

2020 NFC Pinewood Derby Rules

Dear Pinewood Derby Chairs,

Please find attached the North Florida Council Pinewood Derby rules. To reduce confusion among Scouts and Leaders, we highly recommend that these rules be used at all Pack and District level races.

Rule Goals

- The rules should promote maximum involvement by the Scout.
- The rules should provide a fair and level playing field.
- The rules should allow for creativity in engineering and design.
- The rules should (attempt to) prohibit techniques that are beyond the skill level of an average Scout.
- The rules should (attempt to) dissuade the use of aftermarket bodies, wheels and axles.
- The rules should be usable at the Pack and District level.
- The rules should be easy to understand.
- The rules should be easy to enforce.

Race Day Inspection Tips

- To ensure fairness, always use the same scale for all cars.
- Always re-zero (tare) the scale before each car. If not, graphite buildup on the scale will affect car weights.
- During inspections, it is best to weigh the car first before checking dimensions, wheels and other areas since Scouts will often need to make final weight adjustments.
- Any time a car is touched by a Scout or Akela, it should always be brought back to the scale to be reweighed and re-inspected.
- Once the car has passed inspection, it cannot be touched or handled by the Scout or Akela unless approved by the Chairman.
- Due to variations in tracks, the rules provide a recommended clearance of 3/8 inch, however, most tracks allow for lower clearances with no problems. Cars that do not pass the 3/8 inch clearance guideline should be physically checked on the track curve.
- To protect the track, no lubricants may be applied to the exterior of the wheels.

Changes in the rules for 2020 have been highlighted in yellow apart from edits to remove boy-only language present in previous editions.

Yours in Scouting,

North Florida Council

Pinewood Derby Committee

NORTH FLORIDA COUNCIL PINEWOOD DERBY RULES

GENERAL:

G-1. Essential Materials: All cars entered shall be constructed from Official BSA Pinewood Derby Kit material. The car body, wheels and axles must be from an official BSA Pinewood Derby kit. This includes colored wheels and kits sold by Revell® Inc. under license by the Boy Scouts of America. If you purchase bodies, wheels or axles from non-BSA sources, you must ensure that the parts originated from an official BSA kit.

G-2. Competitor Categories: Cub Scouts will compete with others in the same "Cub Scout Year." In most cases this aligns with their year in school: Lion = Kindergarten; Tiger = 1st grade; Wolf = 2nd grade; Bear = 3rd grade; 1st year Webelos = 4th grade. In those cases which don't match the alignment, reconfirm the information and enter the Cub Scout according to the Cub Scout Year. In cases in which the Cub Scout year is indeterminate, enter the Cub Scout according to their grade in school. If none of these rules apply, contact the Derby Chairman for direction. In these rules the terms "Cub Scout Year", "age group", "class" and "Division" are synonymous.

G-3. Attendance: Only the Cub Scout may enter his or her car. This means that the Cub Scout must be present to enter his or her car into competition. An entry by "proxy" will only be allowed for special circumstances. Check with the Derby Chairman for details.

G-4. "New Work": Construction of entries must not have begun before the previous year's NFC Pinewood Derby Races.

G-5. Single Car per Scout per Event: A Scout may enter only one (1) car for the race.

G-6. The Derby Chairman will be the final judge of these rules: The decision of the Derby Chairman will be final and will be judged in the best interest of the Scout, while maintaining a level of fair competition. Unsportsmanlike conduct by any entrant or member of the audience will be grounds for expulsion from the competition and/or the race area.

QUALIFICATION:

Q-1. Qualifying Entrants: For 2020 any Scout that meets the eligibility requirements may register their car in the Council Pinewood Derby in the appropriate age-category. It is not required to previously qualify at a Pack or District race. Each car must be registered by the Scout who built the car before the close of online registration. On the day of the race the car must pass inspection by the inspection team before it may be entered in the race (see Technical Standards).

Q-2. Attire and Appearance: The Scout should be in a neat, clean FIELD uniform, (class "A").

Technical Standards:

The inspection judges at race-day check-in are responsible to evaluate each car's adherence to the technical standards. Their decision may be appealed to the Inspection Official and the Derby Chairman, who, after consultation with the inspection team, shall render a final, binding decision. Any car not meeting the technical standards will not be permitted to race. The fact that a car passed inspection at the Pack or District competition does not guarantee that it will pass for the Council competition. Any car, at any time, may be subject to additional inspections. Any car discovered to have any violations of the technical standards, even if not previously discovered during check-in, may be subject to disqualification. This decision may be appealed to the Inspection Official and the Derby Chairman, who will consult with any official who discovered or was made aware of any violations. The Track Official and the Derby Chairman will then consult with the SCOUT and their parent/assistant, and shall render a final, binding decision.

T-1. Material: The car body, wheels and axles must be from an Official BSA Pinewood Derby kit. This includes colored wheels and kits sold by Revell® Inc. under license by the Boy Scouts of America. If you purchase bodies, wheels or axles from non-BSA sources, you must ensure that the parts originated from an official BSA kit.

T-2. Weight: Race cars may weigh no more than five (5.0) ounces (total weight) as determined on the official scales during race day inspection.

T-3. Axles: The car must roll on the axles from an Official BSA Pinewood Derby kit. The wheels must be attached directly to the axle and spin freely. Use of the axle slots is not required (see pictures on page 7).

T-4. Size: Race cars may be no longer than 7 inches, nor wider than 2 3/4 (2.75) inches, nor taller than 3 inches, as determined by the official gages during race day inspection. (Underside clearance of at least 3/8 (0.375) inches and inside wheel to wheel clearance of at least 1 3/4 (1.75) inches is recommended, so that the car will run on the racetrack. Adequate clearance is the responsibility of the race car builder.)

T-5. Weights and Attachment: Weight may be added to the car and will be considered part of the car for purposes of all measurements. "Weight" is considered to be any material on the car that is not provided in the kit. All weight must be securely fastened to the car, e.g. by permanent glue, nails or screws, Weights shall be passive, i.e. non-moveable, nonmagnetic, non-electric, non-sticky, etc.

T-6. Wheels: There must be at least four wheels on the car, however, it is not required that all four wheels make contact with the track. However, nothing except the wheels may contact the track. You may paint or polish any part of the wheel. All of the original "tread marks" on the wheel face must be intact. It must be apparent to the inspector the tread marks are intact (*). Wheel treads must remain flat (*). The inner step at the wheel hub must also remain intact, it cannot be removed (*). The words "Official B.S.A." and other lettering on the wheels (inside and outside) shall remain intact and clearly visible to the inspector. No additional items may be added to the wheels or axles such as washers, springs, bearings, sleeves, bushings, O-rings, etc. *(see Picture's on Page 6 for example)

T-7. Gravity Powered: The race car may not be constructed or treated in such a way that the track's starting mechanism imparts momentum to the car. (For instance, this provision disqualifies cars with sticky substances on the front of the car and protrusions which may catch on the starting pin.)

T-8. Lubricants: Graphite lubrication is common. Other lubricants are allowed. ALL lubricants cannot leak or foul the track. ALL excess MUST be removed. All lubricants must be dry at the time of inspection/racing and NOT applied to the exterior of the wheels.

T-9. Staging: The car nose must not be pointed or forked (1/2 inch minimum front edge). No part of the car can protrude past the starting pin. The contact pint of the car to the staging pin shall not exceed 1 inch in height as measured from the track surface. (refer to pictures on page 7)

T-10. Body: The car body may have no moving parts.

Conduct of the Races:

Track officials are responsible for the proper conduct of the races. Decisions of track officials on questions of rules interpretations and procedure may be appealed to the Derby Chairman. Decisions of track officials on questions of fact may not be appealed beyond the Track Official. Scouts AND PARENTS should also be familiar with these rules.

C-1. Inspection Gages: All inspections will be conducted by one team at a special inspection area using scales and gages approved by the Derby Chairman. Please stress this fact to all members of your Pack. A “public pit” area containing tools and other accessories may or may not be provided by the race officials, so the Scout should be prepared to make adjustments to their cars, on their own, if necessary.

C-2. Impounding: Once the car has passed inspection and received its number sticker, the inspection team will place his car on the table provided. No further handling of the car by anyone other than the race officials, lubrication, or improvements to that car will be allowed. (However, see C-13.)

C-3. Car Handling Responsibility: A track official shall be responsible to stage the cars at the starting line, to retrieve the cars at the finish line (after the race has been called) and return the cars to the pit after their heat is finished.

C-4. Lane Assignment: Lane assignment for each heat shall be determined by computer.

C-5. Car Repair: If, during the race, a wheel falls off or the car becomes otherwise damaged, then the SCOUT may to the best of their ability perform repairs. Any weights or cosmetic accessories that fall off are not considered damage to a car. The SCOUT may seek advice for repairing the car, but may receive no other assistance. If a car is damaged due to track fault or due to fault of another car or SCOUT, then the Track Official, at his or her sole discretion, may allow additional repair assistance.

C-6. Car Interference: If, during a race heat, a car leaves its lane and, in so doing, interferes with another racer, then that heat will be re-run. If, during the re-run heat, the same car leaves its lane and, in so doing, interferes with another racer, then the heat will be re-run without the interfering car, and the interfering car will be given a time of 5.00 seconds. (However, see C-9.)

C-7. Car Leaves Lane: If, during a race heat, a car leaves its lane but proceeds down the track in a manner that does not interfere with its opponent, then the race will be called normally. (However, see C9.)

C-8. Car Leaves Track: If, during a race heat, a car leaves the track without interfering with its opponent, it shall be considered to have ended its heat at that point and the car will be given a time of 5.00 seconds. (However, see C-9.)

C-9. Track Fault: If a car leaves its lane, at their sole discretion, the Track Official may inspect the track and, if a track fault is found which probably caused the initial violation, the Track Official may order the race heat to be re-run after the track is repaired.

C-10. Not Finishing: If, during a race heat, a car does not reach the finish line on the track, a time of 5.00 seconds will be given to that car.

C-11. Call to Race: Competitors will be called to race by a racing official. Scouts are required to be present to watch their car race unless prior arrangements are approved by derby chairman.

C-12. Appeals: The Cub Scout must make all questions of rules interpretations, procedure and fact to the track officials promptly. **Akelas will not make appeals on the Scouts behalf.**

C-13. Track Champions: The Champions from each Division's race shall be accompanied, with their car, from the awards area to Championship Impound by the Track Official or their designee. The car will be impounded at the Championship Impound until the start of the Race of Champions. Inspection, repair as necessary and addition of lubrication, all performed solely by the Cub Scout, will be permitted just prior to the start of the Race of Champions. A post repair inspection and weigh-in may be conducted.

C-14. Opponent Assignment: Scouts will be grouped with opponents decided by the computer. The race is based on cumulative time. The computer will attempt to provide the best variety of opponents in an effort to race against as many opponents as possible.

C-15. Un-Scout-like Conduct: In order to promote a fun and welcoming environment for all Scouts and families all participants will be expected to abide by the Scout Oath and 12 points of the Scout Law. At any time, an Akela or Scout may be asked to leave the race on a temporary or permanent basis by the Derby Chair upon observation of un-Scout-like conduct. This may include disqualification of their Pinewood Derby car at the discretion of the Chair.

The Racing Environment:

R-1. Track Length and Drop: The track shall have a racing surface (starting line to finish line distance) not to exceed 49 feet with a drop not to exceed 4 feet.

R-2. Track Slope: The track slope shall decrease from approximately 30 degrees at the starting line to approximately 0 degrees at the finish line. The track will have a 4' section where this transition will occur.

R-3. Lanes: The track will have a minimum of 3 lanes. Each lane will consist of a straight, strip approximately 1 1/2 (1.50) inches, but certainly less than 1 3/4 (1.75) inches, wide and approximately 1/4 (0.25) inches, but certainly less than 3/8 (0.375) inches, thick, centered on a smooth surface no less than 4 inches wide. Each race car shall straddle such a strip during its heats.

R-4. Starting Mechanism: The "starting line" shall consist of vertical pins of approximately 1/4 inch diameter, extending approximately 3 inches above the track surface and approximately centered in each lane. The starting mechanism will trigger a laser starting sensor which starts the computer timer.

R-5. Finish Line Sensor Location: The finish line sensors shall be in alignment with the corresponding starting line pin and be approximately centered in its lane.

R-6. Finish Line Judging: The track's electronic finish line sensor will determine the order of finishing for each heat. In the event of an inconsistency brought to the Track Official or Derby Chairman's attention before the start of the next heat, the Track Official and the Derby Chairman will use, at their discretion, available resources to determine if the inconsistency is correct. The Track Official and the Derby Chairman will make the final decision whether to keep the finishing order as recorded or re-run the heat. Any discrepancy brought to the attention of the designated officials after another heat has started will not be eligible for appeal and the results of the heat will stand as recorded. Since the timer is accurate to 1/1000 of a second, a tie is rare; however, they do occur. In the event of a tie, the cars will not be re-run since scoring is based on cumulative time, not placement of finish, unless the tie is a result of a computer error, determined solely by the Derby Chairman. If after all heats are run and any cars tie for 1st, 2nd, or 3rd place, the tying cars will run a 2 heat tie breaker race to determine placement (fastest cumulative time receives the better placement). All cars that placed after the tying cars will move down in placement respectively.

R-7. Lane Selection: If the track has more lanes than needed, the Track Official (in conjunction with the computer's programming limitations) shall select the most evenly matched lanes for use by the racers. Each car will race in each lane an equal number of times.

R-8. Finish Line Electronics Sensitivity: Track Finish Line Electronics must trigger correctly if a lead pencil is passed 3/4 (0.75) inches above the track surface at a speed of 15 feet per second.

R-9. Finish Line Clearance: Track Finish Line Electronics and other track accessories must be no closer than 4 inches above the track.

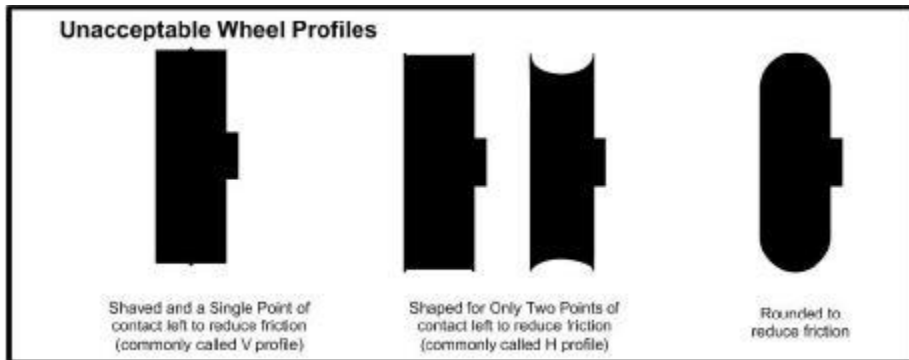
R-10. Cumulative Computation: During a division race, on a 4 lane track, each car will run down the track 4 times. The four times will be averaged for the cumulative total. During a division race, on a 3 lane track, each car will run down the track 3 times. The average of the three races will be counted.

R-11. Competition Format: For each scouting year competition and the Open Qualifying race, every car races the same number of times and every car races in each lane. The competition format will attempt to maximize the number of opponents that each car races against. In most cases, every car races at least 4 times. The number of races in each round is dependent on the number of Scouts entered in the race.

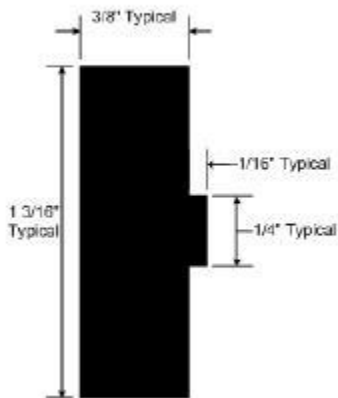
PICTURES & NOTES

Tread Marks

Wheels must be Official BSA. You may polish the wheel. Original "tread marks" must remain intact and clearly visible. (Rule T--6)



Kit Wheel



Original Wheel
step entact

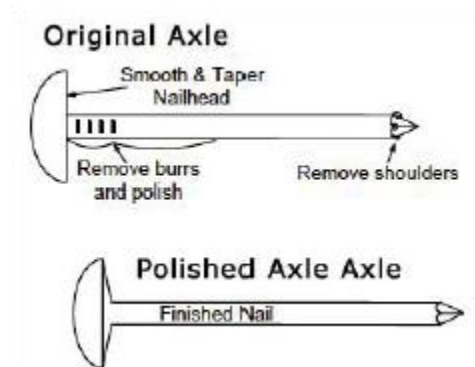


Modified Wheel
step removed



Axle modifications

(recommended modification) imperfections can be removed and polished. (Rule T-3)



Overall Car Dimensions



Race cars may be no wider than 2 3/4 (2.75) inches and have inside wheel to wheel clearance of at least 1 3/4 (1.75) inches. The entire car must stage behind the starting pin. The front of the car should have a 1/2" flat surface so it may be accurately placed against the starting pin. (Rule T-4) & (Rule T-9)

Race cars may be no longer than 7 inches, nor taller than 3 inches, and have an underside clearance of at least 3/8 (0.375) inches. (Rule T-4)

Frequently Asked Questions

What are the key differences in 2020's rules? We have removed boy-only language throughout the rules and added references to Lions. Rule Q-1 has changed. Scouts are no longer required to qualify at their District Race. All participants are encouraged to race their car at a fun council-wide event. Additionally, Rule C-12 has been clarified to show that not only must the Cub Scout make all appeals, Akelas will not do so on the Scouts behalf. Lastly, Rule C-15 regarding Un-Scout-Like conduct has been added. **Previous Changes from 2018:**

The Wheel modification rules have changed. As you build your car please review rule T-6. Also we changed the verbiage on the axel rules to make it more clear.

Can I use colored wheels? Yes, as long as they are official BSA wheels.

Do the wheels have to say "Made in USA" on them? No. Some of the new BSA wheels made by Revell are stamped "Made in China".

Can I use kits and parts made by Revell? Yes, as long as it is labeled as an Official BSA licensed product.

Can I use kits and parts made by PineCar? You may NOT use bodies, wheels or axles from PineCar since they are not from an official BSA kit. You may use tools, weights, paint, stickers and other decorations made by PineCar.

What happens if the inspector says my car is illegal? You will be given a chance to modify the car and/or change parts as needed. You may wish to bring tools, parts, weights, glue etc. on race day.

How many times will my car race? Is there a separate finals race? Are the cars ranked by points or by time? Are there awards for best design? Due to variations in Derby tracks, software and Pack procedures, these details are at the discretion of each Pack and District. The rules in this document will be used at the NFC Council Derby Race.