



2023



OFFICIAL RULES



Please honor the tradition of our derby and help your Scout build their car.



Welcome to the Pack 3, 2023 Pinewood Derby Rules and Regulations. Please remember the Pinewood Derby is meant to be a team effort in which the Scout helps build their car.

A Cub Scout Gives Goodwill. Good sportsmanship is expected of all Scouts, responsible parents, and other representatives of the packs. All Race Officials have the authority to immediately disqualify a Scout should his behavior, or the behavior of his responsible adult, or the behavior of any representative is deemed either verbally or physically disruptive, abusive, or inconsistent with the Scout Oath and Law. Behavior based disqualifications may not be appealed. Everyone should keep in mind the larger goal of Cub Scouts is setting the example of good citizenship and character, demonstrating kindness and courtesy at all times.



General:

- **Cub Scout Class Competition:** The Pinewood Derby is open to all Cub Scouts registered as of January 1, 2023, who want to race pinewood derby cars within the Standard Pinewood Derby Rules.
- **Open Class Competition:** The Pinewood Derby is open to all who want to race pinewood derby cars within the Standard Pinewood Derby Rules.
- **Outlaw Class Competition:** The Pinewood Derby is open to all who want to race pinewood derby cars outside the Pinewood Derby Standard Rules.
- **Cub Scout, Open and Outlaw Class Competition** cars must be built with the materials furnished in the **NEW Official BSA Pinewood Derby Car Kit**, or the **Official BSA Replacement Parts Kit**. This includes the pinewood block, axles, and wheels (including official BSA colored wheels). With the exception of decorative and construction items (weights, glue, lubricants, finishing materials), only materials from the official kits may be used. Separately purchased items (contoured pinewood bodies, machined wheels, and single-piece axles) are specifically prohibited.

NOTE: BSA National changed the design of the wheels and axles in 2009. The Official Pinewood Derby kit must be purchased from the Scout Shop at the Golden Spread Service Center, the National Scout Shop or an official BSA Distributor. Other brands, such as Pine Car, have different axle spacing and different size parts and will be disqualified. Pre-cut cars from official BSA distributors must comply with design specifications listed below.

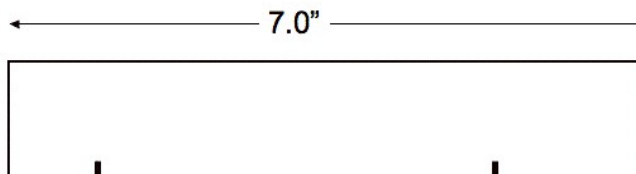
- The same car without modifications should be used for Pack and District races.
- A new car must be built each year BY THE SCOUT OR PARTICIPANT who is racing. Cars made in prior Scouting years are strictly prohibited.
- Only one (1) car per scout or participant may be entered.
- Use of the new Official BSA pre-cut (contoured) body kits, although not illegal, is strongly discouraged because it does not align with the goals of this event.

Standard Pinewood Derby Rules:

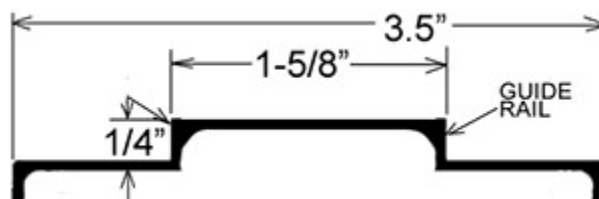
Dimensions and Weights:

- Width, including wheels and axles, must not exceed **2 3/4 inches** (6.99cm) or it may interfere with the car next to it.
- Length shall not exceed **7 inches** (17.78cm). **NOTE:** Verify wood block length before starting to cut out your car, as some blocks are actually slightly longer than 7 inches.





- Cars must clear the center rail of the track, which is **1 5/8 inches** wide by **1/4 inch** tall along the entire length of the car. Minimum clearance between the bottom of the car and the bottom of the wheels shall be **3/8 of an inch** to avoid contact with the tracks center guide strip. It is recommended that weights on the bottom of the car be inset so they are flush with the bottom of the wood block.
- Minimum width between wheels shall be **1-3/4 inches** so the car will clear the center guide rail.



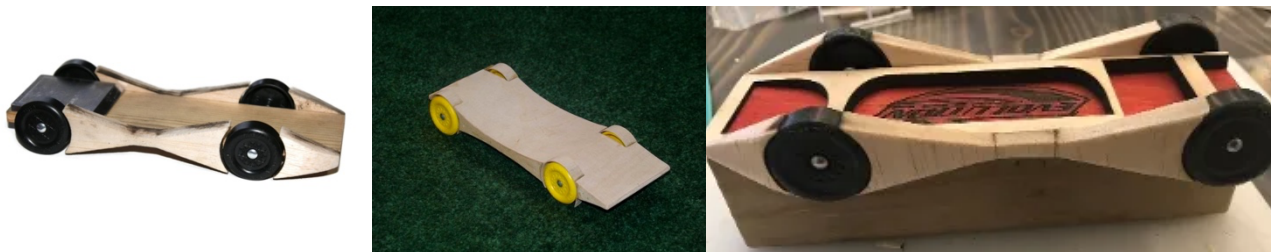
- Maximum height of the car shall not exceed **3 inches**, or it may not clear the finish line.
- Weight shall not exceed **5.0000 oz.** (141.748 grams). Overweight cars must be reduced to running weight or below before they can be entered. The readings on the official race scale shall be considered final and all decisions made by officials are final.
- No part of the car may protrude beyond the starting line mechanism. The front edge of the car must not be more than **1 inch** above the wheel lane of the track and be at least **3/4 inch** wide at the center of the car. The nose of the car cannot come to a sharp point. Pointy nose cars such as Carrots, Arrows, Pencils, Rockets, etc. are not permitted as the cars are difficult to stage and can create timing issues.
- “U” and “V” Shaped front ends with a cheater bar are not permitted.



- Any details such as steering wheel, driver, spoiler, decals, painting, and interior details added must be within length, width, height, and weight limits.
- No loose materials of any kind shall be permitted in or on the car. All weights shall be attached with screws, nails, glue, etc. – tape is not permitted.
- No part of the car or any attachment to the car may be capable of coming into contact with the track other than the wheels.

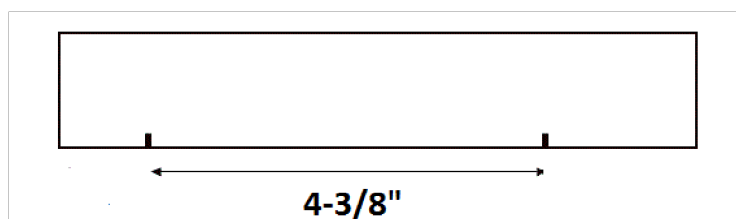


- Fenders are permissible to make Police Cars, Stock Cars, Busses, Fire Trucks, etc. and must meet the overall dimensions above.
- Aerodynamic Fenders that improve air flow over the wheels are not permitted.



Axles and Suspension:

- BSA nail type axles. Only BSA nail type axles provided within the **Official Pinewood Derby Kit** are allowed.
- Axles may be polished, de-burred, straightened, bent, and lubricated.
- Grooved axles are not allowed
- Only** powdered graphite lubricant is permitted. No Oil lubricants, even those that dry after application.
- Cars shall be lubricated before inspection. **No Racers/Parents will be allowed to have lubricants in the building or at the race site.**
- One-piece axles that extend through the width of the car to support both wheels are not permitted.
- It is NOT required for 4 wheels to touch the track.
- Axles may be relocated from the original axle slot locations, but the original wheelbase (distance between the axles) shall be maintained at **4-3/8 inches**. The wheelbase may not be staggered and/or extended.
- Axles can be mounted by drilling Axle holes or inserted into the slots on the car.



Wheels:

- Use only Official BSA Wheels; colored Official BSA Wheels are permitted.
- Wheels may not be run in reversed position.
- Each wheel must be attached by an axle.
- Wheels may not be greater than 10 degrees of an angle from the body of the car.
- All lettering and numbering, both inside and outside, must remain complete and be visible.
- The fluting and other BSA markings on the outside wheel area must remain visible.
- Outer wheel surface (tread area only) may be lightly sanded, shaved, or polished to remove minor surface imperfections, mold casting burrs, and correct off center wheel bores; but total wheel diameter may NOT be reduced below **1.170 inches** (29.72mm). Outer wheel surface must not be reshaped or have the contour changed in any way in an attempt to minimize tread contact or alter aerodynamics.
- Minimum outside diameter of wheel must be equal to or greater than **1.170 inch** (29.72mm), in order to maintain the ridges on the outer edge.
- Tread surface must be flat and parallel to the wheel bore.
- No material may be removed from the inside wheel surfaces at any point.
- Wheel Bore treatment is allowed but limited to polishing. Wheel bores may not be filled and re-drilled to alter bore diameter or to achieve better fit with the axle (no material may be added to the wheels).
- Coning the inner hubs and truing the inside tread edge is allowed, as long as overall wheel width is not reduced below **0.36 inches** (9.14 mm). Outer hubs may not be modified at all.





- The weight of the wheel shall not be increased or decreased except where limited amounts of material are removed from the tread or inside tread edge to remove minor imperfections. No material such as glue, fingernail polish, or tape, may be added to the inside of the wheel increasing its weight.
- There must be at least four (4) wheels on the car, however it is not required that all four (4) wheels make contact with the track surface. One (1) wheel may be lifted from the track surface.
- Non-Dominant/Lifted wheels must meet wheel specifications set forth above.
- **Derby officials and/or Judges reserve the right to measure the wheel with calipers to verify dimensional compliance with official wheel size restrictions. If found in non-compliance a racer may replace their wheels with their own spare stock wheels.**

As a point of reference, this is an image of Official BSA wheels/axles purchased at an official BSA retailer.



The following diagram offers wheel measurements & examples of disqualifying wheel modifications.

BSA PINEWOOD DERBY WHEEL RULES CLARIFICATION OF DISQUALIFYING / ALTERED WHEELS

No alteration, narrowing, lathe cutting, or re-shaping of wheels (inside or outside) is allowed!!!!

PASS 1.170 + PASS 0.380 STANDARD WHEEL		ROUNDED WHEEL FAIL		"V" WHEEL FAIL		CUPPED WHEEL FAIL		REDUCED DIAMETER FAIL	
"H" WHEEL FAIL		RIBBED WHEEL FAIL		SPEED WHEEL FAIL		SLANTED OUT FAIL		SLANTED IN FAIL	
KNIFE EDGE FAIL									

NO LIGHTENING OF THE WHEEL IS ALLOWED

LIGHT SANDING OF WHEEL TREAD TO REMOVE IRREGULARITIES IS PERMISSIBLE. WHEEL TREAD MUST BE FLAT!

MINIMUM WHEEL DIAMETER ALLOWABLE IS 1.170 INCHES.
MINIMUM WHEEL WEIGHT OF EACH WHEEL IS 2.45 GRAMS.



- **Note:** There are after-market modified wheels available that have been **LIGHTENED**.
- This is usually done by turning the wheels on a lathe and removing material from inside of the wheel.
- These wheels are NOT allowed and can be **EASILY RECOGNIZED** at inspection.





Examples of Prohibited Items which CANNOT be used:

- Magnets, springs, or suspension systems of any type.
- Starting devices, finish line devices, propellants, or propulsion systems.
- Wet paint, or Sticky substances.
- Glass or excessively fragile parts.
- Electronic or lighting devices (if lights are on the car they must be turned off).
- No Bearings or Solid one-piece rod style axles.
- No use of Guide Pins or such devices.
- Axles and wheels attached to any device that mechanically alters rotation or spin.
- Air shields, wheel well covers or any other device that covers the hollow area of the wheel.
- Hubcaps and/or Stickers on wheels.
- Loose objects on car. All weight must be securely fastened or embedded in the car.
- No live ammunition allowed.
- Washers between the wheels and car body.
- No lead (Pb).
- No mercury or other liquids.

Cub Scout and Open Class Competitions Pinewood Derby Rules:

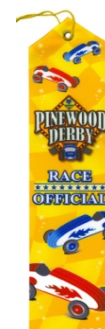
- Cars will be checked for the requirements as set forth in the Standard Pinewood Derby Rules.
- The weight of the car shall not exceed **5.0000 ounces** (141.748 grams).

Outlaw Class Competition Pinewood Derby Rules:

- Cars will be checked for the requirements as set forth in the Standard Pinewood Derby Rules with the following rules modifications:
 - Wheelbase can be extended. Any wheelbase can be used. Wheels must be directly across from one another. Additionally, the wheels may not extend beyond the rear of the car or past the front of the car – the length of the car is not to exceed **7 inches** (17.78cm).
 - A wooden car chassis is required (the wooden structure that holds the weights, axles and other addons).
 - Fenders and aerodynamic modifications allowed.
- The weight of the car shall not exceed **5.0000 ounces** (141.748 grams).

Race Operations and Miscellaneous Rules:

- **All Cars MUST pass inspection before being allowed to race based on these rules and regulations.**
- All lubrication of axels must take place prior to inspection during check-in.
- An approved inspected car will then be checked in and not be touched by anyone but race officials. Once all division races are completed, cars will be released by Race Officials to the scouts and participants who participated.
- Cars will be checked in and impounded before the Pack3 Races to check for rule compliance. **Just because a car passed at one event does not mean it will automatically pass at the next event.**
- Race Officials have the Right to Disqualify **Any Car**, that cannot be brought into compliance by the time registration ends or does not meet all of the stated rules and specifications set forth herein. **The Race Officials Decision is Final.**
- You have the right to an appeal. If a Race Official makes a ruling and you wish to appeal it – **ALL** Officials will be assembled and based on majority rule the decision will be upheld or overturned. **This appealed decision is FINAL and no more appeals will be allowed.**
- Race officials shall have a copy of these rules during check-in and the event to assist in settling said disputes and they will make all final decisions based on fairness to ALL scouts and participants.
- **Un-sportsmanlike conduct or behavior (including verbal or physical threats) by any race participant or member of the audience may be grounds for expulsion from the competition and/or the race area.**



During Races:

- Full CLASS “A” or CLASS “B” uniform, as determined by their Pack, is recommended for all racers.





- Pack 3 race format is at the discretion of the Pack. (Example: double elimination, best time, bracket style racing, Perfect N, etc.)
- Racers will be grouped by Cub Scout Rank at the time of their units PWD race. (i.e. AOL who crossover to Boy Scouts may still race at the Pack 3 PWD as AOL)
- Each race is timed with electronic equipment.
- In the event the equipment fails, the race(s) will be re-run.
- If a car interferes with another car during a heat, that heat shall be rerun. If the same car causes interference a second time, a third heat shall be rerun without the interfering car. Race Officials will use their best judgement to be fair if problems with the track itself are causing issues with races.
- If a car jumps the track and does not interfere with another car and finishes the race it will not be re-run.
- If an item affixed to a car falls off during a race, and in the opinion of the race official the car is still able to race, repairs will not be allowed.
- If a car suffers a mechanical problem *during/after* a heat (loses on axle, breaks a wheel, etc.) or is unable to finish, the participant or a designated adult will be allowed **5-minutes** to make the repair under the supervision of a race official. The heat will be rerun (if during) - Only ONCE.
 - No weight can be added to the car as part of the repair action. If the car is unfit to race after the **5-minute** period, or becomes disabled after further racing, it will be disqualified and taken out of the race.
 - No other modifications are allowed – such as re-lubing or gluing; only the repair to the item(s) can be performed.
- If a car suffers a mechanical problem at any time other than a heat (accidentally dropped, mishandled etc.), the race team will have up until their next scheduled heat to repair the car, but no less than **5-minutes**.
- In the Event of a Tie, a run-off race will be run.
- Any car that is discovered to be illegal during the competition by a Race Official will be disqualified from competition.



Do not deviate from official rules and regulations at Pack and/or District events. Cars that are allowed to deviate are not guaranteed to pass at the District event. That means, only cars which meet these rules and regulations shall be allowed to race for Awards.

General Rule:

If you are unclear about anything set forth herein, seek clarification of the rules prior to race day. If the rules don't specifically address something you would like to do, please seek clarification ahead of time. The goal is not to have to disqualify any Scouts or Participants on race day.



Please remember – This event is about our SCOUTS.

They need to participate and help in creating and building their cars.

Don't look at winning as the only prize they will take away from this event.





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