beginning work. Once the car is complete, it is very difficult to make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

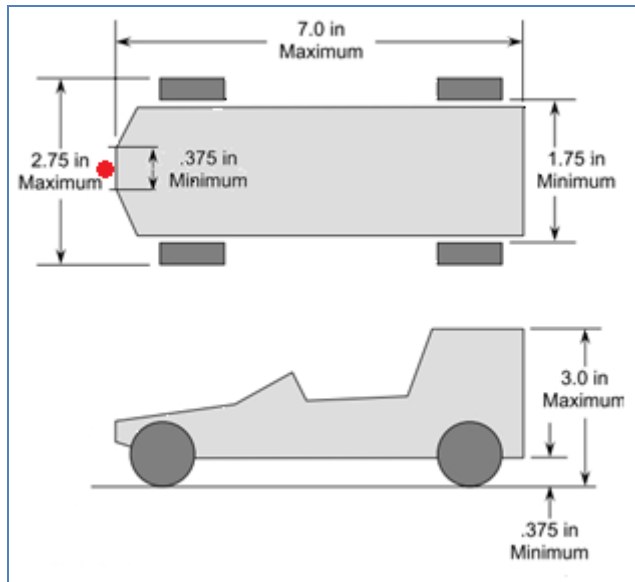
2.02 The maximum height shall not exceed 3 inches.

2.03 The minimum clearance between the bottom of the car 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 of the car body to the track surface. **NO** items may be attached to the bottom of the car like weights, axles guards, decorations, etc. NOTE: The entire bottom surface of the car must have 3/8 inch clearance. Although cars with less clearance may technically fit on our track, this does not change the rule. Simply attaching weights to the bottom of the car without recessing them into the body will not pass inspection. Fixing this issue at check-in is an extremely difficult modification. Please check and double check clearance.

**NOTE: DO NOT SIMPLY ATTACH WEIGHTS TO THE BOTTOM OF THE CAR, THE CAR WILL NOT PASS INSPECTION!!**



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 1**

2.05 The body of the car, the wheels or any attachment must not extend beyond 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 or a cutout notch in which the starting pin will sit within. 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 District 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 2009 Official BSA wheel design or newer. These are the wheels that are provided in the Official Pinewood Derby Racing Car Kit (ScoutStuff item#: 17006) and the Official Wheel/Axle Kit. (ScoutStuff item#: 175WHEELS, black or colored). Please insure that you have a current kit.

**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.



Image 2

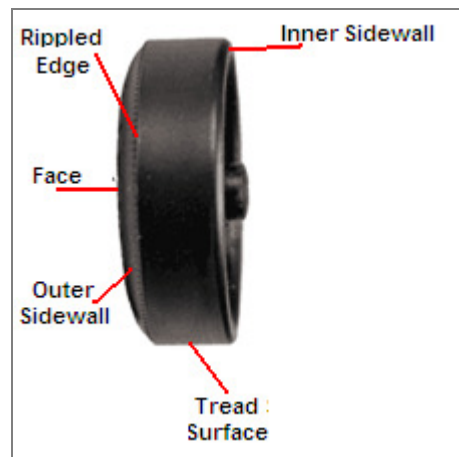


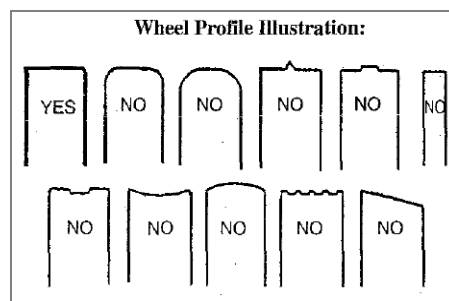
Image 3

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. *Hint: To avoid any issues, it is suggested that minimal work, if any, be done to the wheel tread area.*

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

**NOTE – The entire wheel tread surface is not required to sit flat against the track surface when the car is placed on the track.**

Below are a few examples of tread profiles that will be disqualified, although any shaped wheel tread that does not sit flat against the track surface or has been reduced will not be allowed:

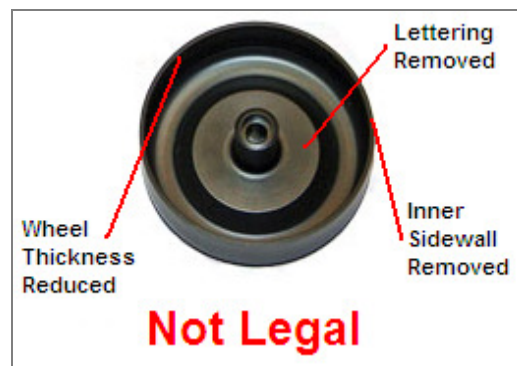
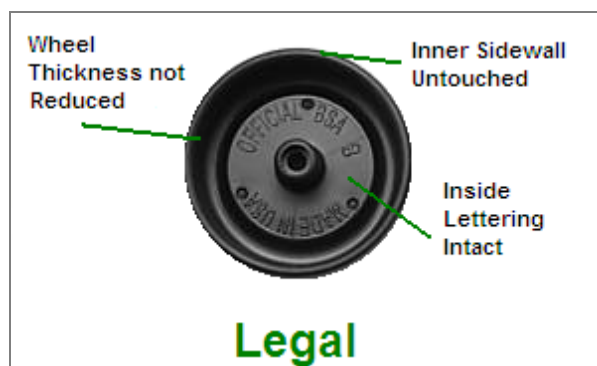


**Image 4**

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 2). Modifications to the Inner Hub Area (see image 8) are also not allowed.

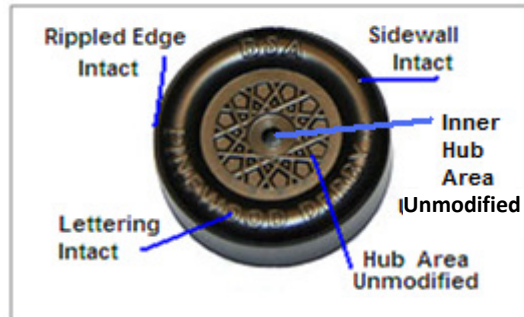


**Image 5**



**Image 6**

The picture of the wheel below is what the judges will expect to see when viewing the wheel from the side. Anything else will result in disqualification. (The image below is for example only. It is intended to be used to just clarify the parts of the wheels that will be inspected. Actual text on sidewall may differ based on the current approved wheel design)



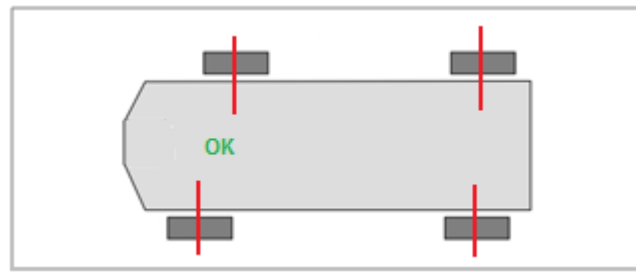
**Image 7**

**Image 8**

3.04 Additional items such as wheels bearings, washers, bushings, Wheel and Hub covers are also 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 **GRAPHITE ONLY** - Use of any wet lubricants such as oils, silicones, waxes or anything that is “wet” or “damp” at check-in or during the race, are **NOT** allowed. Please be aware, the Scout Shop does sell a liquid oil lubricant (Pinewood Derby Krytox Lubricant), this is **NOT LEGAL** for our District race and can **NOT** be used.

The use of a so-called “liquid graphite” product is OK, as long as it is simply graphite suspended in an alcohol solution, which evaporates after application and leaves dry powdered graphite in place. If used, this type of lubricant must be dry at inspection. **ONLY GRAPHITE OR GRAHPITE/MOLY LUBRICANT MAY BE USED.**

**DO NOT USE OIL LUBRICANT OF ANY KIND.** *Be advised, racers may be asked to add graphite to wheels and axles during inspection if no graphite can be seen on the axles or in the wheel hub area. Refusal to add graphite upon request will result in a disqualified car that will not be allowed to race. Please save everyone the hassle and do not use any other lubricant other than Graphite. DO NOT USE OIL LUBRICANT OF ANY KIND.*

5.01 Cars may be subject to a pre-race inspection that is looking for evidence of oil. If any oil is found on axles, wheels or car body, the car will be disqualified from the race.

**Note:** Scouts should make sure to thoroughly clean any oil that may have been used during the polishing process from the wheels and axles. If found, cars will not be allowed to race. **DO NOT USE OIL LUBRICANT**

### **IMPORTANT:**

**DO NOT bring graphite into the racing facility unless requested by a race official.**

**All lubrication should be applied outside the race facility or at home, and in a manner so that loose graphite does not fall off the car or wheels during registration and check-in. However, if you are using a specific type of “special blended” graphite, you may want to bring it with you and leave it in your car. If a car shows no signs of graphite being used on the wheels, axles or hub area, you may be asked to apply additional graphite in front of a race official. If you don’t have your own, you will be asked to use what we provide.**

**The graphite will stain the floors and carpets if spilled or dropped. Clean-up and any expenses associated with the cleanup of any graphite spills will be the responsibility of the scout and adult partner of that scout. DO NOT bring graphite into the racing facility. Leave it in your car.**

## **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.

6.05 Polishing the inner wheel hub that contacts the axle

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.

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.

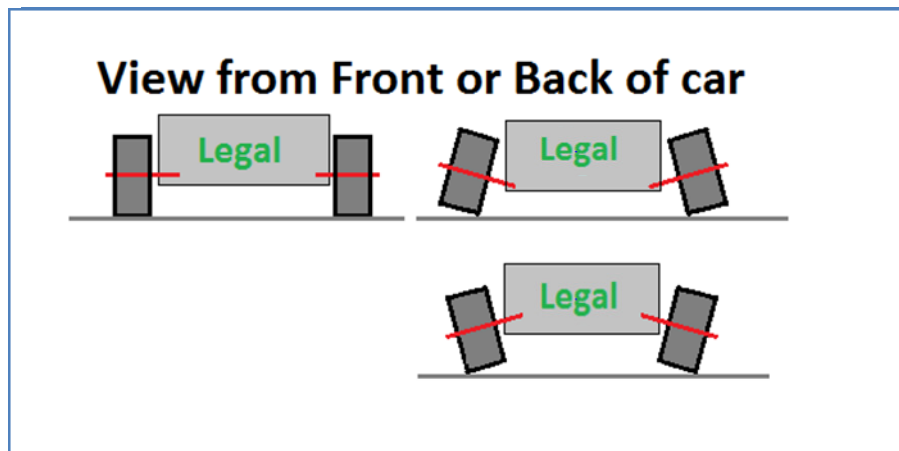


Image 10

## **7 Rules Violations**

7.00 The New Horizons Pinewood Derby District 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 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 District race. If in doubt, please check with the District 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 District 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 graphite) may be made to the car in addition to correcting the mechanical problem.

8.02 Any dispute of these rules with regard to a specific car’s eligibility to race in the District Race will be decided upon by no less then three members of the District 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.

## **9** **Miscellaneous**

9.00 Scouts that race may also enter a car into the Design Competition. Scouts can build a second car for this event, or, in some cases, use the same car they are racing. However, please note, the Design registration cutoff time will be **12pm sharp**. All cars that want to enter the design competition need to be registered and checked in to the Design area by this time.

Although it is possible to use the same car for both events, it is not guaranteed.

Ability to enter the same car in both events will depend on several things:

1) When the Scouts Pack is scheduled to race. *If the Scouts Pack is scheduled to race close to or after the Design cutoff, the same car cannot be used for both events.*

2) What time the Scouts car may be eliminated from the top 80 finishers. *If the Scout qualifies for the Top 80, they may not know that until about 1:15pm. However, if they are eliminated before 11:45, they may retrieve their car from the track and enter it in design.*

3) Any unforeseen delays in racing schedule. *If racing is delayed for any reason which postpones the posting of cutoff times. Design cutoff time will not change.*

## **10** **Top 15 Cars**

This year, all cars that finish in the top 25 of the Grand Finals may be required to receive a permanent "Winners" marking. This Winners marking will be used to identify those cars that have previously finished in the top 10 of the District race. The marking could include, branding the car body with a custom District Winner branding mark, drilling a small hole in each wheel or some other permanent method of identifying winners.