



Pinewood Derby Official Rules

April 18-19, 2020

Welcome to the 45th Annual Blackhawk Area Council Pinewood Derby in cooperation with Pecatonica High School

1 GENERAL

1.1 RACE FORMAT

LION: Up to two Lion Scouts from each Pack may be registered to race at the Council Derby. Scouts will not have predefined racing times. Instead, Lion Scouts will proceed directly to race area after check-in and car inspections. Scouts will race in groups of 3, racing once down each lane of the track, with winners for the heat determined using the standard Council Pinewood Derby point system. Scouts will only race one heat of 3 races, and will immediately be awarded with 1st, 2nd, and 3rd place awards for that race.

TIGER – ARROW OF LIGHT: Single elimination tournament conducted in heats. No more than 3 cars will race at a time, each car making one run down each of the 3 designated lanes. Heat winners will be determined by a total point system, whereby a car will be assigned 1 point for First Place, 3 points for Second Place, or 4 points for Third Place after each of the three races in a heat. The car with the least total points at the end of a heat will advance to another heat. The other two cars will be eliminated from the Derby.

TIES: Races that end in ties on a Pack level must be run over until a winner and runner-up is determined. Any entries that are received at the council office that show a tie will be returned and the Pack will not be registered for the races until they re-submit the entry without any ties

- 1.2 PARTICIPANTS:** Each Pack may enter one Cub Scout in each of the twelve (12) race and six (6) design categories. The race entrants shall be the winners (1st Place) and runners-ups (2nd Place) from their Pack derby, except for the Lions entry where place will not matter. A Cub Scout may be entered in **one category only. NO DUPLICATE ENTRIES**



If a Scout is both winner of Pack race **AND** design judging, he/she must choose which category to participate in at the Council Derby.

- 1.3 The car must be built for the current Pinewood Derby Racing Season. (Built after April 15, 2019).** The car must be the **SAME** car run by the entrant in his Pack race.

- 1.4 A completed car purchased from a third party is not allowed. Lion Scouts may use the Pre-Cut Wedge #614417.**

- 1.5 The car may not be sent to third party facilities for tuning or other performance enhancements.**

1.6 PREPARING THE CARS: Each Scout who qualifies should have his/her car boxed and sealed individually. Label box with the following information:

- Race Chairman or Cubmaster
- Pack number and District
- Category (For example: 2nd Grade Runner-up, 3rd Grade Design, Lion, etc.)
- Name of Cub Scout

1.7 ONLINE ENTRY FORM MUST BE SUBMITTED BY MARCH 15, 2020

1.7.1 All race chairmen or Cubmasters must complete an online entry form with payment at www.blackhawkscouting.org.

1.7.2 After April 1, 2020, a copy will be returned to the Pack race chairman or Cubmaster with the racing date and starting time for each entrant's race. **It is your duty to contact the Cub Scout's parents with that information.** Entrants must be on time - any race entry may be eliminated if the starting time is delayed more than 5 minutes and any design entry may be eliminated if they check in after the scheduled judging time.

1.7.3 Prior to packaging and sealing, each car shall be re-inspected for conformity to the Council Derby Rules. This is the time for minor repairs. Pack and seal each car in a box - **1 car per box.**

1.7.4 No graphite or other lubrication will be allowed to be added during Pinewood Derby at Pecatonica High School. All lubrication must be done before boxing the cars. Failure to comply will result in disqualification.

1.8 SPECIAL NOTE:

If you do not receive an email acknowledgment of your Pack entry immediately upon registration and the \$50 fee, please call the Blackhawk Area Council Service Center at 815-397-0210. Registration fee will increase to \$100 for all entries received starting March 15, 2020.

If your Pack schedules its derby just before or after the early entry deadline and would like to participate in the Council Pinewood Derby, please submit an entry form using "Scout 1", "Scout 2", etc. in place of youth names. Winners may be phoned in to the Pinewood Derby Chairman later and the Pack receives the early entry fee discount.

1.9 FIFTH GRADE ARROW OF LIGHT SCOUT POLICY:

Scouts BSA youth may participate in the Council Pinewood Derby if they qualified as a 5th grade Arrow of Light Scout at their Pack's race prior to crossing-over to a Troop.

1.9.1 PACK VOLUNTEERS:

The Council Pinewood Derby Committee is asking each Pack to submit the name of a person(s) who would be willing to volunteer their time to help at the event. Total time commitment is approximately three hours. Please provide the names and phone numbers on your Pack's entry form during the online registration. A rep from your district will contact this person to explain what's involved and the specific time schedule. This event needs 150 volunteers to run successfully.

1.9.2 CUBMASTER/ RACE CHAIRMAN CHECK LIST:

- Pick up pinewood car kits from the National Scout Shop as early as you can to avoid the rush.
- Conduct your Pack races (preferably in January or February to avoid late entries).
- Submit your Pack Entry Form before the early fee deadline (March 15, 2020).
- Remind all Cub Scouts and their parents who qualify the location of the race.
- Notify the Scouts (and parents) as soon as you receive their race times (after April 1, 2020).
- Indicate where you plan to meet the youth to give them their cars at Pecatonica High School.
- Encourage all Scouts and leaders to wear their uniforms and a smile.
- Pick up your Pack's envelope which contains your patches and ribbons at the school on race day.
- Plan to have fun!

2 BODY

- 2.1** The main body structure (chassis) must be made from the wood block provided in the Grand Prix kit #17006 or #17000; Lions may the Pre-Cut Wedge #614417. Any additions must be firmly attached, non-moving, and meet car size specifications. If you lack the tools or resources to cut out a car from a stock block of wood, we encourage you to attend a workshop hosted by your den, Pack or Scout Shop.



The following **guidelines** are intended to help you construct a car with the necessary clearance for most tracks. If any question arises about a car's clearance during check in, race inspectors should place the car on the track to verify that only the wheels can touch the track.

- Car bottom: to clear a solid center rail, the bottom of the car should be no less than 3/8 inch from the surface.
- Fenders: Fenders or other body parts may extend below 3/8 inch from the track surface. Remember the guide rail width so the fenders do not rub.
- Weights: To aid in a safe stop at the end of the track, we recommend that you insert weight inside the body or place it on the top of the car. Avoid placing thick (over 1/8") weight on the bottom of the car as that may destabilize the car on the stop section.

- 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
- 2.2.3** Weight: not to exceed 5.0 ounces on a scale accurate to 1/10 ounce.
- 2.2.4** Height: not to exceed 3 inches
- 2.2.5** Clearance: **The wheels are the only part of the car allowed to touch the track.**
- 2.2.6** Center rail width: Wheels must clear center guide rails, no less than 1 3/4 inches minimum.

- 2.3 Wheelbase:** the distance between the center of the front and rear wheel must be no less than 4 inches. Extended wheelbases are allowed provided the wheels do not extend past the car body.

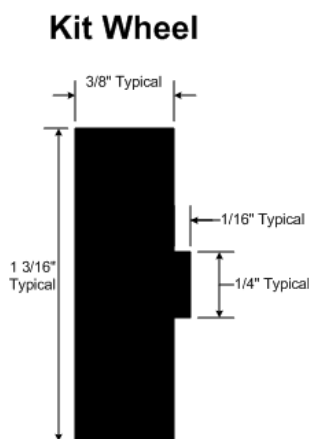
- 2.4 Front Edge:** The front edge of the car must rest against the starting peg on the track so that the entire car is behind the peg. This rule ensures the car rests securely against the starting pin when placed in the starting position and is wide enough to trigger electronic finish lines. Another way to say this is no needle nose cars.
- 2.5 Suspension:** The car shall have a solid suspension consisting of the wheels and axles rigidly mounted to the car body. No springs, linkages, shock absorbing materials or other constructions which provide a non-rigid or floating-type suspension are permitted.
- 2.6** At least 4 wheels must be attached to the **sides** of the car body. **Each wheel must be attached to the car's wood chassis with a legal axle.**
- 2.7** The front most and rear most wheels must be positioned across the body from one another.
- 2.8** Details/decals such as steering wheel, windshield, driver, exhaust pipes, trim, etc., are only permitted if they are rigidly mounted to the car body and do not exceed the overall car specifications
- 2.9** The following items are prohibited:
1. Springs
 2. Starting devices or propellants
 3. Electronic or lighting devices that interfere with the race electronics.
 4. Liquids, wet paint, oil, sticky substance, or powders of any kind (other than axle lubrication)
 5. Glass or excessively fragile parts
 6. Bearings, sleeves and or bushings
 7. Hubcaps covering the nail head
 8. Loose/moving objects on or in the car



Although 4 wheels are required, it is not required that all 4 wheels touch the track surface. It can be difficult to get all 4 of the wheels to touch simultaneously. The rationale for 4 wheels is that it ensures the car will stay on the track and not slide off the center rail and collide with another car. Three(3) wheels touching the track are allowed provided the 4th wheel is within 1/16" (.0625) of the track surface.

3 WHEELS

- 3.1 Wheels:** The only wheels allowed are those from Official Pinewood Derby Car Kits #17006 or #17000, or Official Pinewood Derby Wheels and Axles #17553, #647053 - #647056, or #647826 (black and colored wheels). Car kits, including wheels and axles from any other source are not allowed. Wheels must be original width, thickness and height and the tread surface must remain flat. Tapering or coning of the outside surface of the inner wheel hub (the inside surface nearest to the car) is allowed. **Wheels may not be shaved. No other modifications are allowed.**
- 3.1.1** Although 4 wheels are required, it is not required that all 4 wheels touch the track surface. It can be difficult to get all 4 of the wheels to touch simultaneously. Three wheels touching the track are allowed provided the 4th wheel is within 1/16" (.0625) of the track surface.
- 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.
- 3.4** The wheel diameter must be no less than **1.180 inches**.
- 3.5** The tread and sidewall width must be no less than **.360 inches**.
- 3.6** The tread surface must be flat and parallel to the wheel bore. Therefore, the following modifications are prohibited:
1. Rounding of the tread surface
 2. Grooving, H cutting, or V cutting the tread surface.
 3. Truing the tread surface with sandpaper, straight edge, or lathe to correct "out of round" wheels resulting in a wheel diameter less than 1.180".
 4. Truing and shaping the inner edge of the tread surface
- 3.7** The following wheel modifications are prohibited:
1. Removing material from the inside tread surface or the inside sidewall surface
 2. Drilling holes in the sidewalls or tread area
 3. Filling wheel tread with any type of material
 4. Filling the wheel bores and re-drilling the bore
 5. Tapping the wheel bore
 6. Balancing the wheel by adding material such as glue or fingernail polish to the inside of the wheel



Unacceptable Wheel Profiles



Shaved thin to reduce mass



Shaved and a Single Point of contact left to reduce friction (commonly called V profile)



Shaped for Only Two Points of contact left to reduce friction (commonly called H profile)



Rounded to reduce friction



Some online vendors sell aftermarket BSA wheels that have been lightened by removing material from inside the wheel surfaces. Per rule 3.7, these wheels are NOT allowed and are easily recognized at inspection. Cars with these wheels will NOT be permitted to race. ALL AFTERMARKET WHEELS ARE PROHIBITED.

4 AXLES

- 4.1 Metal Axles with a nail head are required with an overall diameter of no less than .084 inches.
- 4.2 One-piece axles that extend through the width of the car to support both wheels are not allowed.
- 4.3 Slight bending of the axles is allowed to help with stability.



The ONLY axles allowed are those axles from Official Pinewood Derby Car Kits #17006 or # 17000, or Official Pinewood Derby Wheels and Axles #17553, #647053 - #647056, or #647826 (black and colored wheels). Burrs on the underside of the axle head and ridges on the axle shaft (if any) may be removed. **If the underside of axle head is to be tapered, be careful not to reduce the diameter of the axle head.** Polishing of the axle shaft is allowed. The mating surface of the axle may not be bushed, sleeved, or lined. Only a dry non-permanent spray-on, brushed-on, or dusted lubrication compound is allowed. Bushings, sleeves, permanent coatings, thrust washers, and enclosed axles (with hubcaps) are prohibited.

You may also polish and groove the axle provided that the raised portion of the axle (the part the wheel rides on) is no less than .084 inches, roughly the same diameter as the original BSA axles.

5 LUBRICATION

5.1 Over application of lubricant, which results in excessive track contamination on the track is not allowed.

5.2 NO LUBRICATION IS ALLOWED AT PECATONICA HIGH SCHOOL. Doing so, will lead to disqualification.

6 RACE DAY

- 6.1** 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.
- 6.2** Every effort will be made to do the inspection without any altering of the car. **If we can't verify that the wheels have not been lightened due to interior wheel weights, fenders, or other reasons, we will ask YOU to take the wheels off for inspection. If you are unable to take the wheels off, the car will not pass inspection.**
- 6.3** After a car has passed inspection, only race officials and the scout may handle the car.
- 6.4** After check-in, adjustments are not allowed. Car repairs during the race are not allowed unless authorized by the race officials.
- 6.5** Once Inspection is PASSED before the race, the car will not be re-inspected after the race.

- 6.6** Good sportsmanship and behavior is expected. Race officials may ask anyone not following this rule to leave.
- 6.7** Please register no sooner than 15 minutes prior to your assigned starting time so that your Cub Scouts can register, weigh in, and pass through inspection with their cars on time. After a Cub Scout's car passes pit inspection and is placed on the pit table, he/she alone will be allowed in that pit area.



Typically, race officials will authorize a car repair if it was involved in a collision with another car or object. However, the decision to allow a repair is left entirely to the discretion of the race officials. Depending on the race officials, they may offer to assist with the repairs if needed.

7 BEST DESIGN JUDGING:

In order to qualify for Best Design judging, cars must comply with all requirements of Sections 2 through 4. The car must fit within the inspection box used during inspection.

**ALL RACE RESULTS WILL BE DETERMINED BY THE ASSIGNED
TRACK JUDGES, AND ALL TRACK JUDGE DECISIONS WILL BE FINAL.
VIDEO REPLAYS, PHOTOS, ETC., WILL NOT BE CONSIDERED.**

8 QUESTIONS:

Questions may be addressed to the Race Officials. The Council Race Officials may be contacted at amyshkowec@gmail.com.