



2019 Williamson Road District Pinewood Derby



Host: Pack 22, Knoxville, Pennsylvania
 Steve Gee, Cubmaster
 Date: Saturday March 30th, 2019
 Location: Northern Tier Recreation Center
 419 E Main St, Knoxville, PA 16928
 Time: 9:30 am Registration

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 offer the greatest opportunities to Scouts in the Williamson Road District (WRD), we have chosen to follow the rules of the World Championship Pinewood Derby Rules. This competition is sponsored by the Greater New York Councils and is held annually in Time Square in New York City. Competition in the World Championship Pinewood Derby is open to all 2019 Cub Scout Pinewood Derby Finalists. Finalists are Cub Scouts that finished 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, 2019. Boys that began the calendar year as a Webelos Scout and have since transitioned to a Troop are eligible to compete.

Please remember, while you work with your Cub, that the essence of the Pinewood Derby is to maintain a level of competition of which most boys are capable of achieving, with **minimal** adult intervention, and a sense of fair play.

Check-in:

Each car entered in a championship race must pass through inspection by the WRD Pinewood Derby Inspection Committee on race day, where it will be evaluated for basic specifications. 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 be disqualified.

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.

NOTE (TL/DR): Basic and most Important Rules or Regulations are Highlighted and BOLD

Car Specifications:

• Maximum Width (including wheels and axles):	2.750"	69.85mm
• Maximum Length:	7.000"	177.80mm
• Maximum Weight:	5.000 Oz	141.75 g
• Minimum Width Between Wheels:	1.750"	44.45mm
• Minimum Bottom Clearance Of Car Body To Track:	0.375"	9.53mm
• Minimum Front Nose Width:	0.500"	12.70mm
• Minimum Wheel Diameter:	1.170"	29.72mm
• Minimum Wheel Weight:	0.086 Oz	2.45 g

All measurements will be taken using the official scales and calipers when the car is registered. The scale is accurate to at least 0.10 oz (2.83 g). Overweight cars must be reduced to running weight or below before they can be entered. The official race scale and calipers shall be considered final.



Rules:

General:

1. Cars must have been **built during 2019** Pinewood Derby racing season **using an Official BSA Pinewood Derby Kit.**
2. Each car must pass inspection, during registration, before it may compete.
3. All cars will be impounded, when registered, and will be returned at the end of the race.
4. Repairs will be limited to only replacing axels/wheels that are broken or lost during the race.
5. Repairs are limited to five (5) minutes.
6. If a car jumps off the track or jumps lane, the heat will be run again. If the same car jumps off the track a second time, it will automatically lose the heat.
7. There is no designated front or back to the supplied body: either end may be the front
8. **Only Official Cub Scout/BSA Pinewood Derby Wheels and Axels permitted** – No solid axels
9. Official Cub Scout/BSA wheels must be used, you may remove the seams and imperfections from the wheels
10. The axles may be altered, polished and lubricated only
11. **Only dry lubricant is permitted** – Dry Graphite is the only approved lubricant
12. **Car wheelbase may not be altered** – Must use slots provided on block for axel wheel pins
13. Details, such as steering wheel and driver are allowed as long as these details, do not exceed the maximum length, width, or weight specifications and are attached firmly
14. The car must be free-wheeling, with no stored energy or movable weights
15. No part of the car may extend past the starting pin

Dimensions and Weights:

1. Cars must clear the center rail of the track, which is 1.625" (41.28mm) wide by 0.25" (6.35mm) tall along the entire length of the car. Minimum clearance between the bottom of the car and the bottom of the wheels shall be 0.375" (9.53mm) to avoid contact with the tracks center guide strip.
2. No part of the car may protrude beyond the starting pin. The front edge of the car must not be more than 1.00" (25.40mm) above the wheel lane of the track and be at least 0.50" (12.7mm) wide at the center of the car.
3. Any details added must be within length, width, and weight limits.
4. All cars must have a wheel base no less than 4.00" (101.60 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.
5. 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.



Prohibited Items: Items which CANNOT be used

1. Magnets, springs or suspension systems of any type.
2. Starting devices, finish line devices, propellants, or propulsion systems
3. Wet paint, or Sticky substances
4. Glass or excessively fragile parts
5. Electronic or lighting devices (if lights are on the car they must be turned off)
6. Bearings, Bushings, Washers or Solid one-piece rod style axles
7. Axles and wheels attached to any device that mechanically alters rotation or spin.
8. Loose objects on car. All weight must be securely fastened or embedded in the car.
9. Any liquid lubricants.

Axles:

1. 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.
2. 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.
3. Nail type axles are to be used. You may or may not choose to use those found in the Official Pinewood Derby kit.
4. 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).
5. Axles can be mounted by drilling axle holes or inserted into the factory or custom slots on car. If axle holes are drilled, a 1/4 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.
6. Graphite is the only lubricant allowed at the Pinewood Derby.

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.

1. Use only Official BSA Wheels; colored wheels are permitted.
2. All lettering and numbering, both inside and outside, must remain complete and be visible. No wheel covers, inside or outside, may be used.



3. The fluting and other BSA markings on the outside wheel area must remain visible.
4. 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.
5. Tread surface must be flat and parallel to the wheel bore and all four wheels must set flat on the track with the axle parallel to the track surface.
6. 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).
7. No material may be removed from the inside wheel surfaces at any point.
8. 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.
9. Judges reserve the right to measure the wheel with calipers to verify dimensional compliance with official wheel size restrictions.
10. 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.
11. 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).
12. The following diagram offer wheel measurements and examples of disqualifying wheel modifications. No alteration, narrowing, lathe cutting, lightening or re-shaping of wheels (inside or outside) is permitted. Light sanding of wheel tread to remove irregularities is permissible; however, the wheel tread must be flat.
 - Minimum Wheel Diameter: 1.70" 29.72mm
 - Minimum Wheel Weight: 0.086 Oz 2.45 g

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



Race Operations and Miscellaneous Rules:

1. 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.
2. 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.
3. 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.
4. In the event of Starter interference, the race will be re-staged and rerun.
5. 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.
6. 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.
7. Only Track Officials will be permitted in the track area.
8. 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.
9. Please make note that all decisions of the Official Race Committee are final.

Race Methodology:

1. 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.
2. The slowest heat time will be dropped and the accumulation of the remaining times will determine the standings for each racer.
3. Racing Rounds will be created based on attendance, check-in and inspection order, and other event and logistic factors.
4. At the conclusion of a Round, that Round's standings will be announced. Multiple Rounds may be required to accommodate all entrants.
5. At the conclusion of regular racing, data from all rounds will be combined.
6. **Regular Racing Winners:** 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
7. **Winner's Cup Runoff – "Fast 15 Finale":** The top 3 fastest cars from each Rank (Regular Race Winners) will compete for the overall 1st, 2nd, and 3rd place championship. 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 car.



Awards:

- 1st → 3rd Tigers
- 1st → 3rd Wolves
- 1st → 3rd Bears
- 1st → 3rd Webelos I
- 1st → 3rd Webelos II
- 1st → 3rd Winner's Cup Runoff
- Most Patriotic
- Best Paint Job
- Best Scout Theme
- Most Creative
- Most Realistic

Safety:

Make safety your top priority. David Meade, author of Pinewood Derby® Speed Secrets, offers useful guidelines for maintaining safety:

1. Gather your safety essentials: dust mask, goggles, and latex gloves.
2. Wear eye protection at all times.
3. Monitor Cub Scouts' use of tools.
4. Wear dust mask when appropriate.
5. Work in a well-lighted and well-ventilated area.
6. Consider wearing gloves when using sharp tools.
7. Do not wear loose-fitting clothing.
8. Do not melt lead; handle lead with care.
9. Follow all safety rules and precautions listed on the tools and products you use.
10. Keep your work area clean and organized.