



World Pinewood Derby

Official Competition Rules for 2017

The Greater New York Councils is honored to have you participate in the second Annual World Championship Pinewood Derby. The Pinewood Derby has been a part of the Cub Scout Program since 1953. As its popularity has grown over the last 64 years, the Pinewood Derby has evolved and different Councils have adopted different rules for competition. To ensure that this event is truly representative of all Cub Scouts and allows all qualifying Scouts to compete on an equal racing field, there are two Racing Divisions: Stock Car Series and Pro Stock Series.

Basic Qualification:

Competition in the World Championship Pinewood Derby is open to all 2017 Cub Scout Pinewood Derby Finalists. Finalists are Cub Scouts that finished either 1st, 2nd or 3rd place in their respective rank (Tiger, Wolf, Bear, Webelos I, Webelos II) within their local District or Council Championship Race. The youth must be a registered Cub Scout at some point since January 1st, 2017. Boys that began the calendar year as a Webelos Scout and have since transitioned to a Troop are eligible to compete.

Check-in:

Each car entered in a championship race must pass through inspection by the World Championship Inspection Committee on race day, where it will be evaluated for basic specifications and then placed into one of the two Divisions based on wheel, axle and suspension attributes.

Participants will have the opportunity to make adjustments to bring their car into compliance prior to the start of the race should modifications be needed. Modifications must be completed 10 minutes prior to the start of the first race or the car cannot run. Any lubrication must be applied prior to final inspection.

After a car has passed inspection, it will be placed in a designated staging location. It will remain there until all races have been completed. Only Race Officials will handle the car until the final Award Ceremony has been completed.

If a racer arrives too late to race at their scheduled competition, they will have an opportunity to race their car on a non-competition exhibition track.

Officials have the Right to disqualify any car, which does not meet all of the stated rules and specifications. The Officials decision is final. If a Race Official makes a ruling and you wish to appeal it, a majority of Officials will be assembled and based on majority rule the decision will be upheld or overturned.



Basic Car Specifications **(applies to both Stock Car Series and Pro Stock Series):**

Dimensions and weights:

- Cars must have been built during the 2017 Pinewood Derby racing season using an Official BSA Pinewood Derby Kit.
- Width, including wheels and axles, must not exceed 2¾ inches (6.99cm).
- Length shall not exceed 7 inches (17.78cm).
- Weight shall not exceed 5.0 ounces (141.75 grams) measured on a scale accurate to 1/10th of an ounce. Overweight cars must be reduced to running weight or below before they can be entered. The official race scale shall be considered final.
- Cars must clear the center rail of the track, which is 1 5/8 inches wide by ¼ 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.
- No part of the car may protrude beyond the starting pin. The front edge of the car must not be more than 1 inch above the wheel lane of the track and be at least 1/2 inch wide at the center of the car.
- Any details added must be within length, width, and weight limits.
- All cars must have a wheel base no less than 4 inches (101.6 mm), with the two rear wheels being positioned directly across the body from one another and the two front wheels being positioned directly across the body from one another. Maximum allowable wheelbase shall not allow any portion of the wheels to extend beyond the front or rear of the car.
- 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.

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
- Axles and wheels attached to any device that mechanically alters rotation or spin.
- Loose objects on car. All weight must be securely fastened or embedded in the car.



Basic Car Specifications - continued **(applies to both Stock Car Series and Pro Stock Series):**

Wheels:

- Use only Official BSA Wheels; colored wheels are permitted.
 - All lettering and numbering, both inside and outside, must remain complete and be visible. No wheel covers, inside or outside, may be used.
 - 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.
 - Tread surface must be flat and parallel to the wheel bore.
 - Coning the 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).
 - No material may be removed from the inside wheel surfaces at any point.
 - 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.
 - Judges reserve the right to measure the wheel with calipers to verify dimensional compliance with official wheel size restrictions.
- 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.
- Wheel Bore treatment is allowed including polishing and/or tapping. 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).

Please 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 the inside of the wheel. These wheels are NOT allowed and can be EASILY RECOGNIZED at inspection. Cars with third party manufactured or modified wheels will not be permitted to race.



Basic Car Specifications - continued
(applies to both Stock Car Series and Pro Stock Series):

The following diagram offer wheel measurements and examples of disqualifying wheel modifications.

CLARIFICATION OF DISQUALIFYING / ALTERED WHEELS

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

	FAIL	FAIL	FAIL	FAIL	
	ROUNDED WHEEL	"V" WHEEL	CUPPED WHEEL	REDUCED DIAMETER	
FAIL	FAIL	FAIL	FAIL	FAIL	FAIL
"H" WHEEL	RIBBED WHEEL	SPEED WHEEL	SLANTED OUT	SLANTED IN	KNIFE EDGE

NO LIGHTENING OF THE WHEEL IS ALLOWED

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

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



STOCK CAR DIVISION: Wheels, Axles and Suspension

(in addition to Basic Car Specifications):

- The Stock Car Division is intended to maintain a level of competition of which most boys are capable of achieving with minimal adult intervention. This division is the essence of the Pinewood Derby and in the sense of fair play we've kept the rules simple. Any car that passes the basic qualifications above but doesn't pass the Stock Car rules will be moved to the Pro Stock division.
- Only official BSA Pinewood Derby Kit wheels, either new or old style, and BSA axles may be used. Wheels may be lightly sanded to remove the mold projection. This very light sanding is the ONLY wheel modification allowed. All markings must be intact on the inside and the outside of wheel. Colored BSA wheels are permitted.
- All 4 wheels must be in contact with the track at all times.
- BSA axles may be polished, deburred and lubricated but must be left otherwise untouched – period. No lubricating oil or liquid lubricant of any kind may be used. Only powdered graphite is permitted. Inspectors may use magnets to ensure BSA factory axles are present.
- Factory axle slots must be used and visible, with the factory standard 4 & 3/8 inch wheelbase. Axles are positioned 1 inch from one end (usually the front bumper), and 1 & 5/8 inches from the other (usually the rear bumper). Slots may be trued or straightened. Axels cannot be drilled into the car body in any way. The tip of the nail axle must be visible to allow inspectors to verify nail axles are being used.

PRO STOCK DIVISION: Wheels, Axles and Suspension

(in addition to Basic Car Specifications):

Wheels:

- Axle holes may be drilled into the body of the car as long as all other specs are met.
- Coning the hubs, truing the inside edge of the wheel, and removing the outer hub step down is allowed.
- Wheel Bore treatment is allowed including polishing, sanding and / or tapping, however wheel bores may not be filled and re-drilled.
- There must be at least four wheels on the car, however it is not required that all four wheels make contact with the track surface – one wheel may be lifted from the track surface.
 - Each wheel must be mounted on an axle, on the outside of the car, on the side of the car.
 - One wheel can be no more than a 45 Degree angle from the perpendicular side of the car if desired
 - Each wheel must be attached by an axle
 - Non-Dominant / Lifted wheels must meet wheel specifications



Axles:

- Nail type axles are to be used. You may or may not choose to use those found in the Official Pinewood Derby kit.
- Modifications to the Axles are allowed that include straightening, sanding, polishing, canting, grooving, beveling and tapering of axle head as long as the Diameter of the Axle is not reduced. The Diameter may not be less than 0.084 inches (2.13mm).
- Axles can be mounted by drilling axle holes or inserted into the factory or custom slots on car. If axle holes are drilled, a ¼ inch 'visibility hole' should be drilled from the bottom of the car at the tip of the nail axle. This will allow inspectors to verify nail axles are being used.
- Graphite is the only lubricant allowed at the World Championship Pinewood Derby.

Race Operations and Miscellaneous Rules:

- If a car suffers a mechanical problem during a race (i.e loses an axle, breaks a wheel, etc...), the participant and/or a designated adult will have up to five minutes to fix the car. The race will NOT be rerun, nor can ongoing races be delayed.
- If a car leaves the track during a race, the race will be rerun. If the same car leaves the track a second time during, the car will be judged "last place" in that race.
- If a car leaves its lane, Race Officials, at their discretion, may inspect the track and, if a track fault is found which may have caused the initial violation, the Race Officials, at their discretion, may order the race to be rerun after the track is repaired.
- In the event of Starter interference, the race will be re-staged and rerun.
- The track's electronic timers will record finishing place for all cars in each race. In the event of technical difficulties, the Finish Line Judges will determine the order of finish.
- In the event of a mid-race timer failure, the Official Race Committee will determine the best approach to racing based on the circumstances. All decisions of the Official Race Committee are final.
- Only Track Officials will be permitted in the track area.
- Track Officials are responsible for the proper conduct of the races. Good sportsmanship and behavior is expected for all attendees. Race Officials may ask anyone not following this rule to leave.
- Please make note that all decisions of the Official Race Committee are final.



Race Methodology:

Regular Racing

- Each car will race once in each lane (8 times). Each race is timed with electronic equipment. In the event the equipment fails, the heat(s) will be re-run.
- The slowest heat time will be dropped and the accumulation of the remaining times will determine the standings for each racer.
- Racing Rounds for Stock and Pro-Stock Series will be created based on attendance, check-in and inspection order, and other event and logistic factors.
- At the conclusion of a Round, that Round's standings will be displayed on the video wall. Multiple Rounds in a Racing Series (Stock or Pro-Stock) may be required to accommodate all entrants.
- At the conclusion of regular racing, data from all rounds will be combined, keeping Stock and Pro-Stock Series separate.

Determining Regular Racing Winners

- In the Stock Car Series, the top 3 fastest cars from each Rank will be crowned the winners and receive trophies. This will be the 1st, 2nd, and 3rd place Tigers, Wolves, Bears, Webelos I's, & Webelos II's from the Stock Car Series.
- In the Pro-Stock Cars Series, the top 3 fastest cars from each Rank will be crowned the winners and receive trophies. This will be the 1st, 2nd, and 3rd place Tigers, Wolves, Bears, Webelos I's, & Webelos II's from the Pro-Stock Series.

Winner's Cup Runoff – "Fast 15 Finale"

- In the Stock Car Series, the top 3 fastest cars from each Rank (Regular Race Winners) will compete for the overall 1st, 2nd, and 3rd place Stock Car Series champion. This is an elimination race where all 15 cars race on one track to determine the top 8. The top 8 race to determine the top 4. The top 4 race one last time to get the fastest Stock car.
- In the Pro-Stock Cars Series, the top 3 fastest cars from each Rank (Regular Race Winners) will compete for the overall 1st, 2nd, and 3rd place Pro-Stock Car Series champion. This is an elimination race where all 15 cars race on one track to determine the top 8. The top 8 race to determine the top 4. The top 4 race one last time to get the fastest Pro-Stock car.



Trophy Ceremony

Trophies will be conferred at the conclusion of the Fast 15 Finale.

- GNYC Council Finals:
 - 1st – 3rd Tigers
 - 1st – 3rd Wolves
 - 1st – 3rd Bears
 - 1st – 3rd Webelos I
 - 1st – 3rd Webelos II
- Stock Car Race – World Champion Winners:
 - 1st – 3rd Tigers
 - 1st – 3rd Wolves
 - 1st – 3rd Bears
 - 1st – 3rd Webelos I
 - 1st – 3rd Webelos II
- Pro-Stock Car Race – World Champion Winners:
 - 1st – 3rd Tigers
 - 1st – 3rd Wolves
 - 1st – 3rd Bears
 - 1st – 3rd Webelos I
 - 1st – 3rd Webelos II
- Stock Car Winners' Cup Runoff - Fastest 15 from Stock Car Race
Elimination race: This is an elimination race where all 15 cars race to determine the top 8. Those 8 race to determine the top 4. The top 4 race one last time to get the fastest car.
 - 1st Place Winners Cup – Stock Car Division
- Pro-Stock Car Winners' Cup Runoff – Fastest 15 from Pro-Stock Car Race
Elimination race: This is an elimination race where all 15 cars race to determine the top 8. Those 8 race to determine the top 4. The top 4 race one last time to get the fastest car.
 - 1st Place Winners Cup – Pro-Stock Car Division
- Additional Awards:
 - Most Patriotic
 - Best Paint Job
 - Best Scout Theme
 - Most Creative
 - Most Realistic