

**2018 10th Annual
Hunterdon Arrowhead District
Washington Crossing Council**

Pinewood Derby

**RULES
and
REGULATIONS**

Parent Participation and Safety

Parents are encouraged to teach new skills and principles as the Scouts build their cars. The Scout should do as much as he can by himself, try not to be too critical or expect perfection. Any technical assistance given by an adult should be fully explained to the Scout so that he may use the knowledge on future projects. Above all else, participating in the Pinewood Derby event should be safe and fun. Power tools, sharp hand tools, paints, glues, and other potentially dangerous items must only be used under the careful and strict supervision of a knowledgeable adult. Under no circumstances should parents work on a Pinewood Derby race car when the Scout is not present.

1 PURPOSE

The purpose of this document is to make sure that the participants in the Pack, District & Council's Annual Pinewood Derby Events have as much fun as possible by understanding the rules and regulations of the event as well as learning a few tips along the way.

The Pack, District & Council's Pinewood Derby Events are a parent/guardian and son event, and are recommended as such by the National Boy Scouts of America. The Pinewood Derby Committee **STRONGLY SUGGESTS** that each parent emphasize this idea with your son.

Two things the Pinewood Derby requires each participant to learn are:

- 1) The craft skills necessary to build a car, and
- 2) The rules that **must** be followed to participate in the racing.

Even more important, though, is how we act and behave while participating in the Pinewood Derby event or any other group activity.

This is called sportsmanship.

Sportsmanship:

The first thing to remember about **sportsmanship** is that everyone's skills are a little different.

You may be good at something like singing or drawing, but not as good at something else like basketball or computers. Parents have different skill levels, too. This doesn't mean that you are a good person one time and not good another time. You can always be a good person, whether or not you have good car-building skills. Remember, you and your friends are individuals first and racers second. This idea is often called having respect for others.

The second thing to remember is to follow the rules.

Without rules, there would be no Pinewood Derby event. You will never know if you are really good at doing something unless you follow the rules. This is often called being honest. All Scouts/Parents will be required to complete and sign a "Racer's Pledge" card in order to participate.

The last thing to remember about good sportsmanship is that there are winners and losers in every competition.

You accept this when you choose to compete. There may be times when you win and feel happy, and times when you lose and feel unhappy. Being a winner is easy, and losing is sometimes hard. If you win, you must not brag or gloat. If you lose, you must not feel jealous or bitter. To be a good sportsman, you must be able to say, "I did my best" and be satisfied with the results. You must also be able to appreciate and feel happy for someone else when they run a good race or build a great car.

Remember, the main "Purpose" of this event is to have FUN! If you have fun and help others to have fun, then we are all winners!

Good Luck and Have Fun!

2 GENERAL RULES & REGULATIONS

The following Rules and Regulations apply to all Pinewood Derby Race Events.

NOTE: Each Scout is responsible for understanding and following all rules. Nothing would be more heartbreaking than to work hard on a car and then have it disqualified for a rule violation. Parents: please review the rules with your Scout and help him understand the regulations, science, and sportsmanship of the Pinewood Derby.

2.1 Qualification to Race

- a.) All registered Scout members- Tigers, Wolves, Bears, Webelos 1 and AOL Scouts may design, build and enter cars that are eligible to participate in the "Cub Scout Race" event.
- b.) Siblings, Parents or Guardians of Cub Scouts registered in the Pack may design, build and enter cars that are eligible to participate in the "Sibling & Adult Race" or "Unlimited" event as well.

2.2 Essential Materials

- a.) All cars entered shall be constructed from the "Official BSA Grand Prix Pinewood Derby Kit" (referred to herein as the kit).

2.3 Attendance

The Cub Scout MUST register/enter his own car for competition. This means that the Cub Scout must be present at the "Inspection and Registration" process to enter his car into competition.

2.4 New Work

- a.) Construction of ALL entries MUST have begun AFTER last year's Pack, District or Council Pinewood Derby Events.
- b.) The car must be newly constructed each year.
- c.) Modifications to previous year cars shall not be accepted.

2.5 Failure to Pass Inspection

- a.) The Official Inspection Committee shall be responsible to inspect and to disqualify any car that does not meet the rules as described herein.
- b.) If a car does not pass inspection, the owner will be informed of the reason his car did not pass.
- c.) Cars that fail the initial inspection may be taken for modifications and brought back no later than the close of registration for final inspection and registration.
- d.) After a car passes inspection and is registered, it will be impounded & stored by the Pinewood Derby Race Committee until race day/time.
- e.) No car may be altered in any way after it has been registered.
- f.) After this point the only persons allowed to handle the cars will be a member of the Pinewood Derby Race Committee or the registered owner of the car.

3 CUB SCOUT RACE CAR DESIGN REGULATIONS

3.1 Overall Car Specifications

- a.) Maximum Overall Width (outside edge-to-edge of wheels): 2 3/4 "
- b.) Minimum Width between wheels – 1 3/4 "

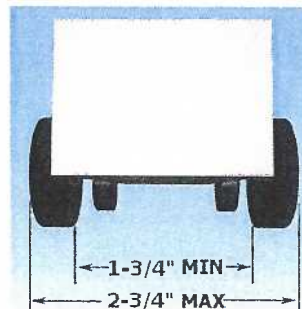


Figure 1 - Inside & Outside Wheel Specifications

- c.) Wheelbase – The distance (4 3/8") between axles must NOT be changed.
- d.) Maximum Length - 7"
- e.) Maximum Height – Not to exceed 5"

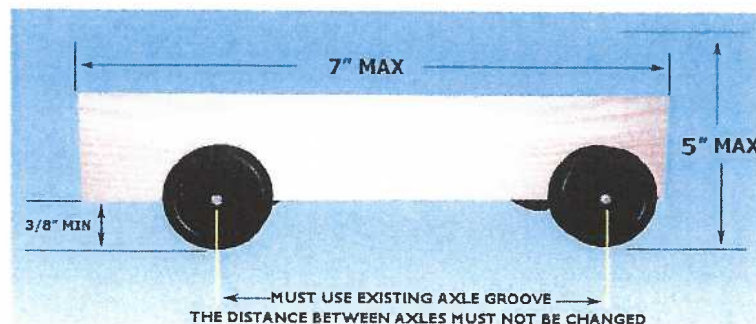


Figure 2 - Length, Height, Wheelbase, & Clearance Requirements

- f.) Minimum Track Clearance - Bottom clearance between car and track - 3/8"

NOTE: Even though the lane strips are typically only 1/4" high. The extra clearance is to allow the car to go from the sloped portion of the track to the flat portion without dragging.

- g.) Front of Car - No part of the car can extend beyond the starting post and the front of the car must be no higher than 1/2" where it contacts the starting post. "U" or "V" shaped front ends are not allowed.
- h.) Maximum Weight - Not over 5.00 Ounces (141.75 grams)

3.2 Material

- a.) Race cars shall be constructed for this event from the parts contained in the Official BSA Grand Prix Pinewood Derby Kit (referred to herein as the kit) as sold by the local Scout Shops. This kit includes the wooden block with pre-cut axle slots, 4 plastic wheels and 4 metal nails to be used for axles.
- b.) Molded metal bodies over wooden frames are beyond most parent/son team and are therefore not acceptable.
- c.) Materials from the kit may be supplemented but not replaced. The main body must be constructed from the wood in the kit.
- d.) "ADD-ONS" are generally not restricted as long as they meet with the rules and regulations as specified within this document. However mirrored materials, highly polished metals or other materials designed to project or reflect an image of the car in front of the vehicle on the track causing the electronic sensors to capture the image and not the actual car are prohibited building materials and design elements.
- e.) Special paint, decals, decorations, etc. are allowed.
- f.) Unofficial kits will not be accepted. The "Pine Car" Pre-Cut Design bodies WILL NOT be allowed to enter the Pinewood Derby Event.
- g.) Official BSA colored (blue, red, orange, yellow) wheels will be acceptable. These must have the "Official BSA" lettering in the mold.

3.3 Weight

"Weight" is considered to be any material on the car that is not provided in the kit.

- a.) Cars may weigh no more than five (5.00) ounces (141.75 grams) total weight as determined on the official scales during the pre-race registration/inspection.
- b.) Weight may be added to the car and will be considered part of the car for purposes of all measurements.
- c.) The car may be drilled/hollowed out and weight securely added.
- d.) No liquid weights are permitted inside or attached to the outside of the car body.
- e.) No weights may be added after the car has been registered, inspected and impounded for the event race.

- f.) All weight must be securely fastened to the car, e.g. by permanent glue, nails or screws, but not by "sticky substances", e.g. tape, or tack spray. Heavy-duty double back tape such as that used by the ones sold by the BSA - Stick-On Weights (WW7603) will be allowed.
- g.) Weights shall be passive, i.e. non-moveable, non-magnetic, non-electric.

NOTE: The official scale will be available before the date of the event as well as during the registration process.

HINT: If you are unable to check the weight of your car on the official scale prior to registration, then it would be a good idea to be slightly under weight on any other scale you are using. On race day, it is typically easier to add weight than it is to remove weight.

3.4 Wheels and Axles

- a.) All cars must have four (4) wheels. All four wheels must be installed in the provided axle slots. The car shall roll on all four (4) of the wheels from the official kit.
- b.) All four wheels MUST be in contact with a flat surface when the car is placed on it. Wheels should be aligned so that the complete surface of the wheel is in contact with the track (not cambered in or out).
- c.) The wheels shall turn about the axle nails from the official kit. It must be obvious to the judges that the precut grooves in the wooden block, wheels, and the nails from the kit are being used. No "After Market" wheels or axles are allowed. No shaving of the wheels (inside or out) to remove mass is allowed.
- d.) Only official BSA wheels and axles may be used as replacements.
- e.) The wheel base (distance between the axles) must not be changed from the standard locations of the official car kit.
- f.) Hubcaps/wheel covers are not allowed.
- g.) The axle nails shall be firmly affixed to the wood of the car body, and MUST be placed in the original 'axle grooves' in the supplied wooden block.
- h.) The axles provided may be altered only in the manner as to remove the metal mold imperfections near the nail head. The axles may be polished and lubricated.
- i.) Axles may not be angled in the car body slots in a manner that would cause the wheel not to run flat to the surface of the track.
- j.) The axles head and shaft diameter may not be modified or reduced.
- k.) THE SHAPE AND FORM OF THE WHEELS CANNOT BE MODIFIED OR RESHAPED, however wheels may be sanded to remove molding burrs. Wheels may not be tapered or rounded.

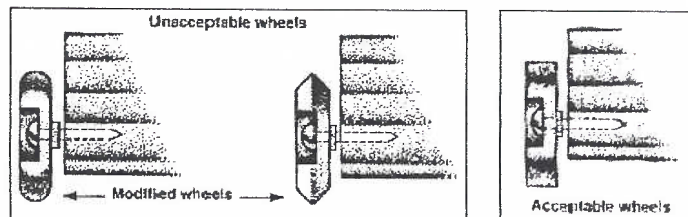


Figure 3 - Example of Rule Breaking Modified Wheels

- l.) Wheel treatment (hub and tread smoothing and polishing) may not result in substantial removal of mass nor in reducing the wheel width from the original kit wheels.
- m.) Regarding wheel smoothing, the inside and outside of the wheel and hub may not be altered or modified in anyway (ie, no material removed from the inside of the wheel) with the exception of the removal of the burrs and molding marks on the outside of the tread. The wheels may not be cut, drilled, beveled, tapered, thin sanded, wafered, lathe turned or rounded.
- n.) Some of the original "tread marks" on the wheel face must remain intact, i.e. apparent to the inspector. The lettering "Official BSA" on the inside/outside of the wheel must be clearly visible.
- o.) It must be obvious to the inspection committee members that the axle grooves, wheels and the axles provided in the kit are being used.

3.5 Size

- a.) Race cars may be no longer than 7 inches, as determined by the official gages during the Registration and Inspection process.
- b.) Race cars may be no wider than 2 $\frac{3}{4}$ inches, as determined by the official gages during the Registration and Inspection.
- c.) Underside clearance of at least $\frac{3}{8}$ inches and inside wheel-to-wheel clearance of at least 1 $\frac{3}{4}$ inches is recommended, so that the car will run on the race track.
- d.) Adequate clearance is the responsibility of the race car builder.

3.6 Lubricants

- a.) The wheels and axles may be lubricated with powdered WHITE TEFLON LUBE OR DRY POWDERED GRAPHITE. No liquid lubricants will be allowed.
- b.) Lubricants may not foul the track.
- c.) Lubrication will only be allowed prior to registration. Once inspection is completed, no additional lubrication will be allowed.
- d.) If wheel or axle repairs are necessary during the race, only the replacement part may be re-lubricated under the supervision of a race official.

3.7 Unacceptable Construction

- a.) The following may NOT be used in conjunction with the wheels or axles:
 - Hubcaps
 - Washers
 - Inserts
 - Sleeves
 - Bearings
- b.) No loose material of any kind is permitted in or on the car.

3.8 Gravity Powered

- a.) The race car may not be constructed or treated in such a way that the track's starting mechanism imparts momentum to the car.

- b.) Cars with sticky substances on the front of the car and protrusions which may catch on the starting pin shall be disqualified.
- c.) The car shall not run on any type of springs.
- d.) The car must be freewheeling with no starting devices.
- e.) No external sources of power, magnets, engines, jets, compressed air or propulsion systems other than gravity may be used.
- f.) If the track's electronic finish line sensor's result is challenged by the Finish Line Judges, the race will be re-staged and re-run.

4 RACE DAY RULES, REGULATIONS, AND INFORMATION

Competition will consist of heat races within each RANK, and a series of Grand Final heats. Race Committee members are responsible for the proper conduct of the races. The decisions of the Race Committee members are deemed final.

4.1.1 Check-in and Racing

- a.) The Cub Scout is expected to race their car.

If due to illness or other valid reason, the scout is unable to race their car, another child may drive their car with the approval of the Race Committee.

4.2 Inspection Gages

- a.) The race-day "Inspection and Car Registration" area will have the official scales, length boxes and other measurement tools necessary to inspect the cars.
- b.) The check-in equipment used during the Inspection and Registration of cars shall be the official equipment for the race.
- c.) The same 5 oz. Master Weight used for scale calibration in pre-race check-in will also be available on race day.
- d.) Assigned car numbers will be temporarily be attached to the rear of the car with a colored sticker by the Race Committee members at the time of registration. The scout must indicate to the race officials which end of the car is the front/rear. Other numbers (decals) may appear on the car, but the assigned number will be the one used to track all race day heats by the Race Committee.
- e.) If the track's electronic finish line sensor's result is challenged by the Finish Line Judges, the race will be re-staged and re-run.

NOTE: Please stress this fact to all Cub Scouts. They should be prepared to make adjustments to their cars if necessary.

HINT: If you are unable to check the weight of your car on the official scale prior to registration, then it would be a good idea to be slightly under weight on any other scale you are using. It is typically easier to add weight than it is to remove weight.

4.3 Race Day Lubrication

All Lubrication must be done prior to registration/inspection.

4.4 Car Leaves Lane

- a.) If, during a race heat, a car leaves its lane but proceeds down the track in a manner that does not interfere with its opponent, then the race will be called normally.

- b.) If the car leaves its lane and interferes with another car, the racer will be given 2 minutes to inspect and/or repair car, re-qualify and the race will be re-staged and re-run.
- c.) If the same car leaves its lane again and interferes with another car, that car will be judged last place and disqualified from any future races. The race will be re-staged and re-run without that car.

4.5 Car Leaves Track

- a.) If, during a race heat, a car leaves the track without interfering with its opponents, the racer will be given 2 minutes to inspect and/or repair car, re-qualify and the race will be re-staged and re-run.
- b.) If the same car again leaves the track without interfering with its opponents, that car will be judged last place and the race will be called normally.

4.6 Car Repair (Without Fault)

- a.) If, during the race, a wheel falls off or the car becomes otherwise damaged, then the SCOUT may, to the best of his ability perform repairs with the assistance of his adult partner.
- b.) The Racer and adult partner shall be allowed 2 minutes to perform repairs and re-qualify for racing. This time may be extended upon the approval of the Trackmaster.
- c.) The car shall be re-qualified for racing in accordance with Rules within this document.

4.7 Car Repair (With Fault)

- a.) If a car is damaged due to track fault, or damage caused by another car or person, then the Trackmaster, at his sole discretion, may allow additional repair assistance and time to the Cub.
- b.) The car shall be re-qualified for racing in accordance with Rules within this document.

4.8 Race Area

Only members of the Race Committee and the Cub Scouts competing during such heat may enter the track area. This rule will be strictly enforced by Race Committee officials.

4.9 Rewards and Recognition

The most important values in Pinewood Derby competition are parent/son participation, good sportsmanship and learning how to follow rules.

The Awards Committee is responsible for recognizing and encouraging these qualities in addition to traditional racing awards.

Racers will be recognized as follows:

- a.) Every participating Scout will receive a Pinewood Derby Patch.
- b.) Trophy awards will be given to the First, Second and Third place finishers at each Den level (Tigers, Wolves, Bears, Webelos 1, AOL and Siblings).
- c.) Trophy awards will also be given for the overall First, Second and Third place finishers.
- d.) Please be aware that the awards outlined here may vary based on the individual pack, district or council events.