



District - Pine Wood Derby Official Rules 2010



Date: April 17, 2009
Location: Church of Jesus Christ of Latter-Day Saints
218 Serenada Drive, Georgetown, 78628
Directions: Take Williams Drive northwest, to Lakeway Blvd. Turn right. Go to Northwest Blvd, Turn left, Go to Serenada Drive, Turn left. The building is on the left side.

Note: Each Pack that wishes to participate in the District race will be responsible for providing adult volunteers to help run the race.

Qualification: The top three from each rank from each Pack Qualify! 12 cars per Pack (Alternates permissible)

Awards: There will be four divisions based on the Cub's rank.
Trophies will be awarded to the 1st, 2nd, and 3rd place winners from each rank

Philosophy: The Pine Wood Derby is set up to be a technical learning / teaching experience.
Cub Scouts are to build the cars with the aid of an adult.

**** Please read all of the rules. They are always some changes to items have changed from prior years. ****

If you have questions, please contact:

Rules / Registration: Wally Tuten at wgtuten@gmail.com

I: REGISTRATION & Best of Show Voting TIMES: Will be announced shortly

WEBELOS:
BEARS:
WOLVES:
TIGERS:

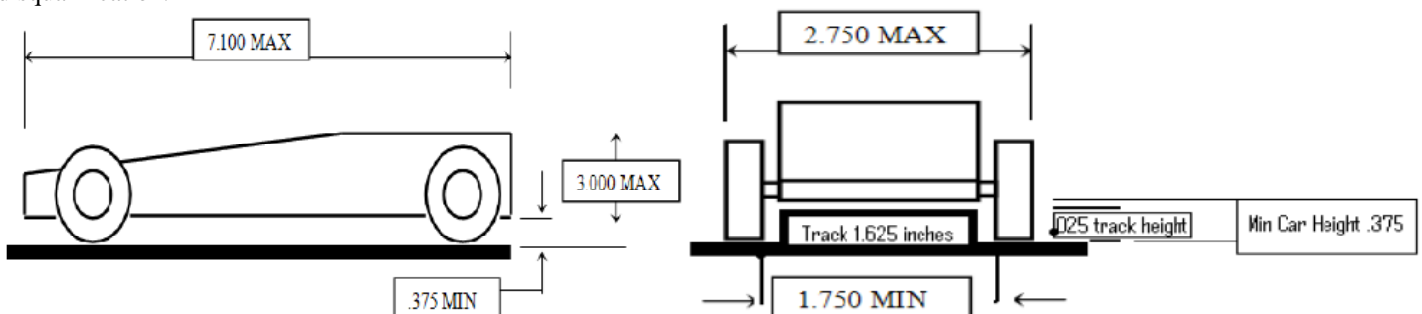
(Racing for each division to immediately start after registration)

District Finals: Starts immediately after the last set of races. (Target 2:00pm)

II: Length, Width & Clearance:

- Maximum overall width (including wheels and axles) shall not exceed 2-3/4 (2.750) inches.
- Minimum width between wheels shall be 1-3/4 (1.750) inches at the axles.
- Minimum clearance between bottom of car and track shall be 3/8 (.375) inch.
- Maximum length shall not exceed 7.100 inches
- Maximum height between the wheels and the top of the car shall not exceed 3.000 inches.

**** NOTE: All dimensions will be verified by the official templates. Failure to meet these specifications will result in disqualification.**



III: Weight:

The weight of the finished car shall not exceed 5.0 ounces. The reading of the official race scale is considered final.

IV: Appearance:

Details such as steering wheel, driver, spoiler, decals, painting, etc. are permissible as long as all of the size and weight specifications are met. Paint and glues must be dry when submitted for inspection or the car will not be accepted.

V: Numbering:

Clearly number the car with your assigned car number; it is listed on the box your kit came in. Numbers can be placed on the underside of the car. Numbers can either be painted, stickered or decaled with a contrasting color.

VI: Lubrication:

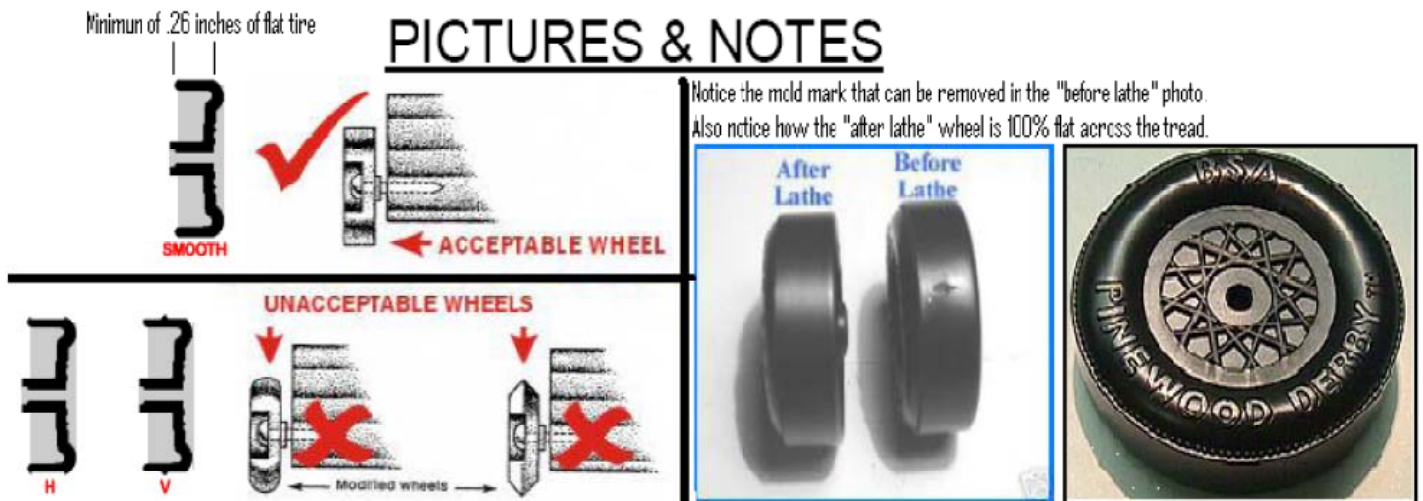
All lubricants must be completely dry when submitted for inspection. Includes all wet products. (NYOIL)

Dry powdered lubricants such as graphite or Teflon may be used as well. Lubricants must be applied before inspection and no lubricants may be applied after the car has been accepted.

*** Please lubricate your car at home or outside the church. Every year we find and have to clean up a graphite mess inside the church.*

VII: Wheels: Important, please read these very carefully. If your wheels are not as listed below your car will be disqualified.

- Only official Scout wheels with “BSA PINE WOOD DERBY” molded on the outside may be used.
- Wheels may be sanded or lathe turned to remove the molding seams from the tread.
- Minimum wheel diameter is based upon the judge’s visual inspection of the serrated edge. This edge must remain intact and unmodified, no exceptions. (see far right photo below)
- Wheels may not be reshaped. The entire “tread” portion of the wheel must be 100% flat. (minimum 0.260 inches across, 0.280 is normal) Wheels with any rounding or cupping will not be accepted, the entire face of the wheel must be in contact with the track.
 - **Note:** Be careful when using sandpaper, as you may round the tread. (See “unacceptable wheels” below) You may consider folding sandpaper around a ruler or other flat tool so that you can sand the wheel and still keep it flat. You must avoid “rounding” the tread.
- No “hub caps” or wheel disks are allowed.
- No bushings or other surface can be added between the nail and the BSA wheel. The wheel must ride on the nail.



The serrated edge shown in the right picture must remain unmodified. The bumps that appear as dots can't be removed or modified in any way.

VIII: Axles / Nail:

- Unlimited modifications to the nails are allowed.
- Two nails must align with each other to create one front and one rear axle.
- Free floating washers on the nails are prohibited.
- The distance between the front and rear axles may be changed from that of the standard derby car kit.
- Axles may not be angled in the car body slots/holes that would cause the wheel not to run flat to the surface of the track.
- Axles must be oriented to where at least three of the four wheels touch the track. (One wheel can be off the ground)

IX: Wood Block:

- No pre-cut wooden blocks can be used (as purchased from the internet or other seller).
- Each Scout must build his own car from an official BSA block of wood.

X: Build, Don't Buy: Scouts and parents must build "their best" not "buy the best".

- No pre-made or store bought cars allowed.
- Official BSA parts must be used. The BSA wood block, nails and wheels can only be modified by the Scout and their parents / guardian. These items cannot be purchased, if they have been modified in any way. This is not a contest on who has the largest bank account. This is a contest of who can build the fastest cars themselves. The PWD rules judge will have final say on if the parts appear to have been purchased. Purchased parts will result in disqualification.
- **** To be very clear; any car perceived to have "purchased" parts will be disqualified. ****

X: Ground Rules:

- The race is open to the 1st, 2nd or 3rd place winners from each of the four ranks (Tiger, Wolf, Bear and Webelos). Each Scout must enter only one car they built new for this year's race season.
- If a car suffers a mechanical problem, loses an axle, breaks a wheel, etc. and a repair can be accomplished within 5 minutes, the heat will be run again. If not, the car will automatically lose the heat. Repairs must be done in the pit area. Any car that has been repaired must be re-inspected before re-entering the race. Lubricant may not be reapplied during or after repairs.
- No cars or parts of cars from previous years may be used.
- The car must be freewheeling with no starting device or other means of propulsion.
- If a car jumps off the track, the heat will be run again. If the same car jumps off the track a second time, it will automatically lose the heat.
- An electronic timer will be used at the finish line. If the timer malfunctions, then the line judge at the finish line will call the winner. If the race was too close to easily call, then the heat will be re-run.
- Only race officials and boys racing in the current heat will be permitted in the track area.
- Racers must be registered prior to the start of racing. No late arrivals.
- Scouts need to be present while their car is competing. If a Scout leaves during racing and/or judging, the Scout must appoint someone who does not have a car entered to be present when his car is racing or is being judged. Cars without a representative will be pulled from competition.

XI: Inspection & Disputes:

- Each car must pass inspection by the official inspection committee before it may compete. The inspectors will disqualify cars which do not meet these rules. Car owners will be informed of any violations and given an opportunity to modify the car to meet these rules.
- **Any car identified as having "purchased" parts will be disqualified.**
- Any participant (including parents) has the right to appeal to the Rules Committee for an interpretation of these rules. The Rules Committee, by majority vote, will be the final judge of these rules. If only one member of the Committee is present, they will have the final say.
- Good sportsmanship and behavior is expected. Race Officials may ask anyone not following these rules to leave.
- Remember that the focus of this event is not to win at any cost, but for each Scout to DO HIS BEST!

XII: Race Procedure:

- Each Scout must bring his car to the inspection table during their designated registration time. If the car fails to meet any of the rules listed below then the Scout will be given an opportunity to correct the problem up to the close of their registration time slot.
- After inspection, the car will be registered and placed on pit row for voting. From this point forward, the Scout cannot handle the car. Only race officials can handle the cars during competition.
- The starter/derby coordinator will call each Scout to the track when it is time for his car to race. The Scout will sit next to the track to where his car is running. Once the races are completed, the scout will be asked to leave track area.
- Advancing or winning cars will be announced shortly afterwards.
- When a car has been eliminated from competition, it will be placed in a designated area marked "PICK UP"

XIII: AWARDS:

Awards will be given for the "fastest" as follows:

- Speed: 1st, 2nd & 3rd place trophies will be awarded to the fastest cars from each Scout rank. (12 trophies)
- District Speed Finals: result in 1st, 2nd & 3rd awarded to the Districts three fastest cars (3 trophies)

XIV: Speed Tips & Other Tips:

MAKE THE CARS STURDY: This is the most important tip. There have been several extremely fast cars in the past that have broken and either could not get fixed in the allotted time or, after having been fixed, did not run nearly as fast as before. Advancing cars can easily run over 20 individual races.

1. **Car Body:** Should be cut to a very thin and flat or wedge shape. The front and rear should be rounded. Although aerodynamics plays a very small role in the speed of cars, every little bit helps. We recommend that you do not "V" point the front of the car as it is difficult to stage a pointed car in the starting pin. It is recommended that you leave at least a 1/2 inch wide flat surface on the front of the car. (See photos of two PWD cars below)
2. **Wheel Base:** (Distance between axles) Make it as long as possible but not to exceed overall length that the rules allow
3. **Weight:** Add weight so that the car is as close to 5.00 oz. but not a gram over. Don't ask at check in how much weight you can add. The registration judges will only tell you if the car is under or over 5.00 oz. We will adjust the scale to tell you how much your car weighs.
4. **Alignment:** To check alignment, roll the cars across a flat surface such as a glass table. Set up the wheels as flat as possible. Canting the nails to the front, back, up or down will slow the car down.
5. **Axles:** The axles should be free of all burs, sanded and polished until smooth or mirror-like. This can be accomplished by setting up a power drill in a vise. Remove burs from the nail and nail head using a fine-toothed file. Sand using very fine sandpaper then polish using emery cloth or a polishing compound. Unlimited modifications are allowed on the axles.
6. **Glue Axles:** Glue the nails into the body slots with epoxy or a hot glue gun to keep them from slipping out. Be careful if you use "super-glue" as the vapors can actually glue the wheel to the nail even if the drop of glue is kept clear of the wheel.
7. **Axle Tubes:** Use a brass or aluminum tube as an axle. Obtain a size to where the inside diameter would be a snug fit to the axle nail. This will aid in wheel alignment. Local hobby stores carry these items.
8. **Lubrication:** Liberally lubricate the wheels, axles and the side of the body. Graphite-Moly Lube is a good lubricant and can be bought at most hobby stores. Work the lubricant into the plastic and wood surfaces. NOTE: Wet lubricants, such as NYOIL or similar products, can be used but must be completely dry when submitted for inspection.
9. **Bad Wheels:** If you receive a set of wheels with your Pine Wood Derby kit that are either off-center, misaligned or out of balance, the Scout shop at 290 & 183 sells a set of four BSA wheels and axles. You are not allowed to use purchased wheels that have been modified from stock in any way. The Scout must do any modifications himself (with the help of a parent)
10. **Ornamentation:** Please make any ornamentation sturdy. In past events, several cars had pieces break off during competition. Local hobby stores also have a wide variety of decals, stickers, fins, roll bars, engines, etc. The sky is the limit so be as creative as possible.
11. **Don't wait!** Start building your car in December. It really does take longer than you think. A fast car can easily take 50+ hours to build.
12. **Weight Placement:** Car weight should be placed in the rear so the fore/aft balance point is about 1-1/4" to 1-1/2" in front of the rear axles.
13. **Weight Types:** Local hobby stores have a wide variety of sizes and shapes of weights. If you buy the weights that are designed to go under the car (see photo to the right) be sure to recess the weights into the body. These weights, if simply attached to the bottom may hit the track or result in the car having less than .375 inches of ground clearance.



Painted car, very difficult to stage



1/2 inch wide front edge, good for staging.

