



2017 Pinewood Derby April 8th-9th, 2017 Pecatonica High School



We have updated the rules this year. The format has changed to a friendlier style. There are WARNING boxes and boxes with useful INFO.



1 GENERAL

1.1 RACE FORMAT: The race format for each category will be a 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 of a multiple lane track. Heat winners will be determined by a total point system for the heat, whereby a car will be assigned 1 point for 1st Place, 3 points for 2nd Place, or 4 points for 3rd Place after each of the three races in a heat.

The car with the least total points at the end of all heats 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 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 ten (10) race and five (5) design categories. The race entrants shall be the winners (1st Place), runners-ups (2nd Place) from their pack derby. A Cub Scout may be entered in **one category only**. For example, a Scout qualifying for the racing portion may not be included in the design judging.

NO DUPLICATE ENTRIES



If a Scout is both the winner of his pack race **AND** design judging, he must choose which category he will participate in at the council race.



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1.3 The car must be built for the current Pinewood Derby Racing Season. (Built after April 10, 2016). The car must be the **SAME** car run by the entrant in his pack race.

The car must be constructed using the materials supplied with regulation Grand Prix Kit #17006 or #17000.

1.4 A completed car purchased from a third party is not allowed.

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 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 or 3rd Grade Design)
- Name of Cub Scout

1.7 ENTRY FORMS MUST BE AT THE COUNCIL SERVICE CENTER BY MARCH 17, 2017

1.7.1 All race chairmen or Cubmasters must do the following upon completion of their Pack Pinewood Derby: Complete the entry form and mail along with the \$40.00 Pack Entry Fee (Early Discount) to Blackhawk Area Council — Pinewood Derby, 2820 McFarland Road, Rockford IL 61107.

1.7.2 After April 1, 2016, 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 boxing and sealing, each car shall be re-inspected for conformity to the Council Derby Rules. This is the time for minor repairs and re-lubrication. (Please restrain from dumping lots of extra graphite in the storage boxes.) Pack and seal each car in a box - **1 car per box.**

1.7.4 Because of the excessive use of graphite in past years, the Council Pinewood Derby Committee has specified that no graphite or other lubrication will be allowed during the Pinewood Derby at Pecatonica High School. All lubrication must be done before boxing the cars. Failure to comply will result in disqualification.



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1.8 SPECIAL NOTE:

If you do not receive an acknowledgment of your pack entry within two weeks after sending in your entry form and \$40.00 fee, please call the Blackhawk Area Council Service Center at 815-397-0210.

A fee of \$80.00 will be charged for all entries received after the early entry deadline (March 17, 2017).

If your pack schedules its derby just before or after the entry deadline and you would like to have your Scouts race, we suggest filing a blank entry form with all information except for the names. The winners can be phoned in to the pinewood derby chairman later and the pack receives the early entry fee discount.

1.9 FIFTH GRADE WEBELOS SCOUT POLICY:

The following policy applies to 5th grade Webelos:

If the 5th grade Webelos Scout races at his pack race as a Cub Scout and qualifies for the council , then he may race, even if he has transitioned to Boy Scouts.

However, if the Webelos Scout transitioned to Boy Scouts before the pack race, he will not be able to qualify for the council races. If the pack wishes, the Scout can race at the pack level, but he will not qualify for the council race.

1.91 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 Council Derby.

Total time commitment is approximately three hours.

Please provide the names and phone numbers on your pack's entry form in the space provided. A representative from your district will contact this person to explain what's involved and the specific time schedule. 150 volunteers are needed to run this event.

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).
- Send in your pack Entry Form before the discount fee deadline (March 17, 2017).
- Remind all Cub Scouts who qualify and their parents that the races will be at Pecatonica High School.
- Notify the Scouts (and parents) as soon as you receive their race times (after April 1, 2017).
- Indicate where you plan to meet the boys 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, ribbons, and mug at the school. Look for sign "Patch Pick- Up."
- Plan to have fun!

2 BODY

2.1 The main body structure(chassis) must be made of wood. Any additions must be firmly attached, non-moving, 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
- 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.



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.



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.

3rd party pre-shaped cars are NOT allowed.

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.



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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. The needle nose makes it hard to align for a straight start and often does not trip the electronic sensor until enough of the car has passed to trip the sensor.

- 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.**



Although at least 4 wheels are required, it is not required that all 4 wheels touch the track surface. It can actually be difficult to get all 4 of the wheels to touch. Most of the fastest cars have one front wheel raised slightly and not touching.

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.

- 2.7** The front most and rear most wheels must be positioned across the body from one another.
- 2.8 Details:** Details such as steering wheel, windshield, driver, exhaust pipes, trim, etc., are permitted as long as they are rigidly mounted to the car body and do not exceed the overall car specifications



NEW STUFF → Wheel "Air Dams" and Interior Wheel weights:

Any covering of the interior of the wheel must be transparent (clear) and if using interior wheel weights there must be a slot that allows for rotating the wheel for interior inspection.



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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

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 thru #17557 (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.**

3.2 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 **1.180 inches**.

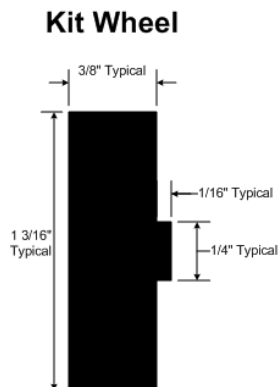
3.5 The tread and sidewall width must be no less than **.360 inches**.

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.

3.7 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



Acceptable Wheel



Trued and smoothed with
the rough edges smoothed
and coned hub

Unacceptable Wheel Profiles



Shaved thin to
reduce mass



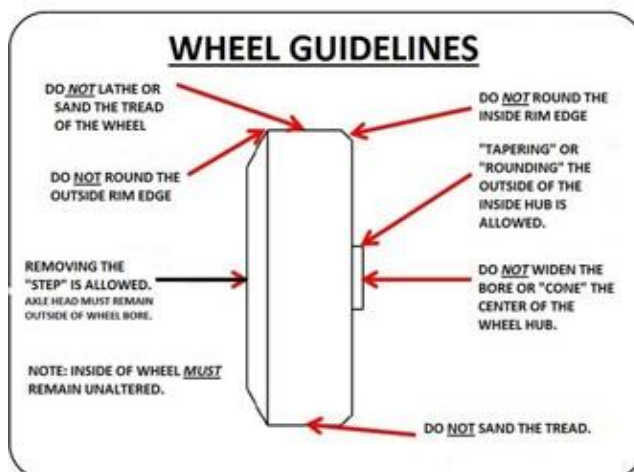
Shaved and a Single Point of
contact left to reduce friction
(commonly called V profile)



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

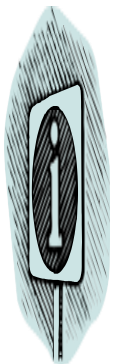


Rounded to
reduce friction





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

- Truing the tread surface with sandpaper, straight edge, or lathe to correct “out of round” wheels resulting in a wheel less than 1.180”.
- Truing and shaping the inner edge of the tread surface
- Narrowing the tread surface to .295” (19/64”) to get straight edges
- Tapping the wheel bore
- Balancing the wheel by **adding** material such as glue or fingernail polish to the inside of the wheel



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.



The ONLY axles allowed are those axles from Official Pinewood Derby Car Kits #17006 Or # 17000. Or Official Pinewood Derby Wheels and Axles #17553 thru #17557 (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 onto the track is not allowed.
- 5.2 **NO LUBRICATION IS ALLOWED AT PECATONICA HIGH SCHOOL.** Doing so, will lead to disqualification.



Lubricants you may use include but are not limited to: Graphite, or other dry lubricants. Lubricants can be dusted on, sprayed, or brushed on provided they are dry.

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, air dams, fenders, or other reasons, we will ask YOU to take the wheels off for inspection.**



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- 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.



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.

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 and he alone will be allowed in that pit area.

6.8 Where to Report at Pecatonica High School:

Since this will be the first time for many people to visit the Council Pinewood Derby, a road map giving directions to Pecatonica High School will be included with your racing information. There will also be signs within the school designating all race areas.

Meet your Cub Scouts, parents, and leaders at the car pick-up area. A special area will be designated in the school.

**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.**

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.



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8 QUESTIONS:

Questions may be addressed to the Race Officials. The Council Race Officials may be contacted at cannie.ware@scouting.org.